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A follow-up study of teachers trained in the interdisciplinary/integrated day program at the University of Massachusetts at Amherst.

Marianne E. Everett

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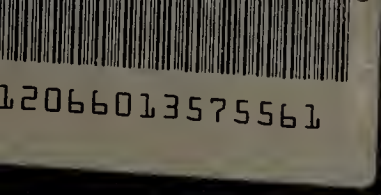
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A FOLLOW-UP STUDY OF TEACHERS TRAINED IN THE
INTERDISCIPLINARY/INTEGRATED DAY PROGRAM AT
THE UNIVERSITY OF MASSACHUSETTS AT AMHERST

A Dissertation Presented

by

MARIANNE E. EVERETT

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

May, 1989

Education

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This research project was funded in part by a grant
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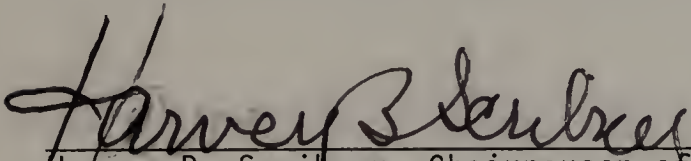
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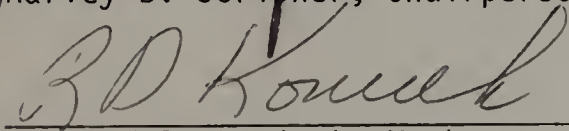
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MARIANNE E. EVERETT

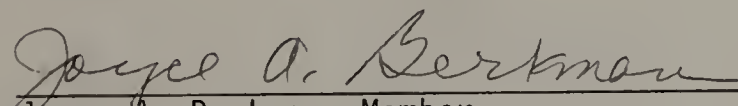
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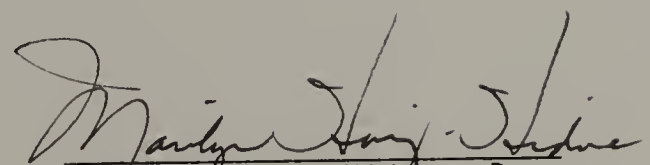
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ACKNOWLEDGMENTS

I wish to thank the following people for their invaluable help while I worked on this research project:

- Harvey B. Scribner, Chairperson of my Dissertation Committee, who supported, encouraged, and guided me every step of the way;
- Richard D. Konicek, Committee Member, who gave me insightful commentary and guidance to the project;
- Joyce A. Berkman, Committee Member, whose discerning questions and careful analysis helped me immeasurably;
- Mario D. Fantini, whose wise counsel led me to view teachers in the context of the schools in which they work and guided me in exploring the most widespread setting for non-traditional and developmental-interaction methods today, the schools of choice movement;
- Lawrence Locke and Patti Sue Dodds, for their invaluable guidance from the beginning of this study and their willingness to share their expertise and broad knowledge of current research on teacher education;
- R. Mason Bunker, Masha Rudman, and Annette Lieberman, who contributed to my early exploration and enlightenment on interdisciplinary teacher education in countless ways;
- The Interdisciplinary/Integrated Day Program--Faculty, Undergraduate and Graduate Students with whom I worked

as a staff member, graduate teaching assistant and participant-observer in the courses--for their cooperation, assistance and support during this research project;

- The ten Teacher/Graduates, who allowed me to observe in their classrooms and gave so generously of their time for interviews about their current work and their past learning experiences in the Interdisciplinary Program;
- Nancy Kaminski, whose editorial expertise contributed to the success of this endeavor;
- Family and friends, too numerous to mention, who have provided support and encouragement throughout this process;
- The Jessie Smith Noyes Foundation, whose fellowship grant partially funded this research project.

ABSTRACT

A FOLLOW-UP STUDY OF TEACHERS TRAINED IN THE
INTERDISCIPLINARY/INTEGRATED DAY PROGRAM AT
THE UNIVERSITY OF MASSACHUSETTS AT AMHERST

MAY, 1989

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Directed by: Professor Harvey B. Scribner

This dissertation has two purposes: (1) to describe an undergraduate program having new approaches to teacher preparation, and (2) to examine its relationship to the later classroom teaching of a sample of its teacher/graduates. The program trains elementary teachers in nontraditional methods--namely, developmental-interaction approaches to learning and interdisciplinary approaches to curriculum. Such methods are in demand today as schools seek to more adequately meet the needs of all types of learners (particularly in public schools of choice, or optional nontraditional schools, and certain magnet schools).

The literature review covers past research and analysis on three aspects of developmentally oriented teaching and learning: the characteristics and roles of teachers; the distinctive features of schools using developmental/interdisciplinary approaches; and recommendations by educational analysts for needed changes in teacher education programs.

A multifaceted research design is employed. Data is presented from observations, interviews, questionnaires and an observation rating scale.

Case studies give detailed descriptions of the conduct of six methods courses and the current classroom practices of a sample of ten teacher/graduates.

The conclusions indicate that this teacher education program does effectively prepare teachers to express eight specific characteristics and roles identified as typical of teachers using developmental-interaction methods. Furthermore, the majority of this sample had their own presocialization in traditional schools; they did not go out and teach the way they were taught as children after these methods courses.

The conclusion is reached that these particular methods courses made a valuable and significant impact on the later classroom practices of the teacher/graduates. They made 88 statements acknowledging this; the researcher observed 114 teacher actions and attitudes supporting this conclusion.

Six significant features of the methods courses and program are identified and described as enabling the teachers to implement the methods learned in the courses: (1) the unusual organization of the program; (2) the process of teacher learning; (3) the professor's teaching strategies; (4) the assignments given; (5) the intense sense of community and collegiality developed in the program; (6) the support of each teacher's individuality in teaching style, resulting in ownership of the methods.

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C H A P T E R 1

INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction and Subject of This Study

Recent surveys have shown that optional nontraditional schools in public school systems have increased by thousands across the United States since the early 1970s (Fleming & Blank, 1982; National Consortium for Optional Education, 1973; Raywid, 1982). The first article on optional nontraditional schools ever to appear in the Encyclopedia of Educational Research was published in its 1982 edition. There, Gregory and Smith state that the widespread establishment of these schools across the nation ". . . has become a significant movement in American education" (p. 120). These authors acknowledge that Fantini (1973c, 1986) is widely credited with the original idea for offering within public school systems something that was formerly only available in private schools-- a "schools of choice" plan which gives parents, teachers and students the opportunity to choose from a variety of traditional and nontraditional types of schools and approaches to education.

The schools of choice plan was discussed by the presidential candidates in 1988 as a viable means for improving our schools. Over the past two decades, many parents and teachers have come to see that ". . . legitimate differences in learning styles need to be accommodated by different learning environments" (Gregory & Smith, 1982, p. 123). These developments call for a knowledge of teaching and learning approaches that are different from the traditional. Yet there has been

little research on ways to prepare preservice teachers for approaches that are different from the traditional methods of teaching (Feiman-Nemser, 1983; Raywid, 1982). Indeed, there are few college or university programs in the United States that are specifically designed for this purpose (Howey, Yarger, & Joyce, 1978). There is, however, a need for teachers better versed in the more creative and interdisciplinary approaches to learning and teaching found in today's nontraditional schools. This was the conclusion of Raywid in 1984, after completing an extensive survey of 2,500 optional nontraditional schools. She states that the modern interdisciplinary and developmental approaches to teaching found in these schools today ". . . require a better prepared teacher than many of us are graduating today" (Raywid, 1984b, p. 11).

The intent of this study is to examine an undergraduate teacher education program that is designed to prepare teachers for work in classrooms that are different from the traditional approach to elementary education. The study includes a follow-up study of graduates of the program who are now teaching in elementary classrooms, to determine whether they are carrying out the approach to teaching given them in their preparation.

The subject of this study is the Interdisciplinary Teacher Education Program, the undergraduate component of the Integrated Day Program in the School of Education at the University of Massachusetts at Amherst. The Integrated Day Program was established in 1971. It has several related components in teacher education. In addition to the undergraduate program (the Interdisciplinary Program), there are three graduate programs within the Integrated Day Program. These are: a staff development

program (Ed.D. level); an inservice growth program (M.Ed. or C.A.G.S.); and a doctoral program in teacher education (Ed.D.). These programs are related in several ways. The inservice growth program is often linked with the Interdisciplinary Program in a preservice-inservice continuum. In the doctoral program, graduate students in the Integrated Day Program often serve as staff members and work in the Interdisciplinary Program as supervisors of student teachers and/or instructors and team-teachers with the professors in the undergraduate courses.

The Interdisciplinary Program is a two-semester sequence of courses leading to the certificate for teaching in elementary schools. It is a professional preparation program for preservice teachers. The methods courses will be described in detail in Chapter 4, as part of the research for this study. However, a brief statement about the Interdisciplinary Program is appropriate at this time, to indicate some of the reasons for choosing this program of study.

The Interdisciplinary Program at the University of Massachusetts is designed as a conscious departure from conventional practices in teacher education, with a rationale and philosophy deeply rooted in research (which will be cited in Chapter 4 in detail). In preparing teachers for work in classrooms that are different from the traditional, the program focuses on the "integrated day" approach to teaching. This approach integrates curriculum areas around themes, in learning projects that are relevant to the real world and the community in which the child lives (combining reading, science, math, art, and/or social studies in learning activities). This is also called an interdisciplinary approach to curriculum. The "integrated day" approach is equally concerned with the

development of the whole child, focusing on the integration of the academic, intellectual development with the emotional, aesthetic, social, and physical development of the child. Thus, an understanding of the psychology of child development is basic to the "integrated day" approach to learning and teaching. This has also been called the developmental approach to education. These two features--the developmental basis and the integrated, interdisciplinary focus on curriculum--are central to the Interdisciplinary/Integrated Day approach to learning and teaching. The name "integrated day" was first given to this type of education in England; there are many schools in the United States that have this same basic approach (different from the traditional approach to education) but are not called "integrated day".

As stated above, a detailed description of the methods courses and overall design of the Interdisciplinary/Integrated Day Program at the University of Massachusetts will be given in Chapter 4. In addition, the chapter on the "Review of the Literature" and the remainder of this chapter will reveal the roots of the Interdisciplinary/Integrated Day Program in learning theory, developmental psychology, teaching methodologies, and research on both teaching and teacher education.

Need for Study of Methods Courses in Teacher Education

There have been many calls for reform in teacher education in recent years. Indeed, teacher education is blamed for many of the problems in public schools today, from administrative shortcomings to low scores on students' standardized tests. Howey and Gardner, in their book

The Education of Teachers: A Look Ahead (1983), state: "If teacher education is not considered to be totally responsible for all those problems, it most certainly is thought of as a major contributing cause" (1983, p. 18). The National Society for the Study of Education, in its 1975 Yearbook (Ryan, 1975), reported that schools employ inservice training programs to make up for the extreme inadequacy of their pre-service preparation in teacher education programs.

For over a decade, teachers themselves have reported that their undergraduate courses in teaching methodology are irrelevant to their later work as teachers in classrooms. Lortie (1975) found that teachers regarded their preservice undergraduate methodology courses to be easy, boring, and not useful in their future teaching. Indeed, student teachers develop this attitude toward their methods courses even before they graduate. Bunker, in a study of student teachers, found that ". . . despite dissimilar preparations for teaching, student teachers viewed professional education courses in an unfavorable light" (1970, p. 149).

Very little research has been done on the teaching strategies of professors in teacher education programs. Nonetheless, the programs are being criticized. "Considerable critical attention is currently being focused upon teacher education programs. . . . Little is known, however, of the background, values, goals, responsibilities and instructional strategies of the teacher educator" (Carter et al., 1981, p. 1). Reviewers of research have pointed out that the available number of studies on the preparation of teachers is inadequate to guide us in making reforms in the practices of preservice teacher education programs

(Denemark, 1983; Feiman-Nemser, 1983; Turner, 1975). Denemark, reviewing research done in graduate schools of education, states that only one-fourth of these graduate schools are doing any significant amount of research. Even these ". . . focus on matters peripheral to the task of preparing teachers or to more effective instruction in schools" (1983, p. 37). Also, Joyce, Yarger and Howey, in an extensive nationwide survey, found that few professional teacher preparation programs have research and development capabilities, ". . . and those which do exist appear underutilized with respect to the study of teacher preparation itself" (Howey & Gardner, 1983, p. 17).

It is possible that, in order to look beneath the surface of teacher methodology courses, we need to use an approach to research that is both qualitative and quantitative. Roose points out a possible reason for the lack of meaningful research on the methods employed by teacher educators in their preservice courses. She says that this might be ". . . due to the predominant use of quantitative research methodology in the past" (1985, p. 6). She continues, "Because teaching centers on individuals (professors) with their own unique teaching beliefs and styles, qualitative research describing what actually happens in methods classes is needed" (1985, p. 6).

Feiman-Nemser states that the majority of existing research studies have not examined ". . . the actual conduct of teacher preparation" (1983, p. 4). She states that most college and university programs for teacher preparation do not match what we know today about ". . . the actual process of teacher learning" (1983, p. 30). She points out that as long ago as 1962, Sarason called learning how to teach ". . . an

'unstudied problem' and called for detailed descriptions of how teachers are actually trained." Feiman-Nemser further states, "The need still exists" (1983, p. 13).

Research on Characteristics and Roles
of Teachers Using Developmental
Approaches to Teaching

While we do not know much about the conduct of teacher education courses in preparing teachers for either traditional or modern schools, there is something we do know. We know a great deal about what happens when teachers are able to structure their classrooms using methods based on knowledge of child development and learning--methods different from the traditional. There has been extensive research since 1970 on the characteristics and roles and beliefs of teachers with an interdisciplinary, developmentally oriented approach to classroom teaching, with detailed descriptions of how such teachers function (Barth, 1970; Bussis & Chittenden, 1970; Fantini, 1973c; Giaconia & Hedges, 1982; Raywid, 1984b; Traub et al., 1972; Walberg & Thomas, 1971; Zahorik, 1980).

While there are basic commonalities in all teaching, analysts have noted that there are distinctly different skills, roles and characteristics needed and implemented by teachers in today's developmentally oriented schools with an interdisciplinary, integrated curriculum approach to learning and teaching. Also, these identified characteristics can be clearly distinguished from the characteristics of teachers in traditional classrooms (Barth, 1970; Bussis & Chittenden, 1971; Evans, 1971; Fantini, 1973c; Raywid, 1984b). Furthermore, the same

characteristics of teachers using developmental/interdisciplinary approaches have been consistently revealed in research studies done in three countries--England, the United States, and Canada (Evans, 1971; Raywid, 1982).

It is important to note that the same characteristics and roles of teachers have been found by analysts in many different types of non-traditional schools that are developmentally oriented and have interdisciplinary approaches to curriculum, from Early Childhood through the High School level. For instance, in the early 1970s, Barth (1970), Bussis and Chittenden (1970), Evans (1971), and Walberg and Thomas (1971) observed and/or described the work of teachers in early childhood and elementary classrooms in both England and the United States. These schools had an Integrated Day approach derived from the British Primary Schools and the earlier work of Dewey and his associates, Piaget in Switzerland, and others (Weber, 1972). More than a decade later, the survey and research done by Raywid (1982, 1984a, 1984b) has revealed similar behaviors, attitudes, roles and characteristics in the work of teachers in a wide variety of modern developmental and interdisciplinary approaches to middle schools and high schools in the United States and Canada, such as magnet schools and other schools of choice. It is, indeed, striking that the same characteristics and roles of teachers emerge, no matter what level or age group the learner falls in, when teachers take a developmental/interdisciplinary view of learning and teaching.

It follows that, if schools of education would seek to prepare preservice teachers for modern developmental/interdisciplinary

approaches to teaching and learning, then they should focus on fostering the expression of those particular characteristics, roles and beliefs (which have been identified as characteristic of teachers in developmental classrooms) in the conduct of their teacher preparation courses and programs. One teacher education program having this goal is the Integrated Day/Interdisciplinary Program at the University of Massachusetts at Amherst, the subject of this study.

The Purpose of This Study

The purpose of this study is to examine one university program that is designed specifically to prepare preservice teachers for approaches to elementary classroom teaching that are different from the conventional classroom. This is the Interdisciplinary Program, the undergraduate strand of the Integrated Day Program in the Division of Instructional Leadership in the School of Education at the University of Massachusetts at Amherst. The Interdisciplinary Program is a two-semester sequence: one semester of preservice professional methods courses and one semester of student internship. This sequence of courses is given the Junior and/or Senior years.

A conceptual framework for this study will be its focus on eight teacher characteristics and roles which have been identified by researchers as typical of the way teachers work in developmental/interdisciplinary schools. The eight characteristics and roles will be described in detail, and contrasted with traditional teacher roles and characteristics, in Chapter 2 of this study ("Review of the Literature").

They are: Provisioning, Instruction, Diagnosis, Evaluation, Humaneness, Ideas About Children and Learning, Seeking Professional Growth, and Self-Perception of the Teacher (Bussis & Chittenden, 1970; Walberg & Thomas, 1971).

Specific indicators for each of the eight characteristics and roles have been designated by previous researchers for use in observations of teachers, in interviews and questionnaires (Hoy & Jalovick, 1972; Walberg & Thomas, 1971). A detailed plan for the instrumentation and methodology of the present study is given in Chapter 3 on "Research Design".

This is a study of both (1) a professional program and (2) its relationship to the work of its graduates who are now teaching in elementary classrooms. Therefore, the study will have two parts. First, the researcher will examine and describe the Interdisciplinary Program, focusing on how the program functions to help preservice teachers learn and express the eight characteristics and roles listed above. Then the researcher will examine and describe the manifestation of those eight characteristics and roles in the work of the program's teacher/graduates who are currently teaching in a variety of elementary school environments. (Sampling procedures for the study are explained in Chapter 3, entitled "Research Design and Methods".)

The following questions will be addressed in this research:

1. How does the Interdisciplinary/Integrated Day Program operate to foster the development and expression of the eight characteristics and roles of teachers as identified by Bussis and Chittenden (1970) and Walberg and

Thomas (1971) and others?

- a. How is the teacher education program organized?
 - b. What happens in the methods courses?
 - c. What are the instructional strategies of the professors?
 - d. What is the process of teacher learning?
 - e. Is the teacher education program different from most conventional programs?
 - f. How is the student teaching organized? Is there provision for helping students process the experience?
 - g. What are the significant features of the program that foster change in teaching/learning approaches?
 - h. Is the Interdisciplinary Program doing the things that educational analysts say are needed changes in teacher preparation in order to create a program suitable for more developmental approaches to teaching and learning?
2. Concerning the elementary classroom teachers who graduated from the Interdisciplinary Program, how does what teachers do in performance relate to the teacher training they received?
- a. Do these teacher/graduates now manifest the eight roles and characteristics identified by Bussis and Chittenden (1970) and Walberg and Thomas (1971) and others, in the teacher/graduates'

- current classroom practices?
- b. What was the impact of the methods courses on these teacher/graduates' classroom practices? Are specific methods/beliefs which are taught in the courses evident in the teachers' performance?
 - c. Did these teacher/graduates find student teaching the most valuable thing to them, and/or were there other aspects of the methods courses and program that they designated as valuable to them?
3. Do the teacher/graduates of the Interdisciplinary Program evidence more traditional teaching practices or more developmental/interdisciplinary teaching practices in their classroom teaching?
 - a. For those teacher/graduates who themselves had a traditional school background, was change evidenced in their approach to teaching and learning after their training in the Interdisciplinary Program?
 - b. How did the teacher/graduates identify with their own early schooling and what were their motives for choosing the Interdisciplinary/Integrated Day Program for their teacher preparation?
 4. Does the type of school setting (i.e., traditional or developmental/interdisciplinary approach) in which

the teacher/graduates work make a difference in their classroom teaching practices?

Significance of the Study

A recent review of the research on nontraditional schools reveals that these schools differ from traditional schools in many aspects of schooling: the curriculum, the instruction, the relationships, the basic objectives, and the organization of the school. Raywid states that various arrangements of ". . . all of these in combination" (1984a, p. 70) are found in each optional nontraditional school; she says that ". . . schools of choice are multifaceted" (1984a, p. 70). She points out that this is not a movement that advocates one best teaching method, or even one revised curriculum, as in past efforts at school reform. Each optional nontraditional school is highly individual in nature.

How are we to prepare teachers for such a varied approach to schooling? The need for examining this question has been underscored by several educators and researchers. Raywid, stating that today's developmentally-oriented schools of choice "require a better prepared teacher than many of us are graduating now" (1984b, p. 11), emphasizes that such schools "require teachers who have been quite differently prepared" (1984b, p. 11).

Brown and Reese (1978) make several recommendations for change in teacher education programs. They advocate an interdisciplinary model for training teachers, giving two reasons for this need. First, the complex social problems in our society today call for a problem-solving

approach. Brown and Reese say that integrating the disciplines is needed for learning problem-solving, responsibility, and humane caring and compassion. The second reason given by Brown and Reese is that the teacher's role is more complex today. There is a greater emphasis on community and parent involvement, as well as career education. Teachers can better cope with these demands, according to Brown and Reese, through integrating the disciplines in their classroom teaching approaches.

Curriculum projects and learning activities that integrate the disciplines are a chief characteristic of nontraditional schools on all levels (Fantini, 1973c; Raywid, 1984b; Walberg & Thomas, 1971). Yet Brown and Reese state that "little interdisciplinary curriculum development has been implemented in the field of teacher education" (1978, p. 182).

The subject of this study, the Interdisciplinary Program at the School of Education at the University of Massachusetts at Amherst, does have methods courses that prepare teachers for integrating the curriculum areas. Therefore, a study of the content and conduct of its methods courses, with a follow-up study of its teacher/graduates, could give a helpful and significant example for improving teacher education today.

Other researchers also have pointed out the need for the study of methods for the preparation of teachers for developmental approaches to teaching. As a result of their national survey of Preservice Education done in 1976, Howey, Joyce and Yarger found a great need in the nation for teachers prepared "to work in a variety of learning contexts," such as "multiple-service schools serving all populations" (1978, p. 62). These researchers recommend that research is needed to determine the

type of courses, programs, and role models that could prepare teachers for diversified approaches to instruction. They strongly emphasize this need: "The data suggests that research efforts in teacher preparation are sparse. Research is badly needed which looks into both the what and the how of training" (Howey, Joyce, & Yarger, 1978, p. 62).

Also, there are very few studies that have yielded any information as to the specific relationship between teachers' work in classrooms and the specific ways that they learned to teach in college. Recently, two national surveys by Adams and Craig (1981) and Pegues (1978) of colleges of education revealed that only 26% had made any attempt to gather information from graduates four to six years after they had graduated. Adams and others state that only five studies were found that used exclusively as subjects those graduates who were currently teaching in schools. Furthermore, only four studies were found that used multiple data sources and multiple research techniques for collecting data (Adams, Craig, Hord, & Hall, 1981). Clearly, the long-range study of the relationship between teachers' actual practices and behaviors in classrooms and their prior preparation for teaching is an area that has been neglected. It deserves a high priority in our list of needs for educational research and reform.

Defining Terms

This study is concerned with the Integrated Day/Interdisciplinary Program at the University of Massachusetts, which prepares teachers for approaches to teaching and learning that are different from the

traditional. Therefore, it is necessary to define the chief terms relating to both the traditional approach and nontraditional approaches to teaching.

Introduction

Kohlberg and Mayer (1972) point out that we find in schools today three basic approaches to teaching and learning, all of which have developed over time in Western educational ideology. Each is derived from different views of how people learn and of what knowledge is. Therefore, in order to adequately define the terms used for them, we must briefly consider their different historical and psychological derivations, their theories of knowledge, and the resulting teaching methods based on them.

The three basic approaches to learning, with three related views of teaching, identified by Kohlberg and Mayer (1972) in today's schools are: (1) The traditional view of learning as the cultural transmission of knowledge; (2) the romantic view of learning and the child (sometimes called an alternative approach today); and (3) the developmental-cognitive view of learning, based on modern psychological findings regarding normal child development and learning theory. We will briefly discuss these three approaches to teaching, in order to define the terms or names given them.

Defining the term "traditional". In the traditional school, the important thing is the cultural transmission of knowledge. In the classical tradition, knowledge is divided into separate subjects; facts are poured into the student from the outside. The teacher's role is

imparter of knowledge. This traditional view of knowledge and teaching, as found in today's conventional schools, has resulted in certain teaching methodologies. Basic skills and facts are emphasized but not applied to life situations (Kohlberg & Mayer, 1972). The curriculum subjects (Reading, Mathematics, Science, etc.) are taught in unrelated sequence in a rigid time schedule of 30 to 50 minute periods each day. There may be a whole class or large group instruction, in which children are divided into low, medium, or high achievers. Textbooks are considered more important than primary sources or firsthand experience. The learning materials are mostly books, paper, and pencil. Evaluation is done by standardized tests.

The chief emphasis in traditional schools and classrooms is on academic and intellectual achievement, with prescribed studies and little or no choice, originality, or creativity by the students. The students are frequently passive; the teacher is active. The teacher makes all the decisions; the students make none. When "programmed instruction" is used, the textbooks make the decisions for both the teacher and students (Barth, 1970; Bussis & Chittenden, 1970). The students are expected to sit still and be quiet for long periods, while they do the prescribed assignments.

Defining the terms "alternative", "romantic", and "developmental".

Next, we will define the term "alternative" as it applies to teaching methodologies which are different from the traditional methods described above. There are schools today which exemplify Kohlberg and Mayer's (1972) two other categories: the Romantic and the Developmental-Cognitive learning theories.

1. Defining the Romantic approach to alternative schooling. The Romantic view of learning and schooling derives from Rousseau's (1773/1963) writing about childhood and later from such observers of child development as Hall (1901) and Gesell (1943, 1946). The child's learning and growth is seen to come from innate neurological patterns, unfolding naturally like a plant or animal. These are prepatterned stages of development, coming from within the child. Therefore, the environment should nurture the child and let him or her grow. The role of the teacher is to leave the child alone--give him or her a good environment and stand back (Kohlberg & Mayer, 1972).

This learning theory results in a laissez faire school in which the students make all the decisions; the teacher makes none. The children are active; the teacher is passive (Bussis & Chittenden, 1970). This theory of learning, translated into schooling, results in schools such as Summerhill (Neill, 1960). In a survey of alternative schools in 1973, the National Consortium for Options in Education found only 5% of the existing alternative public schools to be the laissez faire type. However, a decade later in 1982, Raywid's survey found little evidence of the laissez faire approach in optional alternative public schools. Perhaps 1% of all nontraditional schools in the United States today are laissez faire, or the romantic approach to learning and teaching, according to the National Coalition of Alternative Community Schools (Foster, 1987). However, to many Americans, the term "alternative" means laissez faire.

2. Defining the Developmental approach to learning and teaching.

In the light of the above information, at least 95% of the nontraditional approaches to teaching found in today's schools are the third type described by Kohlberg and Mayer (1972) as the Developmental-Cognitive approach to learning and teaching. This is the approach found in the Integrated Day/Interdisciplinary Teacher Education Program at the University of Massachusetts at Amherst, the subject of the present study.

This view of the learner is also based on the psychology of child development, but a quite different interpretation is given by such investigators as Dewey (1938/1956) and Piaget (1960). The child is seen as a scientist, philosopher, and poet; and learning comes as the child interacts with the environment. The stages of cognitive growth and learning are changes in the child's patterns of thinking, of perceiving him/herself and the world. The child's social, emotional, physical and cognitive stages of development are interrelated. The learner goes through progressive stages of thinking and experience, redefining and reorganizing his or her understanding of the world around him or her. Experience, learning by doing, is basic to the interaction between the child and the environment; and this activity produces the development of basic mental structures. Thinking and feelings are closely related (Kohlberg & Mayer, 1972; Shapiro & Biber, 1972; Spodek, 1972).

This developmental-cognitive view of how people learn, with experiential, humane approaches to teaching methodology, has been applied in classrooms in different parts of the world since the seventeenth century,

as Kohlberg and Mayer (1972) pointed out. The British call it the Integrated Day approach to teaching and learning. The researchers and teachers at the Bank Street College of Education, in New York City, call it the Developmental-Interaction approach; they have widely influenced the teaching methodology that is different from the traditional across the United States in the last 50 years (Evans, 1975).

Shapiro and Biber of Bank Street College define the term Developmental-Interaction as follows:

Developmental refers to the emphasis on identifiable patterns of growth and modes of perceiving and responding which are characterized by . . . progressive integration as a function of chronological age. Interaction refers, first, to the emphasis on the child's interaction with the environment--adults, other children, and the material world--and second, to the interaction between cognitive and affective spheres of development. The developmental-interaction formulation stresses the nature of the environment as much as it does the patterns of the responding child. (Shapiro & Biber, 1972, pp. 59-60)

In the present study, the researcher will usually call it the developmentally-oriented approach. At times, the researcher also calls it the developmental-interaction or the developmental/interdisciplinary approach because this developmental view of learning and teaching is the basis of the subject of this study, the Interdisciplinary Program at the University of Massachusetts at Amherst. Where appropriate, the researcher also calls this approach nontraditional.

How can we more specifically describe and define the modern methods of teaching that occur in classrooms and schools where the developmental-interaction view of learning is understood? In order for the student to interact with the environment of ideas, people and things, the curriculum is organized by the teacher into several interdisciplinary units or

projects. These learning activities are pursued by small groups of children working together. The activities are problem-solving situations for which the students are provided a great variety of hands-on materials so that they can learn by doing. This experiential learning is considered as important as book learning. Developmental teaching methods are planned for the student as an active learner. His or her talents, creativity, originality and individuality are fostered.

The developmental classroom is a workshop classroom, often divided into many workshop areas or learning centers, where the materials for mathematics, or science, or art, etc., are always close at hand on open shelves so that students can move about and find what they need. The time schedule of the developmental classroom provides for planning meetings, individual conferences with the teacher, and large blocks of time for students to pursue their individual and small group learning projects. The curriculum subjects are integrated in interdisciplinary projects so that the student encounters the academic disciplines the way they are found in the real world. The active inquiry and discovery methods of teaching and learning give the individual student an opportunity to organize his or her knowledge and to find personal meaning in his or her work at school (Barth, 1970; Kohlberg & Mayer, 1972; Walberg & Thomas, 1971).

In this modern approach to teaching, based on child development psychology and learning theory, the curriculum projects and activities are designed by both teachers and students. There are frequent class meetings where a process of shared decision-making takes place. Spodek (1975) calls this a new kind of decision-making in education. Choice

for students is seen as highly important, but within a framework or overall plan provided by the teacher. Both the teacher and the students are active; no one is passive in this classroom (Bussis & Chittenden, 1970; Raywid, 1982; Walberg & Thomas, 1971).

In the developmental-interdisciplinary approach to teaching methodology, the basic skills are taught to individuals and small groups (direct teaching) and then are put to use in activities and projects (indirect teaching). This makes students' learning relevant to the real world. The teacher's role is facilitator, guide, planner, organizer, supporter, diagnostician, and evaluator. The teacher is an authority without being authoritarian (Barth, 1972). The students on all levels of schooling--early childhood, elementary, middle and high school--are taught individually and in small groups. Such teaching methods as cooperative learning in small groups and peer teaching have been shown to improve students' achievement scores in research studies (Johnson, Skon, & Johnson, 1980; Raywid, 1984b).

Indeed, research studies have been done for 60 years comparing the achievement and learning of students in traditional classrooms to those in classrooms employing modern, developmental/interdisciplinary methods of teaching and learning. Positive gains for students, in both academic subjects and personal growth, have been recorded again and again for students in classrooms with developmental approaches to teaching. These positive gains have been noted in research on all levels, elementary through high school, and in both England and the United States (Everett, 1984; Gregory & Smith, 1981; Raywid, 1984a).

3. Defining the word "alternative". The term "alternative" is often used to designate any classroom or school that departs from the traditional classroom approach to teaching, as defined above. The use of the word "alternative", however, creates problems. It can mean either the romantic, laissez faire approach to schooling, or the developmental-interaction and interdisciplinary approach, which are quite different from each other (as defined above). Also, there is a further connotation of the word "alternative" in some parts of the United States; for many people, "alternative" means schools for problem children. Raywid (1982) says that we probably should stop using the word "alternative" for schools, because of the many negative connotations of the word in education circles today. In the present study, if the word "alternative" is used, it refers to the type of school comprising 95% of the non-traditional schools--that is, the developmental-interaction type of school and setting. This is the type referred to as optional alternative schools--another term for schools of choice. In the present study, where researchers have referred to optional alternative schools, the researcher uses the term optional nontraditional schools.

4. Defining the terms "interdisciplinary", "integrated day", and "thematic approach". These terms refer to a teaching approach that organizes subject matter around unifying themes. This is an integrated curriculum approach, in which there are many projects and learning activities that combine several disciplines. For instances, if a class were studying rivers, they might take a field trip to a nearby river; collect specimens of plants and water; set up an aquarium; look at the water under microscopes; read about the plants, animals, ecology of

rivers; write reports or stories on their findings. This might lead to a study of transportation, map study, water supplies for cities, the importance of rivers in the settling of this country and in the history of other countries. They might take a field trip to investigate the water system of their own town. They might paint a mural of a river, showing its uses and ecology. They might make wood cuts and prints of the varied designs on the backs of the water bugs they found. They might illustrate their own books that they write about rivers.

Under this theme "rivers", the interdisciplinary curriculum design integrated the subjects or disciplines of reading and language arts, writing, science, social studies, art. Mathematics might be integrated in the drawing of maps. The practical application of every discipline can be applied in experiential learning activities. When much of the school day is organized in large blocks of time that allow for active learning from interdisciplinary projects, this is called the "integrated day". This term also refers to the approach to curriculum and class organization employed by teachers.

Delimitations of the Study

For the study of the teacher preparation for developmental/interaction approaches to elementary education, this research is limited to the two-semester sequence called "The Interdisciplinary Program", the undergraduate component of the Integrated Day Program in the School of Education at the University of Massachusetts at Amherst. The study is not concerned with the content or conduct of any prerequisite courses

for this program. Observations, interviews and feedback techniques were used with the professors who have customarily taught the courses and have been with the program since its beginning years. No teaching Assistants or graduate students who teach or team-teach in the courses were interviewed. The courses to be examined are principles and methods courses for teaching in the elementary school in the following areas: Reading and Language Arts, Mathematics, Science, Curriculum, and Multi-Arts and Social Studies. This study focuses mainly on the methods courses, although the plan for the Prepracticum and Student Teaching is described briefly.

For the study of the teacher/graduates, only those currently teaching were considered for the sample. Elementary classroom teaching only is examined. No graduates teaching Nursery School, Kindergarten, Middle School courses, or Special Education classes, or in school administration positions, were included in the sample. Early Childhood Education, which has long been developmental in its approach, is not the concern of this study; using developmental approaches in elementary school is the concern.

Design of the Study

Chapter 1 presents an introduction to the study. It gives background information on the need for research on methods courses in teacher preparation. Also, it reports on the availability of research on the characteristics and roles of teachers who use approaches to teaching that are different from the traditional. The purpose and significance

of the study are discussed. The major terms used throughout the study are defined.

Chapter 2 contains a review of the literature and recent research relevant to this study. There is a discussion of the characteristics and roles of teachers using developmental-interaction methods classrooms. There is a discussion of several analysts' comments on the particular needs in the professional preparation of teachers for work in non-traditional schools with developmental-interaction approaches to teaching and learning, as found in the many types of schools of choice that are increasingly available today.

Chapter 3 outlines the procedures for investigating the Interdisciplinary Program at the School of Education at the University of Massachusetts at Amherst and the work of its teacher/graduates as teachers in elementary schools. It gives details regarding the instruments and methodology to be used, including the rationale for their selection, and other information.

Chapter 4 presents the data collected on the Interdisciplinary Program and its teacher/graduates.

Chapter 5 gives the researcher's conclusions and the implications of the study, which are specific to the Interdisciplinary Program and generalized to the field of teacher education for schools of choice and developmental-interaction (interdisciplinary) approaches to teaching and learning.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

Nontraditional, developmentally oriented schools are distinctly different environments from traditional schools (Fissell, 1975; Gluckstern, 1978; Raywid, 1984a, 1984b). There is a climate that is different in nontraditional schools, and "they elicit quite different responses from the human beings within them" (Raywid, 1984b, p. 73). Because of the high achievement of all types of students in optional nontraditional schools in public school systems having a Schools of Choice plan in recent years, there has been a great deal of interest in finding out what makes nontraditional schools successful. Since Fantini's book, Public Schools of Choice, was first published in 1973, there has been a great deal of research on optional nontraditional schools in public school systems. This body of research shows that certain distinctive features have been consistently manifested in successful nontraditional schools (Gregory & Smith, 1982; Raywid, 1982, 1984a). These research studies have yielded findings similar to the research done in the early 1970s on nontraditional schools having the developmental-interaction approach in England and the United States (Bussis & Chittenden, 1970; Walberg & Thomas, 1971).

In this chapter, we will first review these distinctive features of nontraditional, developmentally oriented schools. This is important to the present study because teachers work in the context of schools (which

could have a more traditional or a more developmental approach, as the terms are defined in Chapter 1). We will then review the research on the particular characteristics, roles, and beliefs of teachers in non-traditional, developmentally oriented classrooms and schools. Next, we will consider the implications of this information for needed changes in teacher education programs. We will relate these implications to recent research on how teachers learn.

Distinctive Features of Developmentally Oriented Schools

Research on nontraditional schools (which are developmentally oriented, as defined in Chapter 1) has revealed many features that are distinctly different from traditional schools. First, the importance of choice is said to be central to the success of optional nontraditional schools in public school systems (deCharms, 1977; Fantini, 1973b, 1973c; Grant, 1981; Gregory & Smith, 1982; Raywid, 1982, 1984a). Choice not only applies to the initial entrance into school by students, parents and teachers, but choice is continually built into the daily program in all developmentally oriented schools. The effects of being given choice are many. One finds, in optional nontraditional schools, a sense of personal investment and commitment (Erikson, 1982; Nault, 1975-76); a cohesive group of people with an affiliation akin to membership or ownership (Raywid, 1984a, 1984b); and a likemindedness about values and educational approaches (Erikson, 1982; Grant, 1981; Rutter, 1979; Schneider, 1982-83). Freedom of choice has become a widely accepted criterion of optional nontraditional schools (Gregory & Smith,

1982), and has had far-reaching effects in the operation of such schools. Students who choose to come can also choose to leave. "This right alone tends to make for a community of civility and respectful interaction" (Raywid, 1984a, p. 74). Choice by students and teachers in the daily program has been identified as a major feature of developmentally oriented Integrated Day schools in both England and America by Walberg and Thomas (1971), Bussis and Chittenden (1970), and Barth (1972).

The second important feature of optional nontraditional schools in public school systems, as identified by researchers, is smallness in size. Most of the schools have under 200 students (Gregory & Smith, 1982). Raywid's recent survey (1982) of middle and high schools found that more than half of these nontraditional schools enroll fewer than 100 students, with some having 50 or less. While a few urban optional nontraditional high schools have 500 students, in urban areas the majority (62%) have enrollments of 200 or less.

The significance of smallness in optional nontraditional schools has been indicated by analysis. Students and teachers come to know each other on a more individual, personal basis. There are fewer bureaucratic controls and rules. Both students and teachers take more responsibility for the school's operation, having extended roles. Teachers do more counseling, maintenance chores, and teaching where their talents lie. Students often do peer teaching (24% of the nontraditional secondary schools reported this as an important feature on a recent survey). Students also help with maintenance. Also, students and teachers share in the decision-making about both learning activities and the daily life

of the school (Raywid, 1982, 1984b; Bussis & Chittenden, 1970; Walberg & Thomas, 1971).

The third significant feature is the kind of relationships found in developmentally oriented, optional nontraditional schools. Swidler (1976) says that these schools are like a family, with teachers substituting affection for authority. They give attention to the whole child's learning and development, not just his or her performance of specific academic tasks. Bussis and Chittenden (1970) described the relationships of teachers and students in British Integrated Day schools and American open schools (based on the British approach) as Humaneness, defined as respect, honesty, warmth.

In a recent survey of middle and secondary optional nontraditional schools in the United States and Canada, 63% of the respondents said that teacher-student interaction is the thing that most distinguishes their schools from traditional schools (Raywid, 1982). This survey detailed the students' view of the relationships in their developmentally oriented school. They experience a warm, welcoming environment with a genuine sense of community. The students see their teachers as friends and collaborators (not as superiors or adversaries, as in traditional schools).

Indeed, students' attitudes toward school, teachers and learning have changed for the better in optional nontraditional schools (Barr, Colston, & Parrett, 1977; Doob, 1977; Duke and Muzio, 1978). Students report that they like the positive emphasis on human relationships in their optional nontraditional schools. They receive help in learning interaction skills and in the understanding of themselves and others.

Students report an attitude of inclusion and community that makes for less exclusion and fewer cliques. Clearly, the teachers and students in nontraditional schools understand and value the school as a social system (Raywid, 1982, 1984b).

A fourth distinctive feature of optional nontraditional schools is the autonomy of the teacher. Optional nontraditional schools in public school systems have been given a freedom from local, state, and federal regulations and restrictions, so that each school can design its own teaching/learning approach to meet the needs of its particular student population (Raywid, 1984b). Consequently, these schools evidence less bureaucracy and more individual teacher autonomy (Nirenberg, 1977). Indeed, individual teachers are often encouraged to develop their own classroom program according to their perception of the needs and interests of their students (Barth, 1972; Walberg & Thomas, 1971; Raywid, 1974b).

This autonomy effects teachers' attitudes in significant ways. Compared to teachers in traditional schools, those in optional nontraditional schools see themselves as more professional, as making important decisions and having more control over what happens in their schools, and as being more effective in changing the achievement of students (deCharms, 1977; Gladstone & Levin, 1982; Raywid, 1982, 1984a). Teacher satisfaction in optional nontraditional schools has been linked directly to both autonomy and collegiality (Gladstone & Levin, 1982; Nirenberg, 1977; Wehlage, 1982). Goodlad (1982) states that lasting educational reform must come from the teachers themselves, not from outside curriculum mandates imposed on them. Raywid's recent survey

(1982) shows that teachers in optional nontraditional schools occupy a central position in school improvement.

A fifth feature frequently mentioned as distinctive in optional nontraditional schools is collegiality. There is a great deal of teacher interaction and collaboration in these schools. Studies have reported more mutual help and exchange of professional information than in traditional schools. The collegiality takes place in settings that are both formal (meetings) and informal (halls and teachers' rooms). Administrators in optional nontraditional schools foster this collegiality, saying that they themselves get into classrooms often and experience less hierarchy and more collegiality among staff than in traditional schools. Raywid describes the collegiality as ". . . like a group of friends who chose to join together in a common enterprise" (Raywid, 1982, p. 23).

A sixth distinctive feature of optional nontraditional schools is the way teachers view students. They are interested in each student's development as a whole person. Therefore, the teachers are equally as concerned with their students' healthy emotional, social, and physical growth as with their cognitive and academic achievement. (The latter is usually the sole concern of traditional schools.) Teachers in these developmentally oriented schools care about the kind of person the student is becoming--his or her values, attitudes, character, relationships and self-concept, as well as his or her intellectual accomplishments (Raywid, 1984b). Barth (1972) and Bussis and Chittenden (1970) pointed out that teachers in Integrated Day types of classrooms have these same concerns relating to children and the process of learning.

The wholistic, developmental approach to children's learning has long been a characteristic of Early Childhood Education schools. However, teachers in nontraditional high schools and elementary schools also have a strong developmental approach (Raywid, 1984a). This means that their teaching practices are in harmony with what is appropriate to the students' various stages of growth, needs, and individuality as revealed by the psychology of human development. The teacher tends to study each student as an individual and, like the family, the teachers does not give up on difficult students (Raywid, 1982).

The seventh feature that distinguishes these developmentally oriented, optional nontraditional schools is the responsiveness of teachers to individual students and the success this fosters, including both personal and academic success. These teachers observe and study individual students' strengths and needs, talents and interests. Then the teachers plan learning activities accordingly. The teachers in these developmentally oriented schools are unusually successful in meeting individual students' needs, according to research studies (Gregory & Smith, 1982; Raywid, 1984a). Research has also shown improved student behavior in optional nontraditional schools, with a relative absence of disciplinary problems. This is surprising to many analysts, since the students had sometimes been discipline problems in the traditional schools from which they came (Berger, 1974; Duke and Perry, 1978; Raywid, 1984b; Wehlage, 1982). Also, students' attendance records have improved when they have transferred to optional nontraditional schools (Foley & McConnaughy, 1982; Wehlage, 1982). Both students and parents are happier with the schools of their choice, and going to school has become

a successful, positive and valued experience for many (Raywid, 1984a).

An eighth outstanding feature of optional nontraditional schools is the type of instructional methods, which are distinctly different from traditional schools (Baker, 1976; Raywid, 1982, 1984b; Zahorik, 1980). Nontraditional, developmentally oriented schools emphasize particular kinds of instruction: independent study, cooperative learning, and experiential learning. The latter may mean the students' sharing in the planning and participating in curriculum projects, field trips, and active learning, at the elementary level. In high school, activity learning is supplemented by internships, community service projects, and extended field trips [such as camping or travel] (Fleming & Blank, 1982; Raywid, 1984b; Smith, Barr, & Burke, 1976). There is frequent use of the community as a source of curriculum. Learning from the real world has been described by such terms as action-learning, walkabouts, experience or community-based learning (Smith, Barr, & Burke, 1976).

An important part of experiential learning at all levels, and in all types of developmentally oriented schools, is the decision-making process. Teachers and students share in making important decisions every day. Indeed, teachers often plan the program so as to foster choice and decision-making on the part of students (Bussis & Chittenden, 1970; Raywid, 1984a; Spodek, 1975; Walberg & Thomas, 1971).

Another kind of instruction often found in nontraditional, developmentally oriented schools is independent study, which may take many forms. This may be the pursuit of individual interests, or an opportunity to do more advanced work. There may be contracts for specific

study or remedial work. These two kinds of instruction--independent study and experiential learning--are found in developmentally oriented schools from kindergarten and elementary school through high school. These types of instruction are found in diversified magnet schools, in career-oriented schools, and in academically oriented schools emphasizing a college preparatory curriculum, as well as in nontraditional programs for gifted students (Raywid, 1982, 1984b).

Several studies have found that experiential learning (in optional nontraditional schools) has been an advantage to students, yielding higher scores in their school work (Agnew, 1982), improved student self-esteem, and increases in students' sense of moral, social, and personal responsibility (Conrad & Hedin, 1982; Hedin, 1983). The need for more experiential learning in all schools today has been emphasized by Coleman (1972) and Goodlad (1982).

The ninth distinctive feature of optional nontraditional schools is their approach to curriculum. Their curriculum content may be similar to traditional schools, but the emphasis in developmentally oriented schools is on activity methods and student interaction. Their teachers have the autonomy to design their own curriculum according to the needs and interests of the students (Nirenberg, 1977). There is much use of an interdisciplinary approach to curriculum by teachers in developmentally oriented schools, organizing learning around themes which integrate several subjects (Barth, 1972; Gregory & Smith, 1982; Raywid, 1984a; Walberg & Thomas, 1971).

Many optional nontraditional schools offer curriculum specialties. At the elementary level, emphasis may be on particular styles of

teaching and learning, such as "Integrated Day" schools with learning centers in classrooms and integrated curriculum, or Montessori methods and teaching materials, or interests in science and mathematics. Some high schools emphasize curriculum specialties such as maritime studies, or an art and music emphasis, or languages and international studies, or mathematics and computers. Sometimes these schools are called "Magnet" schools. These schools appear to be targeted for particular talents or ability levels, as well as a racial balance (Dunn & Dunn, 1978; Gregory & Smith, 1982; Raywid, 1984a). In a survey of optional non-traditional secondary schools, 83% of the schools for the gifted and talented reported curriculum specialties, while 71% of the schools for low achievers had curriculum specialties. Of all the responding schools (1,200 in number), 68% had a career/vocational specialty and 33% had a college preparatory specialty. This survey showed that, of all the responding schools, about half had curriculum specialties, while half had a general curriculum content similar to conventional schools. However, of all the responding schools, with or without specialties, 79% stressed the basic skills of reading, writing, and computation. But many had a broad definition of skills, adding as equally important the human relations skills, vocational/career skills, learning skills and problem-solving skills (Raywid, 1982). The curricular and educational goals of nontraditional schools are broad. Many curriculum and program designs are originated locally and are markedly different from those of other schools in the same area (Deal, 1975; Parrett, 1981; Raywid, 1984a; Smith, Barr, & Burke, 1976).

The tenth distinctive feature of optional nontraditional schools is that many have produced higher academic achievement levels in students of all types. This is revealed in research focused on students who were formerly considered resistant, at risk, or marginal (Arnové & Stout, 1978; Foley & McConaughy, 1982). Several other research studies have also found gains in academic achievement by average and above average students attending optional nontraditional schools (Barr, Colston, & Parrett, 1977; Doob, 1977; Duke & Muzio, 1978).

The eleventh feature that distinguishes optional nontraditional schools, often mentioned by analysts, is school climate. Walberg defines climate as morale, made up of "the cohesiveness, satisfaction, goal direction, and related social-psychological properties . . . of the classroom group perceived by students" (Walberg, 1984c, p. 24). Walberg says that climate or morale has a strong effect on both the behavior and the learning of students, but this is largely ignored in current recommendations for school reform, and in theories of instruction. In optional nontraditional schools, the teachers, parents and students are articulate about school climate, often discussing school spirit and trying to define together why they are there and what they are trying to accomplish. There is a deep commitment to the success of all students (Raywid, 1984b). One study found 19 differences between developmentally oriented schools and traditional schools--7 climate or environmental features and 12 personality features (Gluckstern, 1978). Another analyst found that the climate, attitudes, values, and learning activities of optional nontraditional schools are so different from those in traditional schools that, he concluded, if a student's behavior

is a success in one environment, he will be a failure in the other (Fizzell, 1978). Many analysts have related the distinctive climate or school environment of optional nontraditional schools to the satisfaction and achievement experienced by the students (Raywid, 1982).

And finally, an important question: What do the students themselves say? A twelfth distinguishing feature of nontraditional schools is the way the students view their schools and themselves. Several studies have shown that the students' attitudes towards school have changed for the better after they attend optional nontraditional schools (Barr, Colston, & Parrett, 1977; Doob, 1977; Duke & Muzio, 1978). In a survey published in 1982, students from 1,200 optional nontraditional secondary schools reported that the content of their academic studies is more interesting, relevant and valuable than that in their former traditional schools. Students in nontraditional schools say that they like having a variety of ways to achieve the required knowledge, with many different learning activities. They like both the opportunity for experiential learning and the interaction with their peers. They like the positive emphasis on good human relationships found in nontraditional, developmentally oriented schools. This survey also revealed more consistent success in academics for many students than they had experienced in their previous traditional schools (Raywid, 1982). Coleman (1966) pointed out twenty years ago that autonomy and choice for students has been associated with academic achievement.

Perhaps most significant of all is the way students in optional nontraditional schools perceive themselves. They evidence an improved self-concept and more self esteem in these developmentally oriented

schools (Arnove & Strout, 1977; Reddy, Langmeyer, & Asch, 1978; Strathe & Hash, 1979). An important study by Smith, Gregory, and Pugh (1981) compared students in traditional and nontraditional schools by rating them on the needs hierarchy designed by Maslow (1954). Students in nontraditional schools were superior in their sense of accomplishment, self esteem, belonging, personal growth and self actualization. This study shows that teachers in developmentally oriented schools believe they have more success with students in these needs areas than did teachers in traditional schools. Also, there was no significant difference in the traditional and nontraditional schools' students' scores for the Maslow needs of order, safety, security, and control. Another research study by Trickett (1978) showed that developmentally oriented, nontraditional schools have a higher level of order and organization than traditional schools.

Students in optional nontraditional secondary schools responding to the 1982 survey stated that they have more control over their own lives in these schools. They like being able to make both personal decisions about their studies and group decisions that shape school policy. Being given choice in their learning activities gives them a sense of personal strength and value as individuals. They feel that they have power to shape what happens to themselves and others. Analysts of optional nontraditional schools say that the high achievement levels, so widely evident in these schools today, come from a combination of choice, shared decision making, a sense of personal importance in contributing, and repeated success (Raywid, 1982).

In summary, we might ask why optional developmentally oriented schools today are experiencing such positive effects for so many students from diverse backgrounds, as reported in the review of the research given above. Raywid (1982) attributes the success of optional nontraditional schools, or schools of choice, not so much to a change in curriculum or physical surroundings as to a comprehensive change in the nature of the school experience.

Characteristics of Teachers in Developmentally Oriented Schools

Since the late 1960s, educators and researchers in the United States have sought to define the particular characteristics, beliefs, and roles of teachers in schools that are different from the traditional school. Fortunately, we now have several research studies that help us to understand what Rathbone calls "the complex, difficult role of the teacher" (1970, p. ix) in developmental classrooms. Some analysts' descriptions of teachers' traits overlap with those of classroom settings (Fantini, 1973c; Giaconia & Hedges, 1982; Traub et al., 1972). Other analysts focus more directly on the teachers' characteristics, beliefs, and roles (Barth, 1969, 1971, 1972; Bussis & Chittenden, 1970; Raywid, 1984b; Walberg & Thomas, 1971; Zahorik, 1980). Since the teacher creates the classroom environment, both approaches are relevant to this examination of the teachers' characteristics in developmentally oriented schools.

Very few analysts have described and contrasted both traditional teaching practices and developmentally oriented teachers' practices and

characteristics. Yet hundreds of research studies have compared the outcomes of students' achievement in traditional and developmentally oriented schools, on both the elementary and secondary levels (Giaconia & Hedges, 1982; Gregory & Smith, 1981; Raywid, 1984a). Both researchers and educators appear to assume that everyone knows what traditional schools are like.

However, if we are to appreciate the significance of the distinctive features of developmental-interaction schools and the characteristics of teachers who "set the stage" for active learning in these schools, we need to be clear about what constitutes both traditional and developmentally oriented approaches to teaching. Fantini (1973c) gives a concise description of teaching practices in both types of schools. Indeed, he points out that traditional schools are one of the choices offered in a system of public schools of choice, along with many alternatives. Many parents prefer traditional schools, and students do well in them who are proficient in verbal and mathematical-logical abilities. Students whose talents lie in the five other kinds of intelligence described by Gardner (1983) would probably do better in developmentally oriented approaches to schooling.

Different learning and teaching styles call for different practices in the classroom. Fantini characterizes teaching styles as more inductive or more deductive. He states that "Both approaches are valid. No teaching is all inductive or deductive" (1973c, p. 59). Table 1 illustrates these two approaches.

In the deductive approach, the teacher believes there is a known body of knowledge. This is the traditional teacher's approach. He or

TABLE 1
DEDUCTIVE-INDUCTIVE CONTINUUM

DEDUCTIVE	INDUCTIVE
Formal environment and human interaction	Informal environment and human interaction
Activity time scheduled by teacher	Activity duration is child controlled
Teacher structures curriculum	Teacher structures process
Teacher provides the sources of learning	Teacher provides guidance; facilitates learning
Furniture type and arrangement follow a standard pattern	Furniture type and arrangement based on child's patterns
Whole class oriented activity predominates	Individual and small group activity predominates
Teacher dominant, child subordinate	Teacher-pupil interaction individualistic
Curriculum is planned to cover teacher's lesson plan	Curriculum planned to meet children's interest
Dominance of textbook	Emphasis on manipulatives
Teacher controls, is disciplinarian	Teacher non-authoritarian, acts as facilitator
Dichotomized work and play	No difference between work and play
Learning by being taught	Learning by discovery
Grouping for a single age	Grouping for several ages
Teacher decides who does what and when	Teacher and children determine pattern for day
Child's education is teacher's responsibility	Child's education is child's responsibility
Emphasis on intellectual development only	Emphasis on affective emotional as well as cognitive intellectual skills
Evaluation as diagnosis	Evaluation as classification

Note: From Public Schools of Choice (pp. 70-71) by M. D. Fantini, 1973c. New York: Simon & Schuster. Reprinted by permission.

she prescribes a systematic way of covering the knowledge in each subject. Facts are presented as truth, then applied to other information or problems. Many students feel comfortable with this approach to learning. They like a teacher who is more directive, with a clearly systematic approach to subject matter. The teacher's role in this type of traditional classroom is transmitter of knowledge (Barth, 1972; 1980; Fantini, 1973c).

Inductive teaching styles (or developmentally oriented approaches) start with a different set of attitudes about knowledge and how children learn (Barth, 1969, 1971; Bussis & Chittenden, 1970; Fantini, 1973c; Raywid, 1984b; Walberg & Thomas, 1971). The inductive teachers sets up a classroom structure with many learning materials that invite inquiry from children. The teacher poses problems to be solved and materials to explore in hands-on activities. The students seek solutions and gain insights through their own inquiry. The inductive or developmental-interaction method of teaching/learning is a process. The learner finds the facts through this inquiry process. The teacher's role is provider, enabler, facilitator, guide. Questioning techniques are important. Academic skills are put to practical use in a variety of interdisciplinary projects. Facts and basic skills are important in this active learning process (Fantini, 1973c).

It is helpful to think of the inductive and deductive teaching styles as a continuum, with individual teachers' styles falling somewhere between the two extremes. Table 1 illustrates the extremes of each style and implies a continuum when implemented in classrooms. A

good many teachers in the United States use some of each methodology (Fantini, 1973c; Zahorik, 1980).

There are several significant studies that illuminate the teacher's role and characteristics in the research and literature on open education. This is a name given to developmentally oriented style of teaching and classroom structure in the United States in the 1970s; it is based on the British Primary model often called "Integrated Day" (Brown & Precious, 1968). Indeed, there is a large body of research on open education which has been disregarded by recent analysts. Gregory and Smith stated that they did not include the research on open education in the first review of schools that are alternative to the traditional, which appeared in the Encyclopedia of Educational Research, in 1981, "because of space limitations" (1981, p. 120). The research on open education has also been ignored by the "effective teaching" researchers, who admittedly examined only traditional classrooms (Dunkin & Biddle, 1974) and that which could be easily measured on standardized tests. Walberg points out that the teachers, parents, students and school boards who supported open education in the 1970s (like those today who support schools of choice and developmental approaches to schooling) had "broad goals such as cooperation, critical thinking, self reliance, constructive attitudes, lifelong learning, and other objectives that technically oriented psychometrists seldom measure" (Walberg, 1984c, p. 25). Two surveys have shown that these goals are more important to parents, students, and educators than standardized test scores and grades (Goodlad, 1982; Raven, 1981).

Walberg (1984c) attributes the general disregard of the research on open education (research done in the 1970s) to the widespread influence of a single study by Bennett (1976) which was given much publicity by the New York Times, with its circulation in all 50 states. Bennett flatly announced that open education was a failure. But no publicity was given five years later when Bennett himself retracted his conclusions (Aitkin, Bennett, & Hesketh, 1981) because statistical mistakes had been found in the original analysis of Bennett's research (Aitkin, Anderson, & Hinde, 1981).

In 1984, Walberg stated that "open education has been dismissed by many educators, but synthesis of research now illuminates its beneficial effects" (Walberg, 1984c, p. 25). He refers to two recent studies. A meta-analysis by Hedges, Giaconia and Gage (1981) synthesized 153 research studies on open education. A further review and analysis of these research studies by Giaconia and Hedges (1982) examined significant features of these developmental-interaction (or open) programs and the related achievement of students in the programs, as revealed in these and other research studies. Positive gains by students were noted.

One of the most valuable contributions of the research done in the 1970s is the work on analyzing the characteristics of teachers in developmental-interaction classrooms (known then as "Integrated Day" in England and "Open Education" in America). We will now summarize the major categories in each analyst's account of teacher characteristics, noting how one analyst has built on the work of another.

Barth (1969, 1971, 1972) began his analysis of the teacher in the developmentally oriented (or open) classroom by examining the underlying

beliefs, perceptions and ideas about children, knowledge and learning held by developmentally oriented educators in England and the United States. These beliefs are basic to the behavior of teachers in developmental-interaction classrooms, including nontraditional schools of choice. Barth's work has been the foundation for many subsequent studies. The Hoy-Jalovick (1979) questionnaire for teachers called "Teacher Attitude Inventory", which is used in the present study, is based on Barth's work (see Chapter 3 on the research design and instruments for the present study).

Barth (1972) identified the characteristics of teachers in developmental-interaction classrooms in both England and the United States. Under the heading "Facilitator of Learning", Barth describes several characteristics of teachers. Barth's criteria include the teacher as classroom manager, providing materials and fostering active learning and independence for children. He sees the teacher as one who guides children, emphasizing the use of spoken and written language to consolidate experiential learning. The teacher gives direct instruction as appropriate. The teacher is the authority in the classroom, without being authoritarian. The teacher also does diagnostic evaluation. After giving attention to the personal qualities of the teacher, Barth summarizes: "Stated very simply, the role of the teacher in the open school is to facilitate learning--to provide conditions which will encourage children to learn for themselves, and to fulfill themselves, personally, socially, and intellectually" (1972, p. 106).

Another investigation of the teacher's role and characteristics in open education was done by Traub, Weiss, Fisher, and Musella (1972), who

based their study on Barth's (1969) work cited above. They sought to identify the features that differentiate the open education approach to teaching from the more traditional programs. Ten categories were listed from the data gathered. They devised a teacher questionnaire called "Dimensions of Schooling", which are: the educational objectives; the teacher's role; the student's role in his or her learning; the ways of evaluation; the shared decision-making; the individualized approach to learning; the types of learning activities and materials; the daily schedule; the classroom environment.

The research of Bussis and Chittenden (1970) originally identified ten basic characteristics and roles of teachers in the Integrated Day type of classroom in the United States. They studied K-2 classrooms based on the British Primary model (or "Integrated Day") in seven states, employing both observations and interviews. After a year of research, Bussis and Chittenden wrote a report in which they state: "This report is about an educational position--one which embodies a philosophy of learning, a craft of teaching, a vision of life. It is not easily understood, and we do not claim to understand it fully now" (1970, p. 1). But their work is a landmark; it has helped others to understand and further define classroom teaching that is developmental and integrated in its approach. Many subsequent studies have taken Bussis and Chittenden's study of teacher characteristics as a foundation. In stating their purposes, Bussis and Chittenden say that there is "the problem of developing assessment procedures which are better suited to the more humanistic but less tangible goals of education in general" (1970, p. 2).

First, Bussis and Chittenden discerned a significant thing about the integrated day, or developmentally oriented, type of classroom--the shared decision-making. They observed that the teachers were active and influential--but so were the children. For many years in the United States, we have been accustomed to thinking of classrooms as either child-centered (as in many of the old progressive schools) or adult-centered (as in most traditional schools). But Bussis and Chittenden saw that, in today's developmental-interaction classroom, the teacher and the children share in the decision-making about what happens in the daily learning program. Spodek (1975) calls this a new kind of decision-making.

To illustrate graphically the place that decision-making plays in the different approaches to education found in schools today, Bussis and Chittenden developed a Double Classification Scheme (see Figure 1). They analyzed the kind of decision-making in four types of classrooms: traditional, laissez-faire, programmed instruction, and open education (developmental-interaction or integrated day, as it is called in Britain). This scheme shows how much the teacher decides and how much the child is allowed to contribute to important decisions about "the Content and Process of Learning" (Bussis & Chittenden, 1970, p. 23).

In the laissez-faire type of classroom, shown in the upper left-hand quadrant of the classification scheme, we see what Kohlberg and Mayer (1972) identified as the outcome of the Romantic notion of child development. In this classroom, the children make most of the decisions, the teacher makes few. The children are active, the teacher is passive, and the classroom is sometimes chaotic.

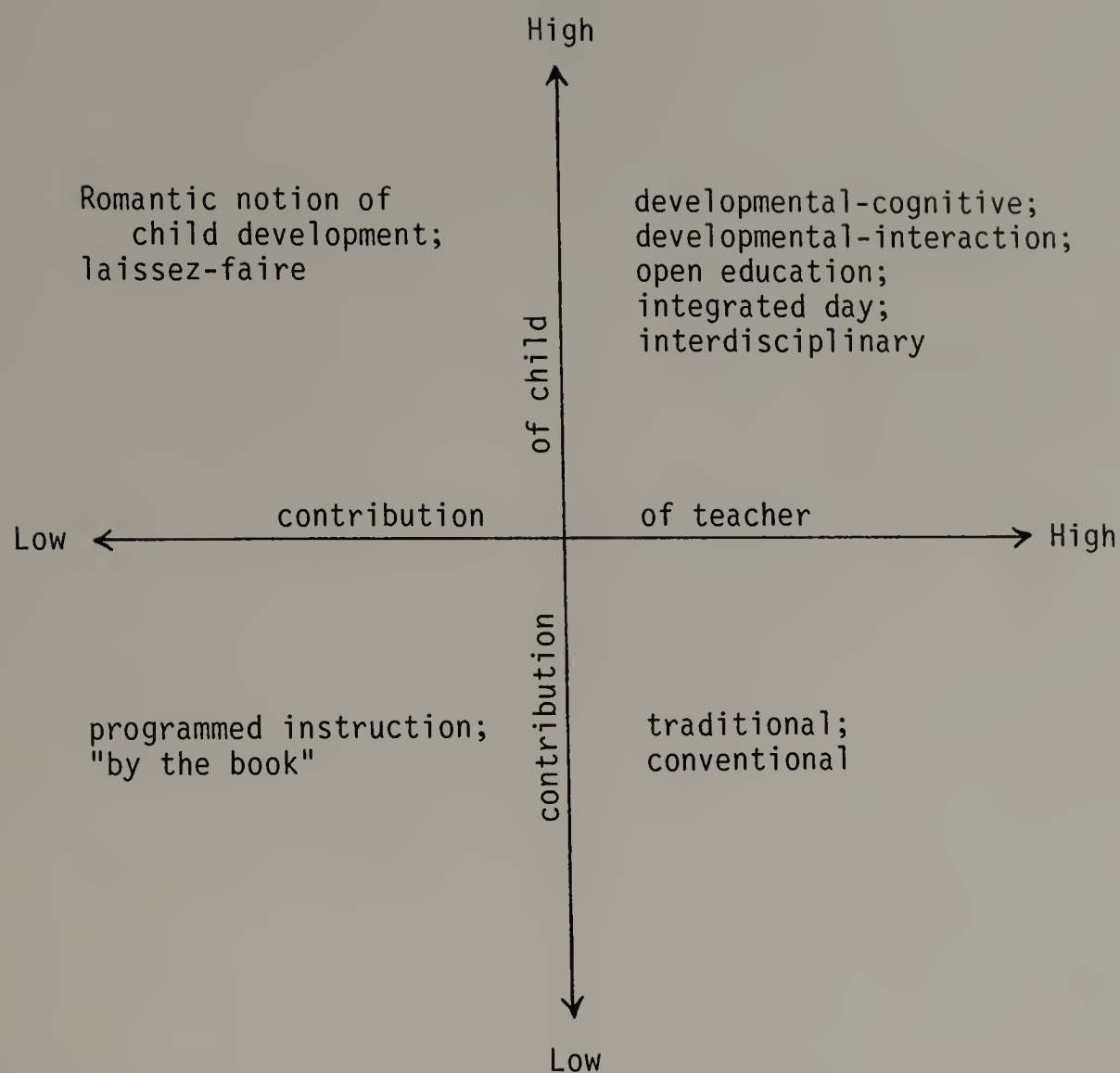


Figure 1. Double Classification Scheme based on extent to which (1) the individual teacher and (2) the individual child is an active contributor to decisions regarding the content and process of learning (adapted from Bussis & Chittenden, 1970, p. 23).

In the programmed instruction type of classroom, shown in the lower left-hand quadrant, the teacher goes "by the book". The teacher is carrying out decisions made elsewhere--by the school administration and educational publishing companies and others. Both teacher and children are passive. This is the sort of classroom where textbooks, workbooks, mimeographed worksheets and standardized tests abound. Education here is often grim and joyless. Both teacher and students make few decisions about the daily life of the school.

In the traditional classroom, shown in the lower right-hand quadrant of Bussis and Chittenden's (1970) classification scheme, the teacher makes most of the decisions, the students make few. This may be a dedicated and resourceful teacher, but the students are passive. The teacher acts as a prescriber and imparter of knowledge. He or she gives the students little opportunity to decide anything about their learning.

The upper right-hand quadrant of the classification scheme shows the approach to decision-making in integrated day types of classrooms (called developmental-cognitive by Kohlberg & Mayer, 1972; and developmental-interaction by Shapiro & Biber, 1972). In this kind of decision-making, both the teacher and the students make a high degree of contribution to classroom plans and learning activities. Both are responsible for charting the content, scope and direction of their studies. This does not imply that the teacher abdicates authority; he or she expresses it by supporting and guiding the student. This style of teaching "permits and encourages children's resourcefulness and individuality" (Walberg & Thomas, 1971, p. 9).

Bussis and Chittenden stated, "Because we found it difficult to define the teacher's part . . . to explain how a classroom contains both an active, influential adult and active, influential children, considerable time was spent in trying to examine the teacher's role" (1970, p. 28). This time yielded a valuable contribution to the teaching profession. From long hours spent observing teachers in action in these developmental-interaction classrooms, Bussis and Chittenden identified ten major areas of the characteristics and roles of teachers who teach in the developmental-interaction style. These ten areas of teacher activity each contain many appropriate behaviors, attitudes, skills, beliefs. They may be called the major recurrent themes that identify and describe a teacher in a developmental-interaction classroom.

The ten themes, originally identified by Bussis and Chittenden (1970), were later regrouped into eight major areas by Walberg and Thomas (1971), who called these themes a conceptual framework for looking at teachers. They are:

- (1) Provisioning for learning
- (2) Instruction: The guidance and extension of learning
- (3) Diagnosis of learning events
- (4) Evaluation: Reflective evaluation of diagnostic information
- (5) Humaneness: Honesty of encounters, warmth, respect for persons
- (6) Ideas related to children and the process of learning
- (7) Seeking activity to promote the teacher's continuing personal growth
- (8) Self Perception: Ideas related to the teacher's perception of self

Walberg and Thomas (1971) sought to verify these eight themes in the literature on education in England and the United States. For their study, they interviewed and sent questionnaires to both practitioners and authors of books on developmentally oriented approaches to education. Walberg and Thomas gathered information on more specific indicators of these eight themes (characteristics) in the work and beliefs of teachers. Then Walberg and Thomas designed an Observation Rating Scale and a Questionnaire based on these eight themes. These instruments identify how a teacher is working, on a continuum from deductive (traditional) to inductive (developmental-interaction) styles of teaching.

Evans (1971) used the instruments designed by Walberg and Thomas in a study in both British and American schools. Evans concluded that developmentally oriented educational practices can be empirically identified in classrooms and are not vague and hard to define, as the general belief has been. Many studies in the body of research on open education done in the 1970s used the Walberg and Thomas Observation Rating Scale as one of the instruments in their research.

In 1982, Giaconia and Hedges did a further investigation of the role of the teacher and the salient features of developmental-interaction (or open) classrooms. They wanted to determine which particular features are associated with children's success by the many research studies done in the 1970s. First, Hedges, Giaconia and Gage (1981) did a meta-analysis of 153 studies comparing students' achievement in traditional and open classrooms. Then Giaconia and Hedges (1982) did another study in order to determine the most effective features of the open education (developmental) approach to teaching. They based their analysis on

three sources: (1) The teacher/classroom features identified by Traub, Weiss, Fisher and Musella (1972); (2) Those teacher characteristics and roles described by Walberg and Thomas (1972); and (3) Their own reading of the 153 students used in the meta-analysis by Hedges, Giaconia, and Gage (1981).

From this synthesis, Giaconia and Hedges (1982) proposed their own list of seven significant features of open education teaching and classrooms: the role of the child in learning, diagnostic evaluation, materials to manipulate, individualized instruction, multiage grouping of students, open space, and team teaching. Using these features as a conceptual framework, Giaconia and Hedges then compared 72 of the larger and smaller effect studies. They found that neither open education nor traditional education are single, well-defined treatments. However, they found that open education (developmental-interaction) programs can produce more positive self concepts and better attitudes toward school, as well as more creativity, in students. The teaching style or classroom features in studies where these outcomes were produced evidenced four particular characteristics: the role of the child in learning, diagnostic evaluation, materials to manipulate, and individualized instruction. Giaconia and Hedges found that three features--open space, multiage grouping, and team teaching--had no part in distinguishing more effective open education programs from less effective programs.

Zahorik (1980) did a study of teaching practices and beliefs in elementary "specialty" schools, or optional nontraditional schools. Zahorik describes specialty schools as based on two beliefs: (1) Students have varied abilities, talents, interests; and (2) These needs are

best met when students are given choice of many types of traditional and nontraditional schools which specialize in different teaching/learning approaches. Zahorik further describes specialty schools as those with a curricular emphasis (such as science, the arts, or computers) and those with a special instructional emphasis (such as open education, individualization, or fundamental education).

Zahorik used a teacher questionnaire for this study of eight elementary schools. The teacher characteristics that he investigated were put under six categories: instructional practices, curriculum practices, organizational practices, beliefs about students, beliefs about knowledge, beliefs about goals. Zahorik drew on past studies for his questionnaire. For instance, all 31 of the items on teachers' beliefs were taken from Barth's (1972) work. One of the conclusions of Zahorik's study is that, according to the teachers' reports, the open schools that he examined were more highly developed than the other types of schools. Both the teachers' practices and their beliefs were more distinctly defined in the open, or developmentally oriented, schools.

And finally, Raywid (1982) has done an extensive survey of secondary nontraditional schools of choice in 1982. She did a subsequent analysis (1984b) of both the school features and the attributes of teachers in these optional developmentally oriented schools. Raywid's analysis has many parallels with the characteristics of teachers given by the other analysts cited above, who wrote of developmental-interaction types of schools in both England and the United States, on the Early Childhood and Elementary levels.

The work of Bussis and Chittenden (1970) and Walberg and Thomas (1971) appears to be the most comprehensive and thorough of all the descriptions of teacher characteristics and roles in developmental-interaction classrooms. For this reason, we have taken their eight broad themes as the conceptual framework for this study. We will now define and describe each of the eight roles and characteristics. To summarize, those are: Provisioning, Instruction, Diagnosis, Evaluation, Humaneness, Ideas Relating to Children and the Process of Learning, Seeking Personal Growth of the Teacher, and Self Perception of the Teacher. In order to indicate these particular characteristics and roles as a framework for the present study, they will be underlined when referred to, in the balance of the study.

Provisioning for Learning

The teacher's ability to arrange a stimulating and organized classroom environment has been called Provisioning for Learning by Bussis and Chittenden (1970). Traub and his associates listed Physical Environment as one of their ten Dimensions of Schooling. Indeed, every analyst cited above stresses one or more aspects of the teacher's role in structuring the environment in classrooms that have a developmental-interaction approach to teaching and learning (Barth, 1972; Bussis & Chittenden, 1970; Fantini, 1973c; Giaconia & Hedges, 1982; Traub et al., 1972; Raywid, 1984b; Walberg & Thomas, 1971; Zahorik, 1980).

Six aspects of the teacher's role called Provisioning for Learning are described in Walberg and Thomas' (1971) review of the literature: (1) the arrangement of space in the classroom; (2) the time structure or

the schedule of the school day; (3) the learning materials provided; (4) the teacher as authority in structuring the classroom and learning program; (5) the provision of choice for children and shared decision-making in the program; and (6) the structure of relationships and grouping in the classroom.

In order to better understand the importance of Provisioning for a teacher in a developmentally oriented classroom setting, we will now describe in detail each of the six aspects of the teacher's Provisioning role.

Space. The teacher in the developmental-interaction school has a flexible approach to the arrangement of classroom space. There are no rows of desks with assigned seats as in the conventional school. Rather, the classroom space is frequently organized into several small workshop areas or learning centers. There may be a mathematics center, a science corner, a social studies center, an arts and crafts center. Many hands-on learning materials appropriate to each center are kept in that area.

The teacher in the developmental-interaction classroom appears to be aware of the child's own role in learning (Giaconia & Hedges, 1982). A classroom with the learning center, or workshop, space arrangement invites exploration and active learning. Brown and Precious comment on the teacher's role in Provisioning:

The environment is all-important. It must be so well-planned, challenging, interesting and attractive that the child wants to become involved with the materials, wants to satisfy his curiosity and to learn. (1969, p. 13)

In the workshop classroom, children can move about naturally when they want to get materials or consult others. They frequently talk to each other about their curriculum projects. Indeed, teachers encourage spontaneous talking; they understand that talking, writing, and reading are interrelated (Silberman, 1971). Fantini calls this an "informal environment and human interaction" (1973c, p. 70). Raywid (1984b) comments on the developmentally oriented teacher's awareness of the importance of climate and the social context of learning.

This attitude is in sharp contrast to that found in the traditional, formal classroom. There, the teacher usually wants children to be quiet (no talking) and stay still for long periods, sitting in their assigned seats. The children work largely alone, although they often are amid a crowd of 30 students. They study each subject separately in the conventional school (Barth, 1972; Fantini, 1973c).

The teacher in the developmental-interaction or workshop classroom has an interdisciplinary approach, planning learning projects that integrate the curriculum subjects (Barth, 1972; Raywid, 1982, 1984b; Walberg & Thomas, 1971). The learning centers do not divide the subjects, but rather they serve to provide workshop areas for integrated projects.

Time for learning. Another important part of a teacher's Provisioning for Learning in the developmental-interaction classroom is the way he or she structures the time schedule for the day (Bussis & Chittenden, 1970; Fantini, 1973c; Traub et al., 1972; Walberg & Thomas, 1971; Zahorik, 1980). The familiar, traditional time schedule (in which the day is cut up into short 30- to 50-minute periods for each unrelated subject) is replaced with a different time structure. Rather, in

developmental-interaction schools, the day is planned in large blocks of time for the pursuit of learning projects and activities that integrate the curriculum subjects. There are usually meetings of the whole class to plan the day's learning activities and choices in the various learning centers or workshop areas. The teacher may also plan for small groups or individuals to work with him or her at certain appointed "conference" times, for direct instruction on a particular skill in mathematics or reading, science or art (Walberg & Thomas, 1970; Barth, 1972).

Teachers use this large-block-of-time structure to help children learn to plan and manage their own use of time (Fantini, 1973c; Plowden, 1967). Even the youngest children in elementary school can check off items on a sheet entitled "My Plans for Today". For older students, the daily individual planning sheet often includes a self-evaluation space: Did I accomplish what I planned for today? What should I continue working on tomorrow? Plowden states that the teacher "must see that time is profitably spent and give guidance on its use" (1967, p. 198). Fantini points out that "activity duration is child controlled" (1973c, p. 70). Also, there are oftentimes set aside in the time structure of the day for the entire class to meet together again, to report on their progress and evaluate their accomplishments together, sharing ideas and interests.

This type of time structure is widely used in many kinds of optional developmentally oriented schools and classrooms today (Raywid, 1982). It is called "Integrated Day" by the British (Brown & Precious, 1968). During a large block of time in a developmental-interaction classroom, when the learning centers/workshops are being used, several curriculum

projects usually are going on at the same time (Spodek, 1975). The teacher's role is to move about the room, observing the students at work, and intervening to guide their studies at the moment an individual or small group needs help. This is individualizing instruction. Leonard states, "If human beings are individual and unique, then any system of fixed scheduling and mass instruction must be insanely inefficient" (1968, p. 181). In developmental-interaction schools and classrooms, the teacher seldom tries to teach a whole class the same thing at the same time, as in traditional schools. Rather, the developmental-interaction or inductive teachers' Provisioning of the flexible space and time structures described above "maximizes their children's ability to learn at their own rate and in their own ways" (Walberg & Thomas, 1971, p. 35).

Another problem found to be difficult by teachers in traditional or formal schools is solved by the flexible large-block-of-time structure of the more informal, developmental-interaction school. According to Sarason, teachers in traditional schools find it hard to cope with "the number and diversity of children and the felt need to stick to a time schedule" and "the preoccupation with lesson plans and the need to cover them by a certain time" (1982, p. 81). The traditional daily schedule is made up of short periods of 30 to 50 minutes in which each subject is taught separately in unrelated sequence.

Materials for learning. The importance of the teacher's providing distinctive types of learning materials in the developmental-interaction classroom has been cited by six of the analysts referred to above (Barth, 1972; Bussis & Chittenden, 1970; Fantini, 1973c; Giaconia & Hedges,

1982; Traub et al., 1972; Walberg & Thomas, 1971). Fantini points out that when the teacher uses inductive approaches to teaching, he or she usually places "emphasis on an abundance of concrete materials to manipulate" (1973, p. 70). Bussis and Chittenden (1970) say that the learning materials in open or developmentally oriented classrooms have a wide range of variety and diversity for the purpose of giving choice to children. There are seldom sets of 30 books, as in traditional schools. In most developmental-interaction classrooms, there are both commercially prepared materials and many natural and raw materials for original creative expression, such as wood, clay, paint, craft materials, sand, water (Brown & Precious, 1968; Plowden, 1967). And there is often a profusion of books on many topics and on many reading levels in each classroom, readily available to children. This is in contrast to many traditional schools, where many textbooks and workbooks are in the classrooms and the majority of other books are kept in the library. In the more informal, developmental-interaction type of teaching, having many books on a diversity of topics, right at hand in the classroom, makes a difference about which Blackie comments:

This lavish provision of books and their constant use [emphasis mine] has perhaps been the most striking change in the English primary school since the war. Until it happened, the full possibilities of children using their own initiative [emphasis mine] could not be realized, or even imagined. (1967, p. 62)

Teachers in developmentally oriented schools are aware of the research which informs us that children up to the age of about 12 years must explore and handle concrete materials before they can understand the related abstract ideas (Brearley, 1970; Dewey, 1938/1965; Furth,

1970; Hunt, 1961; Isaacs, 1930). Barth points out that "the teacher must provide materials which will invite questions, study, examination and activity" (1972, p. 83). Barth describes learning in an open classroom as similar to three sides of a triangle--the child, the materials, and the teacher. Learning happens when there is an interaction between the child and the materials (hands-on activities in the real world). The teacher's role is to enable, guide, intervene, support. The child is the agent of his or her own learning. His or her study is a process of inquiry and problem solving (Barth, 1972; Fantini, 1973c).

Barth contrasts this process of learning with that in the traditional school. The traditional way is that the child learns largely from textbooks and workbooks. In this method, the child learns from symbols such as words and numbers (the abstract, without concrete materials). Much memorization and drill is required. The teacher's role is transmitter of knowledge in the traditional school (Barth, 1972).

The teacher as authority in structuring the environment. Contrary to popular opinion, there is no surrender of the teacher's leadership and authority in the classroom that has a developmental-interaction approach (Bussis & Chittenden, 1970; Walberg & Thomas, 1971). Indeed, both the individuality and the authority of the teacher come to the fore in this important aspect of the teacher's role--that of planning, supplying, and organizing the materials, learning centers, and curriculum activities and projects in the classroom. The teacher has "more autonomy and freedom . . . to shape the educational program" (Raywid, 1982b, p. 4). Of this aspect of the teacher's role, two heads of English Integrated Day schools, Mary Brown and Norman Precious, have said:

The teacher is in charge of the classroom and it is her responsibility to make the environment (well supplied with suitable apparatus and materials) attractive and thought-provoking . . . for the development of the children's creativity and intellectual ability. (1969, pp. 28-29)

Many writers on developmental-interaction approaches to teaching have commented on this aspect of the role of the teacher as authority but not authoritarian. Featherstone says, "Although the British schools stress cooperation and children are encouraged to teach each other, there is no abdication of adult authority, and no belief that this would be desirable" (Featherstone, 1971, p. 39). Barth endorses the role of the teacher as authority in the open or developmental-interaction classroom. He has stated, regarding the Integrated Day type of classroom:

A certain amount of management of children by adults, a certain amount of imposed order, structure, and control, is a necessary precondition for independent exploration. Reasonable, consistent restrictions on children's behavior ultimately enables them to be more free and productive. (1972, p. 97)

Choice for children and shared decision-making. When a teacher organizes the curriculum around integrated projects and sets up a workshop classroom with many available activities, learning centers and materials, this gives children the opportunity for several choices each day in their learning program. Indeed, structuring the classroom for choices by children is considered most important by teachers using developmental-interaction styles of teaching, for many reasons. First, the result of self-directed choice is that children are highly motivated. They work with a purposefulness--a word frequently used to describe them by visitors to developmental-interaction schools (Featherstone, 1971;

Silberman, 1970; Walberg & Thomas, 1971). Also, students who have had some choice and share in the planning of learning activities tend to value their own work and learning (Walberg & Thomas, 1971). Observing Integrated Day classrooms in England, Featherstone remarked, "The extent to which children really have a choice and really work purposefully is astonishing." He continues, "The purposeful self-discipline of these children is, we are told, just as surprising to middle-aged Englishmen as it is to Americans" (Featherstone, 1967, pp. 5-6). Traub and associates call this opportunity for choice a kind of control by students; Giaconia and Hedges highlight the role of the child in his or her own learning (Giaconia & Hedges, 1982; Traub et al., 1972).

There is a structure in the way choices are given in the developmental-interaction school. Children do not have complete freedom to do anything they want to do. Indeed, there is shared decision-making between teacher and child (Bussis & Chittenden, 1970). The teacher chooses the materials and the curriculum experiences and organizes the environment for active learning. The children choose from what is there--which learning center to investigate, with whom to work and for how long. Many class meetings are held to plan and make these decisions and choices. A mutual respect develops; as the teacher encourages the child's exploration of learning, the child gains in confidence. Indeed, the sense of trust in such developmental-interaction classrooms is quite marked. Barth has even said that "trust is a basic personality characteristic" (1972, p. 90) of teachers in classrooms that have a developmental-interaction approach.

By contrast, Barth points out that distrust and fear are characteristic of many traditional classrooms. These teachers are always in front of the class, constantly keeping an eye on children. Students are not permitted to talk to each other and they cannot leave the room without a pass. They are given tests to check on whether they did their work. They work largely alone, although there are many people present. Students often fear and distrust teachers in traditional schools. Speaking of schools run along traditional lines, Barth says, "Lack of trust . . . is characteristic of most schools" (1972, p. 90).

Bussis and Chittenden (1970) have said that shared decision-making between teachers and children is a chief characteristic that distinguishes the developmental-interaction classroom from other types in our schools today. Furthermore, Raywid's survey of optional nontraditional secondary schools found that shared decision-making has been emphasized as important in several types of nontraditional schools of choice for older students, also (Raywid, 1982, 1984a, 1984b). By contrast, Barth points out that in most traditional schools, "adults are the decision-makers" (1972, p. 91).

Relationships, a structure. When teachers can get rid of the rigid time schedules, the regimentation and standardization of the conventional school, "what arises is neither a vacuum nor chaos, but rather a new order, based first on relationships between adults and children, and children and their peers" (Dennison, 1969, p. 9). The teacher sets the tone for the relationships in the classroom. This is an important part of the teacher's Provisioning role--establishing a climate that fosters good relationships (Walberg & Thomas, 1971; Raywid, 1984b).

Interaction among children is seen as desirable for normal growth and learning in developmental-interaction classrooms. Teachers purposely foster students' spontaneous talking and sharing ideas, working together on learning projects, and helping each other. Fantini (1973a) comments on the informal interaction in developmental-interaction classrooms (having an inductive approach to teaching and learning). Also, such teachers encourage children to group themselves, to choose with whom they wish to work on learning activities. "Constant realignment is a characteristic of these functional groups; it is as if the children were continuously coming together in small work crews" (Rathbone, 1970, p. 39).

This is quite different from the traditional school's ability grouping or homogeneous grouping, so often done from standardized tests and rigidly held to, placing children in the low or high group in reading and mathematics. At the middle school level (as early as fifth grade in many traditional school systems now), entire classes are often composed of low achievers or high achievers. This is also true in traditional high schools today. Barth points out that the ability grouping of the conventional school is a logical result of the traditional concept of the teacher's role--transmission of knowledge.

Another aspect of grouping in the developmentally oriented approach to teaching and learning is known as multiage grouping. This plan has been called ungraded or nongraded schooling in the United States for many years (Goodlad & Anderson, 1963). The name for this grouping method in England has been family grouping or vertical grouping (Brown & Precious, 1968; Weber, 1971). Montessori schools have grouped children

of different age levels together successfully since the beginning of this century, in schools the world over (Montessori, 1965, 1967). Placing students in classes comprised of several age levels is widely done in developmentally oriented schools from grade one through high school today in the United States (Fantini, 1973c; Giaconia & Hedges, 1982; Traub et al., 1972; Raywid, 1982).

There are many advantages of multiage grouping. It fosters positive interaction and relationships among children. It forces the teacher to look at each child as an individual, not as a fifth grader. The rigidity and lack of allowance for individuality inherent in the traditional graded school was criticized by two university presidents at the beginning of this century--Charles Eliot and William Harper, of Harvard and the University of Chicago. They wrote, "The stereotyped patterns of the graded school system demand a stereotyped individual as learner" (quoted in Silberman, 1970, p. 166).

In a developmental-interaction classroom, the relationships of children to children are seen to be as important as the teacher-child relationship, whereas only the latter is considered important in the traditional school. Help with relationships was also considered important by the high school students in the optional nontraditional schools included in a survey done by Raywid (1982).

In the formal, workshop classroom in all types of developmentally oriented schools, at all age levels, a sense of mutual respect and cooperation pervades the relationships (Raywid, 1982a; Walberg & Thomas, 1971). Armington has described such a classroom in the following quote:

The environment we seek to create within the school is one which is truly responsive to the needs and interests of children; in which children's learning is deeply rooted in experience; where knowledge becomes important because it is relevant and put to use; and where children, in an atmosphere of mutual trust and respect, can carry on with each other and adults the kind of open dialogue that is the essence of good education. (Armington, quoted in Walberg & Thomas, 1971, p. A16)

Summary of Provisioning for Learning. "From Provisioning, all else follows" (Walberg & Thomas, 1971, p. 19). Having provided the appropriate structures in the classroom--the arrangement of space in workshop areas (learning centers), an abundance and variety of learning materials, a suitable time schedule, and some provision for the students' making choices and for positive relationships--the teacher is ready to teach, the children are ready to learn. Next we turn our attention to the teacher role in Instruction.

Instruction: Guidance and Extension of Learning

After Provisioning, what is the next step in defining the roles and characteristics of teachers in classrooms that are nontraditional and developmentally oriented? Instruction has been given a strong emphasis by the analysts of the teacher's characteristics in developmental-interaction schools, in both England and the United States. However, the concept of instruction is not the transmitter-of-knowledge model of the teacher in traditional schools. Rather, the teacher in developmental-interaction schools is seen as a guide or facilitator of the student's individual efforts in seeking knowledge and making it personally meaningful (Barth, 1972; Bussis & Chittenden, 1970; Fantini, 1973c; Raywid, 1984b; Walberg & Thomas, 1971).

The developmental-interaction teacher's role in instruction begins with planning, an important part of both provisioning and instruction. However, this type of teacher plans both for children and with children (Fantini, 1973b; Hertzberg & Stone, 1976). The teacher's planning allows for both choices and shared decision-making by children, as described above. The teacher plans both specific lesson planning and long-range unit planning for interdisciplinary curriculum projects.

The teacher's role in the developmental-interaction classrooms is not the "chalk and talk" and the whole class instruction of the traditional classroom. Rather, individualizing instruction is characteristic of teachers who have a developmental approach. They most often work with individuals or small ad hoc groups that change frequently as children progress in their learning (Barth, 1972; Fantini, 1973c; Traub et al., 1972; Walberg & Thomas, 1971). As facilitator, the teacher is a partner with the individual child in his or her learning. The teacher asks questions to help the child think through his or her own solutions. Therefore, questioning techniques are an important teaching skill. In observing each child at work, the teacher looks for his or her own style of learning, thinking and expressing ideas. The teacher guides, extends possibilities, introduces new materials and next steps--these are instructional activities of the developmental-interaction teaching style (Fantini, 1973c; Raywid, 1984b; Silberman, 1970; Walberg & Thomas, 1971).

The methods of Instruction can best be seen in the description of a typical school day. After the children and the teacher plan together for the day in a class meeting, the work period begins. The children move to the various learning centers/workshops around the classroom and work

individually or in small groups. Then the teacher's instructional role is to move about the room, individualizing his or her instruction in a sensitive, adaptive way. As the teacher moves from this child to that small group, his or her attitude seems to indicate that the teacher thinks repeatedly: How can I help this particular child with his or her needs and interests at this moment? (Barth, 1972; Bussis & Chittenden, 1970; Walberg & Thomas, 1971). This instructional activity of the teacher is called intervention. It takes a real knowledge of how children learn individually for a teacher to discern just when to intervene. In this intervention method of teaching, the teacher seeks to discern the learning stage of each child, and to determine what help is needed. This requires a knowledge of how children work and develop, and of individual learning styles (Dunn & Dunn, 1978; Fantini, 1973c; Walberg & Thomas, 1971). Silberman commented on this instructional activity of the teachers in schools he had observed in both Britain and the United States:

It is not enough to create a rich environment. . . . The teacher must know when, and how, to intervene if she is to achieve the main objective, helping children learn how to think, to form judgements, to discriminate. (1970, p. 210)

The teacher in the developmental-interaction classroom often gives direct instruction to individuals and small groups, as well as specific assignments when needed. He or she may have noted in observations or individual conferences with children that several need a particular skill in reading or mathematics at this time. He or she will call this small group together the next day for a lesson on that skill. Direct instruction definitely has a place in the informal or developmental-interaction

classroom (Barth, 1972; Fantini, 1973c; Raywid, 1984b). However, direct instruction is not done for the entire school day, as in some traditional classes.

There has been a great deal of research on direct instruction in recent years. This research was done largely in traditional classrooms where direct instruction is the dominant approach to teaching (Dunkin & Biddle, 1974). This research could be helpful in instances where some direct instruction is employed in the developmental oriented classroom; however, a combination of both direct and indirect instruction is usually the pattern of developmental-interaction schools. The term indirect instruction has been used for the projects and integrated curriculum activities typical of developmental-interaction approaches to instruction. Research has shown that a balance of both direct and indirect instruction techniques are a benefit to children, and that teachers should ask for whom and for what purposes each kind of instruction is employed when making decisions about instructional methods (Peterson, 1979).

The teacher in the nontraditional or developmentally oriented classroom has clear long-term goals; he or she plans flexible daily steps toward them (Walberg & Thomas, 1971). The teacher is expected to know the sequence of skills and adapt this knowledge to the individual readiness and needs of each child (Raywid, 1984b; Walberg & Thomas, 1971). Also, the teacher is expected to know the subject matter, the content of the curriculum--the mathematics, reading materials and skills, the social studies content and science experiences, and the creative arts that the students are learning. Not only should the teacher know the key concepts

and skills in these areas, but he or she should also know the sequence or stages in learning these concepts (Barth, 1970; Bussis & Chittenden, 1970; Rathbone, 1970; Raywid, 1984b). The basic skills are not only important in developmental schools, they are also made relevant because they are put to use in creative interdisciplinary projects and activities of a wide variety.

In the approach to teaching found in developmental-interaction schools, the teacher must know what is suitable for students at different stages and levels of Child Development, the psychology of normal growth and development, recognizing that each child has a range of abilities and interests at any given age level. The teacher also needs to know a diversity of teaching methods, realizing that there is no "one best method" for all children. Rather, the teacher must adapt various methods to the individual child's learning style, aptitudes, and needs (Barth, 1970; Dunn & Dunn, 1978; Fantini, 1973c; Raywid, 1984b).

Also, such a teacher encourages interaction among children in their learning projects. It has long been known that students spontaneously teach each other in informal classrooms. More recently, several groups of social psychologists and teachers have been doing research on cooperative learning.

The cooperative learning movement includes two basic approaches. Small group teaching methods, in which children interact and arrive at solutions to problems together, have been developed by Johnson and Johnson (1975) and Sharon (1980). Another approach is peer tutoring, in which one student tutors another (Fogarty & Wang, 1982; Heward, Heron, & Cooke, 1982). There is now an accumulated body of research on these

two approaches to cooperative learning, done by the above researchers and reported in research journals since 1969. Slavin (1981) reviewed this research and stated that classrooms using cooperative learning methods have surpassed control groups in achievement in mathematics, reading and language arts, and social studies. He also said that cooperative learning had brought about better relationships among children of different races in the same class and had improved the student's liking for school. The instructional strategy called "cooperative learning" calls for patterns of classroom organization or structure that are different from the traditional.

Teachers in both elementary and high schools that use developmental-interaction Instruction methods must be able to work with curriculum content in a variety of ways. They often organize the curriculum around themes. This calls for an interdisciplinary organization of curriculum, in units of study employing many activities and integrated learning projects. Emphasis is on active and experiential learning, for all levels from the youngest children to those in secondary school. Also, teachers in developmentally oriented schools need to be flexible enough to plan curriculum activities that respond to the individual interests of the children in their class (Barth, 1970; Fantini, 1973c; Raywid, 1984b). In developmentally oriented secondary schools, the focus on individualization and experiential learning often leads to independent study as a method of instruction (Raywid, 1984b).

Because of the teachers' conviction that students need to learn experientially from the real world, the educational resources of the developmental-interaction school are extended so that the community

becomes a classroom. Field trips and community-based projects are an important part of the curriculum in such a school. Indeed, the ultimate community-as-a-classroom is found in the School Without Walls, where high school classes are actually taught in the businesses, banks, and cultural institutions of the city. The Parkway Program in Philadelphia is generally conceded to be the first such school (Fantini, 1973c; Gregory & Smith, 1982; Smith, Barr, & Burke, 1976).

The teacher in the developmentally oriented school has to be a generalist in curriculum, with broad interests and eclectic knowledge. He or she must evidence an eagerness to learn, to explore with children, a let's-find-out attitude (Barth, 1972). On the secondary level, the teacher must be both a generalist and a specialist in some area of curriculum. At all levels, the teacher must be confident enough to exercise the autonomy necessary to develop curriculum according to the needs and interests of the students now in his or her class (Raywid, 1984b).

Diagnosis of Learning Events

Another characteristic of teachers working in developmental-interaction approaches, as identified by Bussis and Chittenden (1970), is the teacher's role in the Diagnosis of Learning Events. The teacher gives much time to diagnosing the needs, the talents, strengths and progress of students (Walberg & Thomas, 1971). The methods of Diagnosis, however, are not those of standardized testing found in traditional schools. The methods used in developmental-interaction schools are such teacher skills as observation, individual conferencing, questioning techniques, and extensive record keeping, with analysis of these records

over time. This type of Diagnosis is considered an important characteristic of teachers in developmental classrooms by several analysts (Bussis & Chittenden, 1970; Fantini, 1973c; Giaconia & Hedges, 1982; Raywid, 1984b; Walberg & Thomas, 1971).

Much of the teacher's Diagnosis of children's learning is done through observation of each child at work in the integrated curriculum projects in the classroom, as well as in individual conferences on reading and mathematics skills. The teacher often keeps anecdotal records describing each child's daily activities. These records are valuable documentation of a child's development over a period of time. This observation-diagnosis skill is practiced while the teacher moves about the room helping children learn. Later in the day or week, the teacher may write these anecdotal records into a journal about each student.

Specific techniques for observing children in action and recording data have been developed by educators (Almy, 1959; Cohen & Stern, 1969; Suchman, 1959). The basis of the ability to diagnose by observation is a sound knowledge of the psychology of child growth and development (Weber, 1971). The teacher in the developmental-interaction classroom looks for indications of each child's feelings and thought processes, not just for right answers. She or he is interested in the development of the student as a whole person--the social, emotional (affective), cognitive and physical growth of the child or young person.

Indeed, it may not be possible to come to know children so well as unique individuals in a traditional, formal classroom setting. Teachers in developmental-interaction, more informal classrooms "are distinguished by their special awareness and alertness to the diverse qualities of

their children's activities and learning styles" (Walberg & Thomas, 1971, p. 8).

Any mistakes a student makes are seen by teachers in developmentally oriented schools as indicators of where the student needs help. Errors are seen as opportunities for further learning. Therefore, there is no fear of failure in classrooms of this kind; it is a wonderfully positive climate in which to learn. "An important facet of the teacher's role is her diagnosis of the children's difficulties and the giving of appropriate help," say Brown and Precious (1968, p. 33). By contrast, Barth (1972) points out that, in many traditional schools, teachers put emphasis on mistakes and give children penalties for errors. Barth says that this can have detrimental effects on learning.

Children are also helped to diagnose their own work in the developmentally oriented approach to teaching. By asking questions, the teacher seeks to help a child perceive where he or she has made an error and then think through ways to correct it. The child comes to see other possibilities--that there is more than one way to arrive at an answer, to find a solution, to accomplish work (Fantini, 1973c; Raywid, 1984b; Giaconia & Hedges, 1982; Walberg & Thomas, 1971).

The teacher's role in Diagnosis of Learning Events in the developmental classroom is closely related to his or her roles in Instruction, described above, and Evaluation. Accurate and detailed record keeping of many kinds is an important part of this process. Further description of a teacher's record keeping will be discussed in the ensuing section on Evaluation.

Reflective Evaluation of Diagnostic Information

The teacher's role in Evaluation is continuous in the developmentally oriented classroom. As the teacher diagnoses each child's progress, he or she adjusts the instructional methods to meet individual needs. Evaluation in the developmental classroom is based on (1) direct observation of each student over a long time period, and (2) extensive record keeping. This has been called diagnostic Evaluation by several analysts (Barth, 1972; Bussis & Chittenden, 1970; Fantini, 1973c; Giaconia & Hedges, 1982; Walberg & Thomas, 1971).

Much more detailed and extensive records are usually kept in developmental-interaction classrooms than is the case in most traditional schools, where only the basic skills and test scores are emphasized (Barth, 1972). The teacher in the nontraditional, developmental classroom constantly assesses the strengths of children and designs next steps for each child. Evaluation is a constructive process and is closely related to a teacher's goals for children (Miles, 1964). In addition to basic skills, or measurable goals, the developmentally oriented teacher also evaluates the broad goals for children in their overall development. He or she records not only what the individual student is learning, but how they learn, as well as the student's attitudes, values, and beliefs. Miles says that "critical thinking ability, resourcefulness, persistence, and the ability to express ideas in writing are examples of such general goals" (1964, p. 80).

Evaluation in developmental-interaction schools is seen as a much broader role of the teacher than what is traditionally regarded as

evaluation (such as test scores, report cards and grades). Indeed, Evaluation is not seen as simply final scores in the academic subjects in the developmental-interaction school. The evaluation of the individual child's progress includes both his or her academic learning and such developmental learning as self-concept, creative expression, physical development, and social maturity.

Many teachers and principals today are well aware that some of the most important and valuable goals for children in a modern educational program are simply not measurable (Barth, 1972; Walberg & Thomas, 1970). But achievement in more affective areas of learning can be described, rather than measured. The developmentally oriented teacher has several ways of doing record keeping.

Indeed, today's developmentally oriented teacher sees the limitations of the traditional school's standardized tests and other yardsticks such as grades. The ranking and classifying of students in this way leads to a very limited view of students' learning. Since each child is unique and has his or her own special strengths and talents, the teacher in the developmental-interaction school prefers to evaluate his or her progress against his or her own past record. Such a teacher is constantly aware of each child's stage of development and his or her individual progress, based on his or her knowledge of Child Development, the psychology of the ways children grow and learn. Each child has his or her own rate of growth and style of learning. Therefore, nationally standardized tests actually tell us very little. Dennison says, "We could learn nothing about Maxine by testing Elena. . . . The teachers were spared the absurdity of ranking dozens of personalities on one

uniform scale" (1969, p. 8). Teachers in developmental-interaction schools see standardized tests as competitive, therefore totally inappropriate for evaluating a child's progress. The evaluation done by teachers in developmental-interaction schools builds on the strengths of each child and is for the benefit of forwarding that child's progress. Evaluation is only secondary for the school or the parent (Barth, 1972; Miles, 1975).

Evaluation in classrooms where teachers use developmental methods has been defined as a structured process for gathering and analyzing information about a child's learning. That information leads to next steps in planning for the individual student's instruction. This process takes much more extensive record keeping than is employed in most traditional schools (Barth, 1972).

The Plowden Report in England states, "We envision that some use will continue to be made of objective tests within school" (1967, p. 141), and then goes on to qualify this use of standardized tests: ". . . as long as they are used with discrimination and teachers do not assume that only what is measurable is valuable" (1967, p. 141). Featherstone has contrasted two types of evaluation--that found in the traditional formal schools in America, and that which he observed in England in the Integrated Day informal schools with developmental-interaction approaches to teaching. Featherstone states:

In informal conditions, it is essential for the teacher to keep detailed and accurate accounts of what a child is learning. . . . If Americans could ever see some of the detailed histories kept of each child's separate path . . . they would feel, quite rightly, that a report card is a swindle. (1967, p. 6)

Humaneness: Respect, Honesty, and Warmth

When Bussis and Chittenden (1970) first identified the eight broad characteristics and roles of teachers in schools that are developmental-interaction types, they discovered a special quality in the relationships between teachers and students. This they called Humaneness, which is made up of such personal qualities as caring, warmth, respect, honesty, encouragement, support, trust, confidence. They found little on this subject in the literature on education, although it was always verbally acknowledged as vital by teachers and administrators in Integrated Day types of schools in both England and the United States.

Bussis and Chittenden began to systematically gather information about this characteristic called Humaneness. They interviewed Advisors and observed teachers at work. Then Bussis and Chittenden outlined three areas of teacher behavior that define and describe the characteristic Humaneness. They are: Respect for Persons; Honesty of Encounters; and Warmth.

Respect for Persons. As indicators of Respect for Persons, Bussis & Chittenden (1970) identified three kinds of teacher action:

(1) The teacher values the child's interests as avenues for individualized learning. Teachers discern this by observing each student's involvement in activities.

(2) The teacher respects the child as an individual; the teacher understands that each child has his or her own style of learning, thinking, acting. Thus the teacher is willing for each child to experience different ways of doing things in the classroom. Also, there is little ability grouping.

(3) The teacher has respect for the child's ideas. Respect for the individual child's own ideas, his or her way of thinking and his or her opinions, is shown in many specific ways: (a) Children's art work and writing are featured in beautiful displays in the classroom and throughout the school; (b) the students' creative writing is bound into booklets and put on the library shelves in the classroom, as legitimate reading material for the rest of the class, right alongside books from the library; and, most important, (c) the students' opinions are invited in class meetings and children have a real share in the daily decision-making and planning for learning activities in the class. Another important element in expressing respect for children is that (d) real choices are given the children in their learning activities, balanced, of course, by assignments from the teacher and shared decisions (Bussis & Chittenden, 1970; Walberg & Thomas, 1971).

Other analysts of teacher characteristics in developmentally oriented classrooms have also commented on the quality of Humaneness on the part of teachers. Rathbone says, "To honor a child's rights as a human being . . . it means valuing him as a human being" (1970, pp. 81-82). Raywid (1984b) says that nontraditional (developmentally oriented) schools foster a personalized environment and that teaching is more of a people process. Bunker (1972) has pointed out that certain actions on the part of the teacher--shared decision-making, providing choices for children, and honoring a child's opinions and ideas--are important ways of expressing humaneness in the classroom.

Honesty of Encounters. Honesty of Encounters in the classroom is the second aspect of the teacher characteristic called Humaneness by

Bussis and Chittenden (1970). Again, they found that three behaviors of the teacher are indicative of this sort of honesty.

First, teachers in developmental-interaction schools are willing to admit their own limitations. If they do not know the answer to a child's question, they say so. They also say, "We can find out." Then either they investigate the question together, or the teacher may send the child to another source. This kind of Honesty of Encounters relieves the teacher of the anxieties incumbent on thinking the teacher has to know everything, as in the traditional approach to education. The developmental-interaction teacher has a more realistic role, becoming a guide for learning.

Second, another characteristic describing Honesty of Encounters is the way the teacher evaluates a child's work--using an approach that builds confidence and trust. Evaluation is done in relation to each child's own progress. The teacher is positive, building on strengths and accepting individual differences. Mistakes are seen as indicators of needs to learn, as opportunities to improve. Hence, the classroom climate has no threats or fear of failure. Such an Evaluation procedure fosters a climate of mutual trust, in which the students feel confident to express their own ideas.

Children's actions are noticeably different in a classroom where they are trusted (the developmental-interaction type). They are relaxed and confident. There is purpose and pride in their work; they take responsibility for accomplishing work, for caring for materials, and for helping each other (Hertzberg & Stone, 1972; Walberg & Thomas, 1971). The attitude of trust begins with the teacher's own trust and respect for

each child as an individual, and the active expression of this trust in the classroom. Then, "the children respond in kind, developing a capacity for self-control and self-direction that one rarely finds in children educated in formal schools," says Silberman. He adds that this mutual sense of trust "is accompanied by a relaxed and easy self-confidence" (1970, p. 235).

There is a third behavior indicating the teacher's characteristic of Humaneness, as seen in Honesty of Encounters, according to Bussis & Chittenden (1970). This behavior is the way the teacher sets limits and establishes rules. Children need clear guidelines for action, but these must be "fences" within which the children have some choices and some freedom of movement in the classrooms. Children also need to know that the teacher is in charge--that he or she will act like a responsible, caring, protecting adult.

Warmth. The third indicator of Humaneness in a teacher's work, as defined by Bussis and Chittenden (1970), is Warmth. Several teacher behaviors indicate that warmth is being expressed in the classroom, according to Bussis and Chittenden (1970) as well as Walberg and Thomas (1971). First, there is the teacher's attitude toward the expression of feelings and his or her provision for the integration of children's feelings and thinking. Indeed, "feelings are respected as much as ideas or products" (Bussis & Chittenden, 1970, pp. 48-49). The developmentally oriented teacher is just as interested in furthering a child's emotional and social development as his or her intellectual development (Raywid, 1984b; Walberg & Thomas, 1971). The teacher is aware that he or she is creating an affective environment in which "a

child learns what he is; he learns what he does; he brings his total humanity to a situation" (Hertzberg & Stone, 1972, pp. 20-21).

Expressing strong feelings may erupt in conflict among children. This is recognized and worked out in the group, with the support of a reassuring teacher. The developmentally oriented teacher's deep and caring respect for each individual is expressed as unsentimental warmth and affection. Such a teacher "is sensitive to children and is often able to see the world through their eyes. He watches, he listens," say Hertzberg and Stone. They explain, "He takes time to know the child's strengths, interests, abilities, and individual styles of working" (1972, p. 22).

When a teacher expresses Humaneness--respect, honesty, warmth--as described above, the result is healthy, positive relationships in the classroom (not only teacher to child, but also child to child). Indeed, fostering good relationships is a planned-for structure in most developmental-interaction schools and classrooms. Marshall describes the results of her developing an Integrated Day classroom for a group of elementary school children she was teaching in England:

Perhaps the greatest result of all was in the new teacher-child relationship. I had learned to respect the intelligence, integrity, creativity, and capacity for deep thought and hard work latent somewhere in every child; they had learned that I differed from them only in years and experience, and that I, as an ordinary human being, loved and respected them; I expected payment in kind. Conversation and discussion became one of our chief delights, and, above all, we learned to laugh together. (1966, p. 76)

Raywid (1984b) notes several results of the expression of the quality of Humaneness by teachers in optional nontraditional secondary schools. She says that teaching in these developmentally oriented schools

is more of a people process; the school environment is more personalized. There is collegiality among teachers. Because the teachers are responsive to the concerns of parents and students, a cohesiveness develops among them all. The teachers understand the school as a social system.

Ideas Related to Children and the Process of Learning

Bussis and Chittenden (1970) discerned another major characteristic of teachers in their study of Integrated Day or developmental-interaction classrooms. They saw that these teachers have a particular knowledge and understanding of children and how they learn. Indeed, several analysts of teacher characteristics in developmental-interaction schools have noted that a particular belief system underlies their teaching practices. These insights and beliefs constitute an internal frame of reference, which each teacher brings to the classroom and which influences his or her teaching practices. Bussis and Chittenden (1970) called this teacher characteristic Ideas Related to Children and the Process of Learning. This is one aspect of teaching that Spodek (1975) called a deep structure (beliefs), as contrasted with surface structure (observable behavior). Spodek says it may be easier to understand developmental-interaction approaches to teaching if we think of them in terms of structure.

The basic structures or concepts of how children learn, of how they think and feel and grow, are derived from the study of developmental and cognitive psychology. Modern learning theory has had a long philosophical and historical evolution. Indeed, today's understanding of how children learn has been evolving for several hundred years and in many

parts of the world. Led by such outstanding educators and researchers as Comenius (1636/1963), Rousseau (1762/1963), Pestalozzi (1798/1963), Froebel (1854; see Weber, 1971), Montessori (1912/1965), Dewey (1938/1956), Isaacs (1930), and Piaget (1960), people the world over have observed and studied children in learning situations. Basic insights about children's development and learning have long been understood and accepted by both parents and teachers in many countries. The history of the evolving of this knowledge about children is beyond the scope of this paper. However, Bussis and Chittenden, having observed many teachers at work in classrooms that are developmental-interaction types, in both England and the United States, stated:

These are educators whose experiences have differed widely but who find themselves holding quite similar (though not identical) conceptions of good education. They are by no means a group of disciples. . . . The convictions they hold are not only rooted in the past but have been borne out and verified through personal experience. (1970, p. 1)

Walberg and Thomas (1971) verified many basic ideas about children and learning held by teachers in Integrated Day schools in both England and the United States by submitting their list of Indicators to a large group of evaluators. Another analyst, Barth (1971), did an extensive investigation of the teacher's rationale underlying the practices in open education classes in the United States and England. Barth also submitted his list to educators for verifying.

Barth (1971) compiled a list of 29 "assumptions" widely identified by teachers in classrooms that have a developmental approach to teaching and learning. Barth's list has been used in other research studies (Hoy & Jalovick, 1979; Traub, Weill, Fisher, & Musella, 1972; Zahorik,

1980). The present study uses a Teacher Attitude Inventory devised by Hoy and Jalovick (1979) which is based on Barth's (1971) list of beliefs about children and learning held by teachers in developmental-interaction types of schools.

Seeking Opportunities to Promote Professional Growth of the Teacher

Bussis and Chittenden discerned an attitude in teachers in schools that have a developmental-interaction approach. The teachers think of themselves as continual learners, always seeking new information. Bussis and Chittenden included this attitude as one of the eight teacher characteristics, calling it Seeking Opportunities to Promote Continuing Professional Growth (Bussis & Chittenden, 1970, p. 29). Walberg and Thomas (1971) verified this as an important characteristic of teachers in developmental-interaction schools in England and the United States. They gave indicators of this attitude in teachers.

Teachers in developmentally oriented schools or classrooms are constantly looking for new resources for their students. They investigate the community and explore the natural environment for learning opportunities. They seek a variety of new teaching materials and may also take inservice workshops. They often read widely on a broad range of subject matter, in order to keep abreast of ways to suit the curriculum to their children's interests (Barth, 1970; Brown & Precious, 1969; Hertzberg & Stone, 1971; Raywid, 1984b; Walberg & Thomas, 1971).

Teachers who continually seek professional growth usually reach out to develop support systems. This interaction with fellow teachers gives new insights into their students' learning processes (Bussis &

Chittenden, 1970; Hertzberg & Stone, 1971). Collegiality is characteristic of the teaching staff of developmentally oriented schools. They not only help each other, they are receptive to help from advisors or supervisors (Raywid, 1984a, 1984b; Bussis & Chittenden, 1970). By contrast, teachers in conventional or traditional schools often feel isolated, making theirs a lonely job, fraught with frustrations (Goodlad, 1982; Lortie, 1975).

Communication with the parents of their students is considered important to teachers in developmentally oriented schools (Bussis & Chittenden, 1970; Walberg & Thomas, 1971). Such teachers consider the values and expectations of parents and try to understand the ethnic and cultural background of the students and their parents (Raywid, 1984b).

Bussis and Chittenden found that both professional and personal growth are considered important to teachers in developmental-interaction schools. Thus, teachers also pursue their own new interests, whether it is craft-like weaving, or learning to use computers, or to speak conversational Spanish for a trip. Bussis and Chittenden say, "It is assumed that the adult who continues to grow personally is an adult who exemplifies what she hopes to promote in children" (1970, p. 43). As in the classroom, it is the process of learning that is the important thing.

The Self-Perception of the Teacher

There are certain significant attitudes that the teacher in the developmentally oriented school evidences. These attitudes relate to a way of perceiving himself or herself as a person and as a teacher.

Although not easy to observe, these attitudes are a part of the teacher's internal frame of reference (Walberg & Thomas, 1971). This attitude influences the way the teacher acts in the classroom; it can be considered one of the deep structures in teaching (Spodek, 1975).

The teacher who structures a developmental-interaction type of classroom does not see himself or herself as one who knows everything and imparts knowledge to children. Rather, he or she has a zest for learning and is an investigator with a "let's find out" attitude (Barth, 1972; Marshall, 1966; Rathbone, 1971).

The continual-learner attitude applies not only to the subject matter, but also to learning more about the students, their strengths and needs, their talents and interests, the way they see the world.

Rugg and Shumaker comment on this:

The artist-teacher is a student--a student of both the child and society. She is a student of the child in the complete sense, a student of his creative capacities, his emotional adjustments, his social adaptations, his intelligence, and his capacity to learn. (1938, p. 322)

Raywid (1984b) says that teachers in developmentally oriented schools are deeply committed to meeting the needs of all students and varying their teaching methods to do so. By contrast, in traditional schools, if the student cannot learn by the school system's official approach, the student is considered a failure (Barth, 1972).

The teacher in the informal, developmentally oriented classroom is secure, considering himself or herself capable of responding to children's needs, moment by moment as they arise. Such a teacher has confidence that he or she has the ability to discern and solve problems. This teacher is sensitive to children's needs, their feeling and

thinking, and warm in the ability to give and receive affection (Barth, 1970; Brown & Precious, 1969; Rathbone, 1971). This secure teacher has no need to dominate. He or she feels comfortable about letting students move about the room with purpose, working on their learning projects. The teacher trusts children and they trust him or her (Barth, 1970). The teacher in the developmental-interaction school also is confident that children can learn with the methods of the informally structured classroom (Featherstone, 1970).

Many analysts comment that the teacher in the developmentally oriented classroom is secure enough to express his or her own feelings honestly in the classroom. He or she is "a complete, fully responding human being" (Rathbone, 1971, p. 125). The teacher knows and admits that he or she has both strengths and failings. He or she can be happy, tired, upset, loving in the classroom. Barth comments on how the teachers in formal schools are encouraged to be themselves:

In a very real sense, the learning environment of any classroom is an extension of the personality of the teacher. Consequently, the teacher's personal qualities must be a central concern of anyone wishing to affect children's learning. Whatever else the teacher in the open classroom does, it is vital that he know himself and be himself, for only through encounters with real persons will children learn to know and be themselves. (1970, p. 65)

The teacher in the informal or developmental-interaction classroom sees himself or herself as a part of the teaching-learning process. It is not expected that all children will fit into the same mold or have the same prescriptions for learning. It is understood that children can be self-directed and learn from many methods and activities, yet achieve the same traditional skills and goals in highly individualized ways. The

teacher perceives that his or her role is to tailor the various methods to fit the individual child's needs at the moment. The teacher guides, responds, aides, diagnoses, intervenes, evaluates (Walberg & Thomas, 1971). Raywid says that teachers in developmental-interaction, non-traditional schools have quite different perceptions of themselves and their roles from those of teachers in traditional schools (Raywid, 1984b). The teacher in the developmental-interaction school perceives himself or herself as having a teaching-learning partnership with students.

All of these self-perceptions of the teacher influences the way he or she behaves in the classroom. The importance of this particular characteristic, called by Bussis and Chittenden (1970) the Self Perception of the Teacher, is highlighted in Gardner and Cass's statement:

A teacher cannot make much headway in understanding others or in helping others to understand themselves unless he is endeavoring to understand himself. If he is not engaged in this endeavor, he will continue to see those whom he teaches through the bias and distortions of his own unrecognized needs, fears, desires, anxieties, hostile impulses, and so on. The process of gaining knowledge of self . . . is something in which he himself must be involved. (Gardner & Cass, 1965, p. 11)

Summary: Use of the Eight Characteristics in the Present Study

As stated previously, the above eight characteristics and roles of teachers in developmentally oriented schools, as identified by Bussis and Chittenden (1970) and described by other analysts, are used as a conceptual framework for describing the Interdisciplinary Program for teacher education at the University of Massachusetts. This study includes an examination of both the professional preparation program and the present

classroom teaching of a sample of its graduates. The plans and procedures for doing this research study are given in Chapter 3, entitled "Research Design and Methods".

Needs in Teacher Preparation for Developmental Approaches to Teaching

Conventional courses of study in teacher preparation do not fit what we know today about how teachers learn. Their learning to teach comes from many sources; college or university teacher training is only one of these sources, and often not the most significant, say experienced teachers (Feiman-Nemser, 1983; Lortie, 1975).

We have available today recent research and new knowledge about how teachers learn to teach. Accordingly, we need to create more appropriate systems for educating teachers, based on this research. Creating new teacher training programs will involve changes in two dimensions, according to Feiman-Nemser (1983). We need to change both what we think and what we do about teacher education. Indeed, changing our practices will not be effective unless we first change our thinking about two phases of teacher learning: (1) the pretraining and preservice stages (learning TO teach), and (2) the inservice stage (learning FROM teaching).

This study is concerned with what we can do in teacher education programs to more suitably prepare teachers. Therefore, we will review research and literature that focuses on (1) how teachers learn, and their socialization into the profession; (2) the particular needs of teachers who wish to learn methods based on developmental/interdisciplinary approaches that are different from the traditional;

and (3) consequent indications for change in teacher education programs intending to prepare teachers for developmental/interdisciplinary methods.

Five Stages of Teachers' Learning

Researchers and teacher educators have found that teachers learn in five stages of their careers. The way that people assume the teacher role has been called socialization. Lortie defines the term as follows: "Socialization is a subjective process--it is something that happens to people as they move through a series of structured experiences and internalize the subculture of the group" (Lortie, 1975, p. 10).

The study of the school as a subculture has led researchers to gather data about socialization from several sources and characteristics of the workplace. However, for the purposes of this study, we are informed by that body of research which deals especially with the teacher's own perspectives. In this regard, speaking of socialization and teacher careers, Lortie says that "more germane data lie in the experiences of those who have undergone the process" (Lortie, 1975, p. 61). Therefore, Lortie and others have interviewed experienced teachers and gathered data about how teachers view their learning in the different stages of their careers.

This study is concerned especially with the first two stages; however, we list below all five stages as identified by researchers and teacher educators:

Stage I: The Pretraining Stage, or Anticipatory
 Socialization: The teacher's own childhood
 and youth experiences as a learner in
 school.

- Stage II: The Preservice Stage, or formal education programs and socialization into the profession: The course of study in the college or university.
- Stage III: The Induction Stage, or the beginning teacher's learning and socialization in the first year of teaching in the school system.
- Stage IV: The Consolidation Stage, or socialization and learning in the second to fourth years of teaching.
- Stage V: The Mastery Stage, or socialization from the fifth or sixth year and on through the teacher's career. (Feiman-Nemser, 1983)

The researcher will give details about the subjects of this study, the first two stages, below.

The Pretraining Stage: Anticipatory Socialization

Are teacher education programs in colleges and universities challenging and changing the early influences on teachers? Research has shown that there is a whole level of learning to teach that is not reached by most conventional teacher education programs. It is a deep level of thinking, feeling, experiencing that influences what teachers do in classrooms, more than any conventional course or theory about teaching.

Indeed, it is only recently that anyone has become aware that the college training stage has an antecedent in learning to teach. This is the pretraining stage, which extends far back into the teacher's own childhood. Lortie (1975) has pointed out that each of us has spent 13,000 hours observing teachers in our own elementary and high school experience, before we ever got to the teacher training courses in

college. Lortie has collected interview data in which experienced teachers recalled the influence of their own early teachers. The evidence suggests that teachers often internalize models of teaching from their own schooling, which has a powerful influence on their later teaching practices. Lortie comments that this learning about teaching in childhood and youth "is intuitive and imitative, rather than explicit and analytical; it is based on individual personalities rather than 'pedagogical principles'" (1975, p. 62).

Other research has pursued the idea that teachers are shaped by their own childhoods. Wright and Tuska's (1968) research, applying psychoanalytic theory, shows that the decision to become a teacher is a way of imitating significant adults (both parents and teachers) in one's youth. Furthermore, many teachers consciously identify with a teacher they had as children (Wright, 1959). Insight into this process is found in the dramatic play of children. They often "play school", imitating the speech and action of their teachers. Stephens (1969) maintains that these early experiences combine with a sense of mission in those who subsequently decide to become teachers, thus creating a more powerful influence than any later formal course in teacher education.

Several analysts have found that conventional formal teacher training programs are not powerful enough to either challenge or change the childhood influences on prospective teachers. The danger is that teachers may resort to simply doing what their own teachers did in classrooms. This tendency contributes to the unconscious perpetuation of traditional teaching practices (Feiman-Nemser, 1983; Lortie, 1975; Wright, 1959).

Furthermore, teacher educators in colleges and universities have been largely unaware of the powerful continuing influence of the childhood schooling experiences of the preservice teachers in their college classrooms. Nor do they consider the patterns of schooling and teaching that pervade the culture. Feiman-Nemser (1983) states that "most preservice programs in teacher education do not challenge these early influences that provide unexamined models of practice" (p. 30).

How can this lack in teacher education programs be remedied? Goodlad (1983) states that we must find ways to separate teachers from their early experience as students in school. Wright (1969) maintains that teachers need to be freed psychologically from the influence of their parents and former teachers, as well as the cultural assumptions about schooling. Lortie (1975) is more specific about procedures that would challenge preservice teachers' early influences. He advises that preservice teacher education courses should help college students think through their assumptions about teaching and see how they may relate to their past influences. Feiman-Nemser agrees that we need to find specific ways to "modify preexistent images of teachers and teaching" and "to cultivate images of the possible and the desirable" in new methods of teaching the young (1983, p. 8). These remedies must take place in the professional courses given in the preservice stage of teacher education; at least, such self-searching should begin while prospective teachers are still in college.

The Preservice Stage of Socialization:
Learning to Teach in a College or
University Teacher Education Program

The second stage of a teacher's career is the time spent in a pre-service teacher education program in a college or university. Three phases of study are usually required in preparatory programs: (1) in the Freshman and Sophomore years, prerequisite courses such as foundational or introductory courses and psychology courses; (2) in the Junior and/or Senior years, professional courses in teaching methodology, sometimes with a prepracticum in classrooms; and (3) in the Senior year, student teaching (a practicum or internship in local schools).

Most people assume that such a formal course of study is where learning to teach takes place. However, when questioned in research studies, many experienced teachers have reported that their formal courses in teacher training programs have had little value in their later teaching careers. They say that their methods courses were too theoretical, not practical, and that the only valuable aspect of their course of study was the student teaching experience (Feiman-Nemser, 1983; Lortie, 1975; Stephens, 1969). Several analysts have noted that changes are needed in order for teacher education programs to better prepare teachers for their needs in developmental/interdisciplinary approaches to teaching, as contrasted with traditional approaches.

Need to relate methods courses to prerequisite courses. The foundational courses in psychology, child development and human development, and the history and philosophy of education have considerable importance for building each beginning teacher's theoretical basis for modern, developmental-interaction approaches to teaching and learning.

Yet, Raywid (1984b) says that these needs of teachers are not being met by today's conventional courses of study for preservice teachers.

Child development courses are required of all prospective teachers. Raywid (1984b) says that these early courses (Freshman and Sophomore years) are seldom adequately related to the later courses in teaching methodology and curriculum (Junior and Senior years). Yet, since the days of John Dewey's own school at the University of Michigan in 1896, modern methods of teaching have been designed to meet the needs of children as they progressed through observed stages of development revealed in the new psychology called "child development" (Wirth, 1966). What we know today about the way normal children develop and learn necessitates methods of teaching that are different from the traditional. Yet many teachers still use traditional methods.

Teachers who employ developmental/interdisciplinary approaches to teaching and learning evidence certain attitudes and understandings. They have a particular interest and insight into the behavior and attitudes of young people. There is a concern for the whole development of the student as a person--his or her emotional well-being, social relationships, healthy physical development, as well as his or her intellectual and academic progress. These teachers need a working knowledge of the psychology known as child development--the stages and characteristics of human development, as well as the diverse styles of normal individual learning and growing (Barth, 1972; Raywid, 1984b; Walberg & Thomas, 1971). However, our conventional courses of study for preservice teachers will require revision in order to meet these needs (Raywid, 1984b).

In addition, teachers need a specific understanding of the relationship between the characteristics of a student's developmental stages and the teaching methodologies that are suitable for fostering a student's optimal learning and growth. Usually, methods courses do not bring this out. It is assumed by professors that student teachers will be able to apply earlier psychology course content to their later classroom encounters with the learning and behavior of children. Raywid (1984b) says that "the prospective teacher is left to sift, borrow, lift, and assemble as needed--a challenge too epistemologically intricate to leave to those least able to accomplish it" (p. 21).

The same thing applies to educational psychology courses. Conventional prerequisite courses in educational psychology do not match what is known today about either child development or students' different learning styles and types of intelligence (Raywid, 1984b).

In today's developmentally oriented classrooms, teachers frequently have to adjust their methods to meet the differing individual needs and learning styles of students. Raywid states that conventional courses in educational psychology have not served this purpose. She states that "many generations of teachers appear to have been sorely misled by the generalizations about learning reported in educational psychology textbooks." She attributes to "psychology as a social science" a widespread attitude found in many conventional schools today, "the prevalent current assumption that there is 'one best way' of performing instructional as well as other teaching tasks" and that this way applies to all students (1984b, p. 16).

It is not simply a matter of random individuals who differ from the norm. Many students learn in distinct styles:

A number of systematic differences among groups of students have been discovered--e.g., wholistic and analytical learners; audial, visual, and kinesthetic learners; learners dependent on high structure and direction, and others dependent on low. (Raywid, 1984b, p. 16)

Teachers need to study these different styles of learning, as well as ways of adjusting and choosing their teaching methods according to each child's style and needs.

Educational psychology courses also need to include a broader interpretation of intelligence than that given in the past. Traditional school curricula are organized largely to foster two kinds of intelligence: linguistic and mathematical/logical. However, seven kinds of intelligence have been well described and identified by Gardner in his book Frames of Mind: The Theory of Multiple Intelligence (1983).

These are not merely talents; they are distinctly different ways of thinking, knowing, perceiving, expressing ideas--ways of being in the world. Therefore, it follows that they require attention to different ways of learning and teaching. The seven kinds of intelligence identified by Gardner are: musical, linguistic, spatial, bodily-kinesthetic, logical-mathematical, and two types of personal intelligence (interpersonal and intrapersonal human abilities). Recognition of these multiple intelligences, as equally valid and widely predominant in many individuals, calls for considerable revision of our educational methodology and school programming.

There is also a need to relate methods courses to the history and philosophy of education. In the 1960s, the teacher certification

requirements were changed in most states and there is no longer a demand to have full courses in the history and philosophy of education for prospective teachers. The belief that these studies were not important for beginning teachers caused them to be relegated to a small part of a general course known as "Introduction to Education".

Bartos and Souter (1982) did a survey of introductory or foundational courses in 46 colleges and universities in the United States. The majority crammed all topics relating to the societal foundations of education into one course. This one "Introduction to Education" course covered such diverse topics as: certification requirements, the administrative structure of the school, special education, comparative education, preschool education, adult education, futuristic education, social/cultural aspects of education, etc. The history of education was dismissed in 13% of the course time, while the philosophy of education took up only 11% of the course time.

We now have a generation of teachers who know nothing about the important historical unfoldment of developmental-interaction methodology in education. Indeed, for 350 years, since the days of Comenius (1636/1963), educators in many countries have established schools with methodologies based on observations of how children actually develop and learn. Yet, in the United States today, our teacher/graduates know little of this important historical support for developmental-interaction methodologies.

By contrast, teachers in England who employ developmental-interaction methods are well aware of the strong historical, philosophical, and psychological underpinnings of developmental approaches to

learning. They can defend and explain their teaching methodology with the support of 350 years of history (Weber, 1972).

We desperately need this perspective in American schools today. Instead, we have in conventional schools across the country what Silberman (1970), in his book Crisis in the Classroom, has called "mindlessness . . . the failure of people at every level to ask why they are doing what they are doing or to inquire into the consequences" (p. 36). College students are capable of thinking about the history and philosophy of education, as well as the psychology of child development--of thinking through the whys underlying practices in classrooms. But do methods courses ask "Why are we doing this?"

In summary, all these recommendations point to a revision of the prerequisite courses in teacher education programs. The later methods courses need to more specifically relate to the information gleaned from the earlier courses. Indeed, the understanding of children and the purposes of education, found in the prerequisite courses, form the basis for several of the teacher characteristics and roles identified by Bussis and Chittenden (1970): Provisioning, Instruction, Ideas Relating to Children and the Process of Learning, and the Self Perception of the Teacher. Furthermore, Raywid (1984b) states that teachers today need to be more adequately prepared to provide for the diverse abilities and needs of children in our pluralistic society. She says that college students of education need a broader and deeper study than is usually given them. It is possible that they would find such courses more relevant and useful in their later teaching.

Need for changes in professional methods courses. When we consider methods courses, we should first be aware of the history of research on the "methods" approach to teaching. For approximately 50 years (the 1920s through the 1960s), educators in the United States have assumed that, through research, we could find the best methods of teaching and then apply them to all children. However, reviews of this body of research have shown that there are no best methods of teaching (Elena, Stevenson, & Webb, 1961; Tyack, 1971).

Then, in the 1960s, the emphasis shifted to research on the competencies of teachers. It was assumed that successful teachers' behavior indicated certain competencies--and that, identifying these, we could teach all teachers to behave in this way. But the lists of identified competencies became so long that no one teacher could have them all (Combs, Blume, Newman, & Wass, 1974).

These mechanistic views of teaching--as either methods or competencies and behaviors--have influenced the way teacher education programs have been structured. Customarily, colleges have offered a group of "methods" courses, and then at the end of these courses, there is an opportunity to "practice teach"--practice these methods in a classroom of children. This plan has proven unsuccessful; many teachers have reported, in research studies, that their methods courses were irrelevant to their future work as teachers (Feiman-Nemser, 1983; Lortie, 1975). Clearly, a different plan for teacher education is needed.

1. Teaching as a Helping Profession. The quest for the answer to "What is a good teacher?" has led a group of perceptual psychologists at the University of Florida to look at teaching as one of the helping

professions. Combs and his associates have done research on six helping professions: teaching, counseling, social work, pastoral care, nursing, psychotherapy. One common trait has been discovered: ". . . The common characteristic in all these was instantaneous response" to the client. "Professional helpers must be thinking, problem-solving people; the primary tool with which they work is themselves" (Gooding, 1969, p. 29). Each helper perceives the needs of his or her client, then combines his or her own perceptions, understanding, knowledge, and methods in his or her own way to respond to the unique situation and needs of the individual client, as he or she sees them.

Combs and his associates call this ability "self as instrument" (1974, p. 10). As each child is unique, so is each teacher unique as an individual person. Each has a personal approach to teaching. Combs says that this fact is another explanation of why the search for the best method has been unsuccessful for 50 years.

A teacher's behavior, then, is the result of the way he or she perceives the situation or the individual student's thinking and needs at the moment. In response, many different behaviors could be employed. Behavior or method, then, is a result, a symptom. The cause of behavior is the person's perception. His or her perception comes from his or her input of beliefs, values, purposes, attitudes. It is a teacher's beliefs that determine his or her choice of action, behavior, method (Combs et al., 1974).

In their observations of teachers with a developmental-interaction approach in classrooms in seven towns from Texas to Vermont, Bussis and Chittenden (1970) corroborated Combs's (1965) self-as-instrument view of

teaching. Describing one role of the teacher as "the guidance and extension of learning . . . instructing children," Bussis and Chittenden (1970) state:

There are few categorical statements that can be made about when and how a teacher should actively intervene to divert or redirect the course of some activity or to extend it in a meaningful way. Although teachers feel a great need for guidelines in this area, it is undoubtedly the most 'iffy' and 'it depends' topic of all. In any given instance, it is not likely that even the most experienced teachers would find themselves in total agreement about what should be done. . . . About the only thing that can be said . . . is that the teacher is viewed primarily as a resource person whose job it is to encourage and influence (in whatever way--asking questions, supplying another material, giving information) the direction and growth of learning activity. (1970, p. 40)

Walberg and Thomas (1971) point out the interrelatedness of the teacher's roles of Diagnosis, Evaluation, and Instruction as guidance and extension of learning. They speak of "the importance of the instructional step of constant and on-the-spot diagnosing" and explain that "a major aspect of the teacher's job is to elicit information about the development of her children from day to day," and then "respond to them individually based on what she learns" (1971, p. 18).

Walberg and Thomas (1971) list 115 direct quotes from the literature defining and describing these interrelated roles of the teacher, Diagnosis, Evaluation, Instruction. The descriptions fit Combs' (1965) self-as-instrument view of teaching. Hawkins (1967) describes this well, when writing about the developmental-interaction classroom:

The function of the teacher, then, is to respond diagnostically and helpfully to a child's behavior, to make what he considers to be an appropriate response, a response which the child needs to complete the process he's engaged in at a given moment. (1967, p. 4)

How, then, can those responsible for teacher education programs be sure that a prospective teacher will learn to give an immediate response to each child that will be helpful and positive? Methods courses need to focus on helping the individual teacher examine and develop his or her underlying beliefs about himself or herself, about children, and about society and the world we live in. Combs and his associates (1974) state that "if behavior is a function of perception, it follows that teacher education must concern itself with the inner life of its students. Simple exposure to subject matter or teaching methods is not enough" (p. 16).

In a series of research studies, Combs and his associates (1974) identified the perceptual activity of good teachers, as opposed to teachers identified by their principals as poor teachers. Five broad areas of perception were noted, which should be the concern of teacher education programs. Combs and his associates state:

As a consequence of these studies, we have come to believe that the following major areas are crucial in the perceptual organization of a good teacher:

1. Rich, extensive, and available perceptions about his subject field.
 2. Accurate perceptions about what people are like.
 3. Perceptions of self leading to adequacy.
 4. Accurate perceptions about the purpose and process of learning.
 5. Personal perceptions about appropriate methods for carrying out his purposes.
- (1974, p. 22)

Furthermore, since good teaching is based on personal perceptions, courses for learning to teach must have a different format from the usual college lecture course. "Good teaching . . . is a problem of personal discovery, of learning to use one's self as instrument"

(Combs et al., 1974, p. 29). Therefore, a new approach is needed in methods courses, a design for learning the practice of a profession. This should be distinctly different from the format of the usual college course designed for learning academic content, such as History or English Literature (Combs et al., 1974; Feiman-Nemser, 1983).

2. Learning From Experience. Experienced teachers have reported, in many research studies, that the customary professional methods courses have made little impression on them; indeed, they found them irrelevant to their future work in classrooms. Lortie (1975) and others, reporting this research, have found that learning how to teach comes from three other major sources: (a) the anticipatory socialization stage in the teacher's own youth (i.e., the experience of having been a student in school and having watched one's own teachers model teaching practices for 13,000 hours of one's life, as discussed above); (b) the student teaching or practicum in the preservice stage of socialization in college (i.e., the experience of practice teaching); and (c) the learning-on-the-job stages of socialization after graduation from college [i.e., the experience of teaching itself] (Feiman-Nemser, 1983; Lortie, 1975).

All three of the above are experiential ways of learning. By their own reports, we see that veteran teachers have learned to teach from two types of activities: from participating in active, hands-on experiences; and from observing early models of teaching.

By contrast, the same teachers in these research studies describe their educational methodology courses as theory which is not practical (Bunker, 1971; Feiman-Nemser, 1983; Lortie, 1975). Feiman-Nemser (1983)

states that "formal arrangements for teacher education and training do not fit with what is known about how teachers learn to teach and how teachers get better at teaching over time" (p. 2).

In formal, conventional methods courses, the professors have customarily lectured about teaching techniques and methods. The college students listen to the lectures and then go out and teach the way they were taught--the methods they saw modeled long ago, and the kind of learning they themselves experienced. "Teachers teach the way they have been taught--not the way they have been taught to teach" (Combs et al., 1974, p. 147). How can we separate teachers from their past experiences and impressions as students in school? Goodlad (1982) says this is necessary, if we are to establish better teaching practices than those found in many conventional schools today.

It is evident, from the research reports cited above, that significant learning about how to teach has all been experiential learning. Wouldn't it follow, then, that we should attempt to make teacher education methods courses more experiential, more active? In other words, preservice teachers in methods courses need to do the science experiences, manipulate the mathematics materials, do some art projects, plan and implement different types of social studies units, plan and go on field trips, read the children's novels, write their own stories. They need to experience learning-by-doing in just the same way that, later, children in their classes should experience it. Piaget's research on the cognitive development of children showed us the importance of active, hands-on learning for children. He found that children up to the age of 12 years cannot understand abstract ideas unless they first have concrete

experience to illustrate the abstract idea; experience gives meaning, and learning becomes personal and permanent (Ginsberg & Opper, 1979). Although learning-by-doing as a preferred way for children to learn was discovered by Dewey and his associates early in this century (Wirth, 1966), we have had a hard time establishing and maintaining this methodology in the mainstream of American schools.

Raywid (1984b) points out a possible reason for the failure of teachers to understand the importance of learning-by-doing, of experiential learning so essential to children's understanding. She says that teachers, in their own schooling, have only been taught to learn from books and symbols. Therefore, they actually do not know how to learn from materials and experience. So, in college methods courses, they themselves must first learn how to learn-by-doing, before they will be able to teach children this way in developmental-interaction classrooms. Teachers need to understand, to feel the process and structure of experiential learning, which is different from book-learning.

3. Modeling by Professors. If professors could redesign their college methods courses to have active, hands-on learning projects for prospective teachers, another result would follow. This would give professors a marvelous opportunity to model the teaching/learning methods they advocate. Actually, if college courses in methods could model the methods of the developmental-interaction classroom, and prospective teachers learn this way, this may serve to counteract the 13,000 hours of modeling of more conventional methods from their early schooling. It has been largely this early modeling and experience as students in school that has influenced beginning teachers to ignore their

college training and teach the way they were taught (Lortie, 1975; Stephens, 1969; Wright, 1959).

Considering the strong impact that early modeling from their own schooling has had on teachers, as shown by the researcher cited above, it is surprising that few teacher education programs today are based on positive types of modeling of developmental-interaction methods by the professors. Roose (1985) did a study of modeling by professors in the Interdisciplinary Program at the University of Massachusetts (the program which is also the subject of the present study). This program is strongly based on modeling by the professors. Roose states that "no other undergraduate preservice teacher education programs based on modeling could be found in the literature" (1985, p. 45). If such programs exist, they apparently are not described in written sources. Roose did, however, find descriptions of other types of programs based on modeling--a counselor training program (Duhl, 1983), an inservice teacher program (Jones, 1975), and a post-B.A. High School teacher education program (Dow, 1979).

In addition to the need for more experiential learning for teachers in methods courses, there is also a need for more experience with real children in real classrooms. This should be provided while they are taking the methods courses. College students will begin to find their own personal approach to methods if they have a real need to try some out while they are being introduced to methods. Perceptual psychologists have found that people learn best what they have a real need to learn (Combs et al., 1974). Then it is possible that teachers may no longer say that their methods courses were irrelevant to their real classrooms later.

4. The Structure of Curriculum: Interdisciplinary. In addition to more experiential learning and better modeling by professors, as discussed above, other needs of teachers preparing for developmental-interaction classrooms have been noted in the literature.

Raywid says that "the traditionalist teacher has quite a different picture of the world and set of attitudes toward its population" than the developmental-interaction classroom teacher (Raywid, 1984b, p. 14). The way teachers view the world influences the way they view curriculum. Combs and his associates state that a teacher's view of the world influences his or her personal purposes in teaching (Combs et al., 1974).

Teachers in developmental-interaction classrooms see the curriculum areas (reading, writing, social studies, art, science, mathematics) the way they happen in the real world--as interrelated with each other. Therefore, such teachers integrate these curriculum subjects into projects and activities for learning. This is an interdisciplinary approach to curriculum. By contrast, conventional teachers present each subject alone, in unrelated sequence through the day.

Prospective teachers preparing for developmental-interaction classrooms need methods courses in which they plan and implement (experience) interdisciplinary curriculum projects, activities and units of study. The integration of curriculum, in activities planned around a central theme, is a strong teaching strategy in developmental-interaction schools on all levels today, including both elementary and high schools (Raywid, 1984b). Indeed, in some magnet schools the entire school is organized around themes, such as the new magnet high school in Boston (Massachusetts) that emphasizes international diplomacy, languages, and

government. Boston's "zoo school" is an elementary magnet school emphasizing science and ecology and collaborating with Boston's science museum and zoological park (Boston Public School System, 1983).

5. Sources of Curriculum. Prospective teachers aspiring to teach in developmental-interaction classrooms need to learn how to find curriculum content in several sources. Whereas traditional teachers find their curriculum in textbooks and teachers' guides, developmentally oriented teachers look to additional sources. They find curriculum in materials and in the community (Raywid, 1984b). They need to learn how to plan and conduct field trips, as well as follow-up activities. They need to experience using appropriate materials for investigating basic concepts in each curriculum area. Learning-by-doing requires a wealth of materials to "do" with, and seeking out a wide variety of materials is an important part of the teacher's job. Also, teachers need to learn how to organize the classroom space and time for the investigation and use of materials (the learning center or workshop classroom). Indeed, teachers need to experience their own learning in this type of classroom setting--to feel what it is like to learn in this classroom structure rather than in the desks-in-rows structure. Then teachers will feel comfortable when allowing children to learn in workshop classrooms. How could we give them these experiences?

In college, methods courses could be organized around activities and learning projects, taught in a workshop setting, or learning-center type of classroom structure. Then aspiring teachers would grow into the understanding of developmental-interaction learning and teaching strategies--through experiencing this approach in their college methods

courses. Since teachers teach the way they were taught (Combs et al., 1974; Lortie, 1975), not as they were told to teach, they might be more able to employ these newer teaching strategies in the future and less likely to fall back on the ways they were taught as children. Indeed, organizing college courses this way, around interdisciplinary curriculum projects and active learning, might be another way of separating teachers from their past experiences as children in school, as Goodlad (1983) says we must do.

6. Instructional Methods. Preservice teachers being prepared for developmental-interaction classrooms need to learn and experience a variety of methods of instruction. The self-as-instrument approach to teaching places a different emphasis on methods--the need to help each prospective teacher find the methods best suited to him or her. The methods must fit the kind of person the teacher is. Each teacher needs to have lots of methods so that he or she may vary them to meet the needs of different students and situations. Indeed, the finding of each student teacher's own best methods is a process of discovery (Combs et al., 1974).

For instance, students aspiring to teach in developmental-interaction classrooms need to learn a variety of ways to teach content in order to reach students with different learning styles. They need to learn many ways to organize and group students for learning--as individuals, in small groups, in large groups--and when these are appropriate (Raywid, 1984b). They need to understand the value of peer instruction and cooperative learning in small groups, and how to organize children for this kind of learning [which may also happen spontaneously

in developmental-interaction classrooms] (Johnson & Johnson, 1975).

Prospective teachers need to know when it is appropriate to use indirect instruction (projects, activities) and direct instruction (skills, etc.). They need to know what the basic skills are in each curriculum area, and how to give them relevance, meaning and purpose through activities and projects. The particular kind of individually-focused teaching and learning in developmental-interaction classrooms was identified by Bussis and Chittenden (1970) as Instruction: The Guidance and Extension of Learning, one of the eight characteristics and roles of teachers that are the concern of the present study.

7. Diagnosis and Evaluation Methods. The chief tool for the diagnosis of children's progress in developmental-interaction classrooms is the teacher's own professional observation of the child, which gives a more thorough picture of the child's growth than the standardized tests of the conventional school. In order to be able to diagnose children's needs as individuals, prospective teachers need to learn specific techniques of observation in the methods courses (Raywid, 1984b). In the accompanying prepracticum, prospective teachers need the experience of observing and recording the behavior and accomplishments of real children in real classrooms over a period of time. There should be guidance from professors in learning these diagnostic techniques. Such diagnostic observations should be related by the professors of methods courses to the college student's earlier courses in child development. Combs and his colleagues (1974) found that good teachers have reliable perceptions about people. They state that "teachers need a clear and

consistent frame of reference about people and their behavior to serve as a guide in dealing with them" (1974, p. 24). They say that the development of this frame of reference is based on observations; its development is "a prime function of the teacher preparation program" (1974, p. 24). Bussis and Chittenden (1970) designated Diagnosing of Learning Events as one of the eight characteristics and roles of teachers in developmentally oriented classrooms; such teachers give a great deal of time and attention to observational diagnosis.

The particular kinds of Evaluation done in developmental-interaction classrooms was also noted by Bussis and Chittenden (1970) as one of the eight characteristics and roles of teachers. Prospective teachers need to be taught in their methods courses how to do a broader and deeper type of evaluation than the traditional teacher (who relies chiefly on standardized tests). Only certain kinds of skills are measurable; other important learnings are not measurable but can be described. Descriptions of a child's progress are important because developmentally oriented teachers are concerned with all aspects of a child's growth and learning--emotional, social, moral, physical, and intellectual. Hence, other sorts of evaluation methods are needed than tests (Barth, 1972; Raywid, 1984b).

Raywid (1984b) says that methods courses need to clarify for the teacher two kinds of evaluation--"formative and summative" (p. 18). Teachers need to learn what can be quantified or measured and what "can only be evaluated by qualitative methods" (1984b, p. 18), such as descriptions. In developmental-interaction classrooms, the purpose of evaluation is to plan further for the child's progress, not to judge

him or her in comparison with others. As much value is given to process as to product, and this is reflected in the methods of evaluation used, such as narrative descriptions of children's progress, strengths, achievements, individual characteristics and needs. This relates to the perceptions of teachers regarding the purposes and processes of learning. Combs et al. (1974) say that teacher education programs must help teachers explore their own personal purposes and understand other people's purposes in education.

8. Atmosphere, Climate, Collegiality. There is another aspect of developmental-interaction schools which is distinctly different from traditional schools. School climate is considered important in developmentally oriented schools, and this is closely related to a spirit of cooperation and collegiality among the teachers. They must know how to build a sense of community among teachers, students, and parents, both in their classrooms and in the school as a whole (Raywid, 1984b).

By contrast, in traditional schools teachers are frequently isolated in their classrooms. This widespread isolation has perpetuated traditional methods of teaching (Feiman-Nemser, 1983). It reflects the way the teachers themselves were taught as children. They learned to study alone, stay at their desks and not talk to others in the class. Collaboration has not been the pattern in most teacher's own early schooling. Indeed, helping another student was often considered cheating.

How are methods courses to change this pattern of isolation? How can we help prospective teachers learn collegiality, cooperation and

collaboration? Raywid says that, lacking this learning in their own school experience, teacher "candidates must learn peer cooperation as college students if they are to be able to work productively with fellow teachers in optional schools" (1984b, p. 20, emphasis hers). In order to teach collaboration and collegiality, Raywid says that many of the methods courses should call for "repeated projects, assignments, activities, reports which involve cooperative endeavor" (1984b, p. 20) among the preservice teachers in the teacher education program. Combs and his associates speak of the importance of establishing a positive atmosphere for learning in college classrooms. There should be a non-threatening climate, where prospective teachers are encouraged and supported as they explore ideas, work together on curriculum projects, express their creativity and individuality. Cooperation can only occur where the individual feels accepted and appreciated. In developing a positive, accepting atmosphere for learning in college methods courses, we must remember that "learning is a function of the individual's personal exploration and discovery of meaning" (Combs et al., 1974, p. 20).

9. Decision Making. Many assignments in methods courses should be broad enough to allow the college student (preservice teacher) to do his or her own decision making. Bussis and Chittenden (1970) were the first to note that a special kind of decision making takes place in developmental-interaction classrooms. This is shared decision making, by both the teacher and students. Spodek (1975) calls this a new kind of decision making in schools. Prospective teachers need to experience this kind of sharing in group planning in their methods courses, as a

model for their later teaching and sharing of decisions with their children in school.

There are also decisions about teaching strategies and the ever-changing ways to help individual children at the moment they need help. Combs and his associates have pointed out that teachers act according to the way they perceive the situation at the moment. They learn to make decisions by being given real problems to find the solutions for. "People learn to be responsible by being given responsibility" (Combs et al., 1974, p. 84). Teacher education programs, therefore, should give wide choices to students and accept their personal decisions with respect. Prospective teachers need as many opportunities as possible to practice autonomous decision making as individuals in undergraduate courses and experiences in schools.

10. Individuality and Autonomy of the Teacher as a Person. For years, educators have advocated bringing out the individuality of children. But it is only recently that anyone has realized that teachers are individuals, too. Teachers are people, and each one is unique (Barth, 1980; Bussis, Chittenden, & Amarel, 1976; Combs et al., 1974; Raywid, 1984b).

In the past, people's individual teaching styles have been hidden behind the closed doors of classrooms, buried in the one-best-system structure of schools (Barth, 1980; Fantini, 1986; Tyack, 1984b). In recent years, however, researchers have seen that individual teaching styles are as valid as children's individual learning styles. While in methods courses, preservice teachers need to be given the autonomy and choices necessary to discover, develop and value their own personal

teaching styles and the methods that work best for them. They need to be supported in finding personal meaning in their approach to teaching. Also, they need to know about the different learning styles that children might have (Combs et al., 1974; Dunn & Dunn, 1974, 1978; Fantini, 1973c, 1986).

Bussis, Chittenden and Amarel (1976) point out that teaching is not a simple formula--it is not a certain act or method that will produce a certain product or skill. When a teacher diagnoses a child's learning needs, the teacher perceives the situation, makes meaning of it, and decides how to act. This is a spontaneous reaction to the situation at the moment. Combs and his associates (1974) call this "Self as Instrument". Meaning comes from one's past experience. Since each individual's experience has been different, each one's personal meaning is different. Bussis, Chittenden and Amarel (1976) say that this is another reason for the repeated results of no significant difference in research on teacher methods, behaviors, and products. Since each person's perceptions and meanings are different, this results in different outcomes being produced by different people.

We need teacher education programs that give attention to the college students' (preservice teachers') personal meanings, perceptions, and self concepts. The professors need to value and encourage the students' expression of personal meaning. As the student teachers explore their personal meanings, they should also be encouraged to try teaching methods that fit their perceptions of children's learning. Thus, professors would help students in the methods courses begin to develop and value their individual teaching styles (Bussis, Chittenden, & Amarel,

1976; Combs et al., 1974; Raywid, 1984b). This attitude of professors would encourage the development in preservice teachers of an important characteristic noted as typical of teachers in developmental/interdisciplinary classrooms by Bussis and Chittenden (1970), namely Self Perception.

11. Humaneness. Raywid says that each teacher candidate should be made to feel valued as a person, to feel that each is important as an individual. She states that teacher education programs need to "model a personalized, caring and supportive community, each of whose members count" (1984b, p. 20). Combs and his associates (1974) also point out that the college methods courses need to establish a warm and accepting atmosphere for learning, in which preservice teachers feel confident enough to explore methods and to trust themselves as adequate persons. This attitude is closely akin to the teacher characteristic called Humaneness by Bussis and Chittenden (1970). Their observation of Humaneness in developmental/interdisciplinary classrooms showed this characteristic of teachers to be chiefly comprised of three qualities: Warmth, Respect, and Honesty of Encounters.

12. The Admissions and Selection Process. The qualities of character and attitudes (such as warmth, or respect for persons, or honesty of encounters) are brought with teacher candidates to the program; they are not taught, though they may be modeled and fostered. Therefore, teacher education programs need to carefully screen candidates for admission to the professional program. Not all candidates are capable of teaching in developmental/interdisciplinary schools. Particular attention needs to be given to personal qualities needed by teachers for

developmental approaches to learning and teaching, when qualifying them for admission to a teacher preparation program (Combs et al., 1974; Feiman-Nemser, 1983).

13. Involvement with Real Children in Real Schools. The pre-practicum phase of teacher education programs needs to be modified. Teacher candidates need scheduled time for visits and observations in many excellent developmental/interdisciplinary classrooms and schools, so that they can visualize what it is possible to achieve [as differentiated from the traditional schools they attended as children] (Feiman-Nemser, 1983; Raywid, 1984b). Also, many educators think that preservice teachers need to spend more time as participant/observers in a specific children's classroom while taking the methods courses. This would create an immediate, present need to know about children's learning and appropriate methods of teaching. An opportunity to do mini-lessons with real children in real classrooms while taking the methods courses would tie in theory with practice. It would prevent the methods courses from appearing irrelevant to real teaching, which many experienced teachers have reported as the case. The perceptual psychologists tell us that people only learn what they feel a need to know. This need could be created by teacher education programs that assign more time for the pre-practicum, concurrent with the methods courses and related to the courses (Combs, et al., 1974; Feiman-Nemser, 1983).

14. College Administration Support Needed for Reforms. Both Raywid (1984b) and Combs (1965) state that, in order for teacher education institutions to revise their programs along the above lines, it is possible that considerable reorganization will be needed. It will be

necessary for college and university administrators to support the professors of education, giving them autonomy to design new programs that more adequately fit what we know today about how teachers learn. Raywid says that institutions will have to give up bureaucratic limitations and values, exchanging them for different values, in order to implement the type of teacher education program needed for the developmental/interdisciplinary schools of today.

15. Need to Address Socialization Stages in the Future. Finally, teacher candidates need to be made aware that they will go on learning from teaching, once they have graduated and are in their own classrooms (Feiman-Nemser, 1983). Teacher education programs can only get teachers off to a good start, point them in the right direction (Combs, et al., 1974). Yet, there is a persistent belief in our society that people learn to teach in college. Preservice teachers need to be helped to understand that research has shown that there are five stages of learning to teach, three of which are on the job [learning from teaching] (Feiman-Nemser, 1983). This attitude might help to soften the usual trauma of the first year of teaching, and more might stay on to learn through to the third stage of master teacher. Indeed, the attitude of the teacher as a continuous learner has been outstanding in teachers with a developmental-interaction approach to teaching and learning. Bussis and Chittenden (1970) noticed this, designating Seeking Professional Growth as one of the eight characteristics of teachers in developmental-interaction classrooms.

Student teaching: Need for careful student teacher placement in practicum or intern classroom sites. The practicum experience, known as

student teaching, is an internship that customarily takes place when all methods course work has been completed. Many experienced teachers have reported to researchers that student teaching was the most significant part of their college preparatory program (Combs et al., 1974; Feiman-Nemser, 1983; Lortie, 1975). For this reason, there have been many research studies done on student teaching.

However, this research has shown that the student teaching experience can be either helpful or harmful in developing better-prepared teachers. For instance, research has shown that student teachers often imitate the cooperating teacher to whose classroom they are assigned (Friebus, 1977). Hoy, in a series of four research studies, has found that many student teachers are so powerfully impressed by the practicum experience that they actually adopt the attitudes and behavior associated with bureaucracy and standardization found in many of today's schools. Student teachers in such schools became more impersonal, conforming, and custodial as a result of their student teaching experience (Hoy, 1967, 1968, 1969; Hoy & Rees, 1977). Several other research studies have shown that student teachers, as a result of their practicum in today's schools, have become more utilitarian in their view of a teacher's work--keep the children orderly, busy, and cover the prescribed curriculum. However, these studies also revealed that such attitudes are in direct conflict with the stated objectives given in these same student teachers' college methods courses and teacher education programs (Iannaccone, 1963; Tabachnick, Popkewitz, & Zeichner, 1979/1980; emphasis mine).

Furthermore, research has been done on the underlying beliefs of student teachers. This research explored whether, as a result of the practicum experience, the student teachers developed increased understanding of the development of children, how they learn, and the modern methods taught in their methods courses. This research shows that the experience of student teaching simply reinforced the beliefs that the students originally held (Tabachnick, Zeichner, Densmore, Adler, & Egan, 1982). This finding supports the findings of Lortie (1975), Stevens (1969), and Wright (1959) concerning the powerful influences and perceptions teachers have retained from their early observations in their own childhood classrooms. These researchers state that these early influences are unchallenged and unchanged by today's conventional teacher education programs (both the methods courses and the student teaching).

Research has shown that the value of a student teacher's learning is influenced by the range and quality of actual classroom experience offered him or her--and whether there is an opportunity to actually practice teach. This research reveals that a student teacher's work is often confined to short-term lessons. Therefore, many student teachers become preoccupied with order and discipline, intent on keeping the children busy and quiet, and on time (Tabachnick, Popkewitz, & Zeichner, 1979/80). This experience may give student teachers a false view of success. It may mitigate against their receptivity to further learning, on the job, about teaching and its wide possibilities (Feiman-Nemser, 1983). It may prevent the future teacher's continuing exploration of the variety of teaching strategies necessary to meet the

diverse needs of students encountered in future classrooms. In other words, this type of student teaching experience (that emphasizes order, quiet, and short-term lessons) may counteract the development of an important characteristic of teachers in developmental-interaction classrooms noted by Bussis and Chittenden (1970) and called Seeking Professional Growth of the Teacher.

Indeed, there is a widespread belief that today's college or university course of study, in teacher preparation, has a liberalizing influence on future teachers. However, research has contradicted this assumption. Findings show that both the college supervisors and the seminars on student teaching frequently advise student teachers to accept and conform to the current practices in the classrooms and public schools to which they are assigned in their practicum or student teaching experience (Feiman-Nemser, 1983). This attitude, however, perpetuates conventional and traditional teaching practices.

Feiman-Nemser (1983) also points out that there is no provision in most conventional teacher education programs for a real examination by college students of what the student teaching experience means to them. They need to articulate their perceptions of their beginning teaching efforts and have support in exploring methods. Lacking this, mere survival strategies may be perpetuated, rather than seen as first steps, to be improved upon.

This points to the need to examine the role of the Supervisor of Student Teaching in college programs. Since many state certification regulations require only three visits a semester by a college supervisor to a student teacher in his or her practicum classroom, there is a

serious question whether adequate and meaningful supervision is being given to many student teachers today. Also, the usual weekly seminar accompanying student teaching needs to be examined. This course could be used as an arena for student teachers to reflect on the personal meaning of the student teaching experience and to share ideas with their fellow student teachers.

Therefore, one can see certain implications in the body of research on student teaching reported above. While the experienced teacher may extol the practical aspects of student teaching, its actual value can be questioned in terms of the preparation of teachers for more developmental-interaction approaches to teaching and learning. It is clear, from the above research, that the student teacher is strongly influenced by the quality and methodology of the classroom and school in which he or she is placed for the student teaching and internship portion of his or her teacher education. The traditional classroom clearly perpetuates the school practices derived from the traditional, standardized one-best-system approach to teaching (Feiman-Nemser, 1983; Raywid, 1982b; Tyack, 1971).

If we are to more adequately prepare teachers for the non-traditional, developmental-interaction and interdisciplinary approach to teaching and learning, we must take great care to place student teachers in classrooms that are good examples of this methodology and understanding of learning and teaching. Preservice teachers need to observe both teachers' practices and children's learning in developmental classrooms. They need to be in a supportive setting for their first steps in trying developmentally oriented methods. Such student teacher placements would

"cultivate images of the possible and the desirable" (Feiman-Nemser, 1982, p. 8), or worthy models to emulate.

CHAPTER 3

RESEARCH DESIGN AND METHODS

This is a study of the relationship of a teacher education program to its graduates. The study examines the undergraduate component of the Integrated Day Program, which is the Interdisciplinary Program, in the School of Education at the University of Massachusetts at Amherst, and a sample of its graduates. This program is designed specifically to prepare teachers for classrooms that have a developmental/interdisciplinary approach to learning and teaching, as defined in Chapter 1. The study has three essential parts: (1) a survey of the graduates of a ten-year period (1977-1986); (2) an examination of the program; and (3) a follow-up study of a sample of the graduates who are now teaching in elementary classrooms.

The Survey: Choosing a Sample for This Study

The Function of the Survey

A comprehensive picture of what has happened to the graduates from the Interdisciplinary Program over a ten-year period was obtained. The professional experience of its graduates was of particular interest. A sample of graduates currently teaching in elementary classrooms could then be chosen, to be observed and interviewed for the follow-up study of the program.

Conduct and Returns of the Survey

For the survey, an alumni search located 197 students of the Interdisciplinary Program who had graduated from 1977 to 1986 with a B.A. degree from the University of Massachusetts at Amherst. Of 197 surveyed, 111 returned the survey (56.34%). Three mailings were done-- in November, 1985; March, 1986; and February, 1987.

Of the 111 respondents, 92 (82.88%) have taught school since graduation. Nineteen graduates (17.12%) were unable to find teaching jobs (due to a decline in school enrollments during that period). They went into other fields of endeavor (some related to teaching, some not).

Of the 92 respondents who have taught school since graduation, 72 (78.26%) are currently working in educational positions of some sort (such as administrative positions, as well as classroom teaching). Twenty-one graduates (21.74%) did teach from one to eight years, then moved on. The majority of these left the classroom to be married and raise a family.

Sample of This Study

The survey revealed that 72 graduates are currently working in the field of education. Of these, 12 (16.66%) are either substitute teachers or aides, still looking for full-charge teaching positions. Therefore, 60 (83.33%) now have full responsibility for an educational position, either as classroom teachers or in other positions, such as Director of a Nursery School or Reading Supervisor. Of these 60

graduates, 10 have been selected as a sample for the present study. (See Table 2 on the following page.)

This is not a random sample. These graduates were chosen for the sample with the following key factors in mind:

1. The study will examine the teaching performance of the graduates in relation to their undergraduate preparation for teaching; therefore, no teacher/graduates were chosen who have taken advanced degrees after the B.A. degree.
2. The Interdisciplinary Program prepares teachers specifically for elementary classroom teaching; therefore; only teachers currently teaching in grades one through six were chosen.
3. It was necessary to travel in order to observe and interview the teacher/graduates; therefore, the sample has to be confined to those teaching in the northeastern states.
4. Only teachers who have full charge of their classrooms were chosen; no aides were chosen for the study.
5. Four other main criteria were used to select the sample. For each teacher, consideration was given to:
 - The year they graduated (a spread over many years was sought);

TABLE 2
RESULTS OF SURVEY--CHOOSING A SAMPLE

Subject Population: 197 graduates identified, surveys mailed
111 (56.34%) graduates responded

Of the 111 Subject Population:
92 have taught in classrooms (82.88%)
19 could not find teaching jobs, did other work

Of the 92 (82.88%) that Pursued Educational Careers:
72 (78.26%) are now in education
21 (21.74%) taught 1-8 years, then went on

Of the 72 in Educational Work Now:
8 are substituting (still looking for full-charge
teaching jobs)
4 are aides
60 currently have full responsibility in a
position in some phase of education
(83.33% of those now in education jobs)

The Sample: 10 (of the 60 now in fully responsible education
positions)

The sample is not a random sample.

Criteria for choosing the sample are given in Table 3.

- The number of years they have taught
(a spread from one to nine years was found);
- The grade level they are now teaching
(every grade level from first grade to sixth grade is represented);
- The type of school setting in which they are teaching (half of the sample are in developmental-interaction types of schools, half are in traditional schools).

See Table 3 for a detailed analysis of the above key factors in the choice of the 10 (out of the 60 who are now in positions in education) in the sample of this study.

Sources of Data

Sources of Data for the Course of Study

For the examination of the course of study known as the Interdisciplinary Program, three sources of data will be used: documentation in the files, notes of the researcher as participant-observer, and interviewing and feedback from professors.

Documentation in the files. The files to be examined are maintained by the Directors of the Interdisciplinary Program at their offices in Room 224 at the School of Education located in Furcolo Hall at the University of Massachusetts at Amherst. The Directors of the program assured the researcher that she would have access to these files. The researcher's sampling procedure was to read the files and extract

TABLE 3
KEY FACTORS IN SAMPLE CHOICE

<u>YEAR GRADUATED</u>						<u>NUMBER OF YEARS TAUGHT</u>				
<u>Year</u>	<u>Number of Teachers</u>					<u>Years</u>	<u>Number of Teachers</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
1977	X					1				X
1978	X					2		X		
1979	X					3	X			
1983	X					4	X			
1985					X	6	X			
1986	X					9	X			

<u>GRADE LEVEL NOW TEACHING</u>						<u>TYPE OF SCHOOL CONTEXT</u>	
<u>Grade</u>	<u>Number of Teachers</u>						
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>		
1	X					In Traditional Schools -- 5 Teachers	
1/2	X					In Developmentally-Oriented Schools -- 5 Teachers	
2/3	X						
3/4	X						
4	X						
5	X						
5/6	X						
6	X						

information that is applicable to the questions addressed by this study. The files contain such pertinent information as: the history of the program, the statements of goals and objectives of the program, the course syllabi, the requirements and assignments for students, the plan for supervised student teaching, and statements of the philosophy of the program.

Notes of researcher as participant-observer. For a period of three years, Fall of 1981 to Spring of 1984, the researcher, as a graduate Noyes Fellow, became a participant-observer in the undergraduate courses comprising the Interdisciplinary Program. The researcher's purpose was to study the instructional procedures in the following undergraduate methods courses: Reading and Language Arts, Science, Curriculum, and Multi-Arts, and Social Studies for the Elementary School. She also supervised student teachers in the Interdisciplinary Program. The researcher's notes from these participant-observer experiences are one source of data for the present research study.

Interviewing and feedback from professors. As a part of the participant-observer experiences described above, the researcher often discussed the courses with the professors who had both designed the Interdisciplinary/Integrated Day Program and taught in it. The objective of these informal interviews was to determine the rationale for the design of the program and how the professors provide, in both the overall design and their individual courses, for the preparation of teachers in the developmental-interaction and interdisciplinary approach to learning and teaching. A distinct advantage of this research study is the fact that the professors who designed and originated the

Interdisciplinary Program have remained to teach in the program since the early 1970s.

Sources of Data for the Follow-Up Study of Teacher/Graduates

For the study of the teacher/graduates of the Interdisciplinary Program, there will be four sources of data: a survey, interviews, observations, and questionnaires.

The survey. The sample of teacher/graduates for this study was chosen from the survey. The conduct and returns of the survey have been described above, in the section explaining how the sample was chosen. Further analysis of the survey will be done in Chapter 4.

Observations. The target population for the observations will be the sample of teacher/graduates currently teaching in elementary school classrooms. This sample is described above.

1. Observations of teachers: Lack of reliability reported.

Reviewing the literature on observations of teachers, Stodolsky cites six studies that "note a general lack of reliability (stability) in classroom observation systems" (1984, p. 12). Stodolsky also points out that researchers have placed heavy emphasis on the number of observations and the kinds of instruments used. But, she states, other investigators have found that "estimates of teacher behavior across three occasions were usually not consistent" (1984, p. 13). Stodolsky concludes that "the sheer number of observations will not improve reliability" (1984, p. 13).

Calkins, Borich, Pascone, Kugle, and Marston (1978) have also stated that more observation will not add to reliability. They point

out that researchers have failed to consider that elementary teachers, who teach a wide variety of subjects, change their methods to fit different situations--thus, lack of stability occurs in several observations of the same teacher.

2. Observing across situations is needed. McGaw, Wardrop and Bunda plead that "some allowance is made for lawful adaptations of behavior to different situations" (1972, p. 16). In addition, Brophy, Coulter, Crawford, Evertson and King state that "classroom contexts do make a difference on variables" in teacher behavior (1975, p. 878).

In summary, Stodolsky calls these reports "a belated recognition of the possible importance of contextual variables in the study of teaching." She further concludes that "sampling across situations is clearly needed for generalizability, as revealed in the studies previously reviewed" (1984, p. 13, italics hers).

3. Observation time frame for observations planned for the present study. Stodolsky comments on "the helpful property of . . . observations of the same teacher teaching different subjects to the same children" (1984, p. 14). For example, for the study Stodolsky reports, she found the same teachers and children employing "very different instructional arrangements as they switched from math to social studies lessons" on the same day (1984, p. 14). She further states that "full day observations showed variation in other subjects as well" (1984, p. 14).

Therefore, the observation plan for the present study was full day observations, with a sampling across situations such as the reading and language arts period, the mathematics lesson, and the science or

social studies periods or art lessons (as available). The researcher observed the same teacher varying her methods for the same children in the same classroom on the same day. Thus, observing across situations was accomplished.

This full day of observing many activities added up to five hours of observation of each teacher in the context of her classroom and her school. This plan was better for the present study than two or three short observations of an hour each on separate days, for many reasons. The first reason is the unreliability of separate observations, as reported above. Second, the observer was investigating a wide variety of teacher roles and characteristics, as identified by Bussis and Chittenden (1970) and Walberg and Thomas (1971). Various teacher roles are more prominent in certain activities or situations in the daily time schedule, which varies in different classrooms. Observing across subjects and situations in the classroom was necessary to this study.

Third, one of the principle characteristics of teachers in developmental/interaction classrooms is their ability to change and adapt their teaching methods to the varying needs, interests, and learning styles of children, as they move through the day in different learning situations. This teacher adaptability is best discerned in a full day visit to a classroom.

Fourth, as Stodolsky (1984) points out, the different areas of curriculum call for different teacher behaviors and characteristics. This is true for such roles identified by Bussis and Chittenden (1970) as Provisioning, Instruction, Diagnosis, and Evaluation. Stodolsky says "a flexibility of approach, tied to subject matter and curriculum, seems

a more accurate characterization of teaching at the elementary level" (1984, p. 16). She says that teaching is not only specific, planned and organized behavior, but it is also spontaneous behavior. Indeed, from her review of the literature and her own research, Stodolsky (1984) believes that we cannot underestimate the importance of context (curriculum and situation) in observing a teacher's work in an elementary classroom. For this reason, we must take care to observe the same teacher teaching various subjects and integrated projects and moving from one to the other in the same day, with the same children. Therefore, a full day spent in a teacher/graduate's classroom, observing the teacher teaching three to five different curriculum areas and/or interdisciplinary units--and organizing the classroom and students in different ways for different learning situations--is the observation format for the present study. As stated above, it is more suitable for this study because the study calls for the observation of eight different areas of teacher endeavor--eight related roles and characteristics--in the daily work of each teacher.

The fifth reason why the time frame (of one full day comprised of several observations of different lessons and situations) is suitable to the present study is the location of the sample for the study. The elementary schools in which the teacher/graduates are working are located great distances apart, some in different states. There are limitations on the observer in terms of the cost of travel and overnight accommodations, in order to begin observing in the early morning and stay all day.

4. Limitations of observations as a data source. Stodolsky found in her research that an observer should expect "variation in teaching and instructional arrangements, not consistency" (1984, p. 17), in the work of any one teacher being observed. Therefore, certain limitations of the use of observations are noted. To remedy this, the observation should be only one source of information about a teacher's work. The present study takes this into account, adding interviews and questionnaires as data sources for the sample of teacher/graduates now teaching in elementary classrooms.

Interviews and questionnaires. In the present study, the several observations of different curriculum areas, covered by the teacher in a full day, will be used as a basis for a later interview between the observer and the teacher. The interview will begin in the afternoon after the full day of observations has taken place. Therefore, what happened that day will be immediately available for comment and clarification. Stodolsky states that this is an appropriate use of the observation: "Specific occasions are what teaching is all about, and may provide a very appropriate focus for discussing . . ." (1984, p. 17) the teacher's work.

In addition, the questionnaire is to be filled out by the teacher after the interview has been completed, and then mailed to the interviewer/observer. The statements on the questionnaire are identical to those on the observation rating scale. Therefore, the teacher's own self-assessment on the indicators used in the observation will be considered in the teacher profile.

Research Methods and Instruments

Both quantitative and qualitative research methods and instruments will be used in this study. The quantitative instruments will be described first.

Quantitative Research Instruments and Methods

The Walberg and Thomas Observation Rating Scale and Questionnaire.

An observation rating scale designed by Walberg and Thomas (1971, 1972) will be used to gather data in the classrooms of the sample of the teacher/graduates. This observation scale is based on the eight pedagogical characteristics of teachers first identified by Bussis and Chittenden (1970) and later verified in the literature by Walberg and Thomas (1971). A questionnaire for teachers accompanies the observation rating scale and has the same questions, for the teacher's response.

Validity of the observation instrument and the questionnaire has been supported in a study by Evans (1971) of 62 American and British classrooms. The scale is a 50-item measure that describes a teacher's classroom behavior along a continuum from open (i.e., developmentally oriented) to traditional methods. The classroom observer uses a four-point Likert-type response, with a "4" rating indicating a frequent evidence of the teacher characteristic of developmentally oriented practices, and a "1" representing either no evidence or a negative indication of the behavior. A high score indicates teacher roles and characteristics of the more open or developmental/interactive classroom, while a low score indicates more conventional or traditional classroom behavior.

Examples of items are: "The teacher bases his or her instruction on each individual child and his or her interaction with materials and equipment"; "Materials are readily accessible to children"; and "Children are not supposed to move about the room without asking the teacher's permission" (scale reversed).

The reliability of the Walberg and Thomas Observation Rating Scale and Teacher Questionnaire for five of the eight teacher characteristics has been supported by a number of samples in which the application of Cronbach's alpha yielded coefficients that ranged from .86 to .93 (Evans, 1971; Hoy and Jalovick, 1979). Moreover, the Evans study (1971) gave strong empirical evidence that the use of this observation rating scale could define whether a teacher's classroom practice is more traditional or more open [developmental-interaction] (Evans, 1971; Walberg & Thomas, 1972). The Evans study showed that the developmental-interaction type of classroom differs sharply from the traditional type of classroom on five of the eight characteristics: Provisioning, Humaneness, Diagnosis, Instruction, and Evaluation (Walberg & Thomas, 1972).

Indeed, an advantage of the Walberg and Thomas Observation Rating Scale is that it focuses on the teacher's role in Provisioning. This is a basic role of teachers in developmental-interaction classrooms as defined by Bussis and Chittenden (1970) and Walberg and Thomas (1971). Provisioning relates to the teacher's role in establishing structure and organization in the classroom. Arrangements for classroom space, time, and learning materials are included in the teacher's Provisioning. Also included are providing choices for children, and providing for the relationships in the classroom. The teacher's role as authority in

structuring the learning environment is included in Provisioning (Walberg & Thomas, 1971). A total of 26 (out of 50) indicators on the Walberg and Thomas Classroom Observation Rating Scale and Questionnaire relate to the teacher's role called Provisioning for Learning.

However, a limitation of the Walberg and Thomas Observation Scale is that it has only 24 indicators for the other seven characteristics and roles of teachers identified by Bussis and Chittenden (1970). Seven indicators deal with Diagnosis and Evaluation, seven with Humaneness, and five with Instruction. Only two indicators deal with Ideas Related to Children and the Process of Learning, one with Self Perception, and two with Seeking Professional Growth of the Teacher. The limitations of the Walberg and Thomas Observation Scale have been noted by other researchers regarding teacher characteristics other than Provisioning (Giaconia & Hedges, 1982; Hayes & Day, 1980; Marshall, 1981). Indeed, the Evans study (1971) showed the Walberg and Thomas Observation Scale to be relatively unreliable for three of the teacher characteristics: Seeking Professional Growth of the Teacher, Self Perception of the Teacher, and Ideas Relating to Children and the Process of Learning. Therefore, these characteristics will be investigated by using other research methods and instruments.

The other method used to investigate the teacher roles and characteristics other than Provisioning will be the Interview. This method is discussed in the section below, entitled "Qualitative Research Methods and Instruments".

The Hoy and Jalovick Teacher Attitude Inventory. The other quantitative instrument used to gather data on the teacher characteristics is

a questionnaire for teachers. This is the Teacher Attitude Inventory (TAI) developed by Hoy and Jalovick (1979). They have based this inventory on the theoretical framework developed by Barth (1972). He describes the basic beliefs about children and learning held by developmentally-oriented teachers in England and the United States. Hoy and Jalovick have selected certain beliefs of Barth's as indicators "to measure the attitudes of educators about the structure of knowledge and how students learn" (1979, p. 47). This Teacher Attitude Inventory is a twenty-item questionnaire with a five-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree". The higher the score, the more open or developmentally oriented are the teacher's attitudes toward children's learning. The lower scores indicate a more traditional attitude about children's learning. Sample statements are: "Students are capable of making intelligent decisions in significant areas of their learning"; and "Learning will increase when students share in decisions about what they will study". Another is "Learning from the teacher is probably the best way to learn" (scale reversed).

Hoy and Jalovick report that the validity of the Teacher Attitude Inventory was supported by principals' judgments of the teachers in their sample. "Teachers identified as open by principals scored significantly higher on the TAI scale than those judged to be traditional" (1979, p. 47). Also, an alpha coefficient of .81 supports the validity of the Teacher Attitude Inventory.

Qualitative Research Methods and Instruments

Qualitative research methods will be used in the research study, such as Interviews, Observations and Field Notes, and Case Studies.

Introduction: Purpose of qualitative methods. Qualitative methods are necessary to get beneath the surface structures and find the deep structures, the underlying reasons and guiding principles behind a person's actions. Golden states that "sometimes it is desirable, even necessary, to understand the whole research situation from the point of view--or the perspective--of the participant" (Golden, 1976, p. 24). Lofland also comments on the value of a qualitative approach to research, saying that "through detailed rendering of other people's worlds, we understand other people better" (Lofland, 1971, p. 17). In seeking to understand another person's point of view, it is important to use research methods that permit flexibility, openness, and an attitude of discovery (Golden, 1976; Lofland, 1971). The interview is a research method appropriate to this task.

The interview as a research method. Semi-structured interviewing is a guided conversation that focuses on the subject's experience and the meaning he or she makes of it. Interviews are described by Bogdan and Taylor as "personal documents . . . those materials in which people reveal in their own words their view of their entire life, or a part of it, or some other aspect about themselves" (1975, p. 6).

Bussis, Chittenden and Amarel say that, at the heart of developmental-interaction approaches to education, there is "a set of shared ideas about the human capacity to learn . . . and about the kinds

of environment that facilitate and encourage . . ." learning (1976, p. 21). Therefore, it is important, through semi-structured interviews, to examine the basic ideas underlying the observed behaviors and practices of the teachers who are the subjects of this study.

Furthermore, the rationale supporting the interview as a research method maintains that recording the simple occurrence of a behavior is not enough, but that research must also probe beneath the surface behavior to find the meaning and values inherent in that behavior for the individual. One person's meaning may be different from another person's meaning. The semi-structured interview, as a methodological paradigm, is based on a different view of people than that held by behaviorism or technology (which rely on quantitative methods of research). The view of people held by qualitative researchers is based on a neo-phenomenological tradition in psychology, presented in the work of psychologists such as Snygg and Combs (1949), Cantril (1980), Allport (1955), Kelly (1955a and 1955b), and Maslow (1962). Their theories of human behavior "stress individual 'construct systems' (perceptions, attitudes, values, understandings) as the fundamental reasons underlying a person's behavior" (Bussis, Chittenden, & Amarel, 1976, p. 13). This view of knowledge and knowing is shared by many developmental psychologists such as Piaget (Piaget, 1960; Piaget & Inhelder, 1969) and by psycholinguistics such as Lenneberg (1967) and Smith (1971). Bussis, Chittenden and Amarel summarize:

. . . This shared viewpoint posits that knowledge of reality is constructed or invented by each person; that it is not represented in any simple way as an aggregation of learned 'facts', that it is not restricted to the 'information input'

received by the organism, and that it is continually open to reinterpretation of meaning. (Bussis, Chittenden, & Amarel, 1970, p. 14)

Therefore, research based on this premise will be as concerned with the meaning of behavior--the individual's beliefs, perceptions and values--as with the behavior itself.

The qualitative approach to research is particularly important for the proposed research study because several analysts of teacher characteristics have noted that the teacher in the developmentally-oriented classroom has a quite different view of children, knowledge and learning than the traditional or conventional teacher, and the teacher's viewpoint influences his or her teaching behavior in the classroom (Barth, 1972; Bussis & Chittenden, 1970; Fantini, 1973b; Raywid, 1982; Walberg & Thomas, 1971). These differences in point of view are noted in the review of the literature in Chapter 2 of this dissertation.

For the reasons given above, therefore, one methodological paradigm that is used in this research study is the semi-structured interview. The sample of teacher/graduates will be interviewed (the same classroom teachers who are observed). Each interview will be tape recorded and will last approximately one and one-half to two hours.

Preparing the Teacher Interview Guide. Interviews were held with a sample of the graduates of the Interdisciplinary Program who were currently teaching in elementary school classrooms. The criteria for choosing the sample is given above.

In preparing the Teacher Interview questions for the present study, the researcher took note of the comments of Bussis, Chittenden and Amarel.

It was found by these researchers that certain types of questions, when put to classroom teachers, proved to be unproductive. Questions that were too general elicited only "abstractions and generalities too vague to be revealing of personal constructs" (1976, p. 43). They found that direct questions regarding open (or developmental-interaction) education, as such, "tended to elicit slogans and generalities unrevealing of the teacher's own thoughts and perceptions" (1976, p. 14). Bussis, Chittenden and Amarel further state:

The type of question that more readily brought out personal constructs was one posed with concrete reference to classroom materials, to classroom practices, or to children's behaviors. . . . In responding to such questions, teachers could develop and communicate their more abstract and theoretical ideas through specific reference to the ongoing life of the classroom. (Bussis, Chittenden, & Amarel, 1976, pp. 14-15)

The type of questions found effective by Bussis, Chittenden and Amarel have served as a guide to the researcher in selecting questions for the interviews of the teacher/graduates in this study. Bussis, Chittenden and Amarel advise informality and flexibility in the use of interview questions, in order to encourage and elicit a teacher's personal views and underlying constructs and beliefs. (The Teacher Interview Guide used in this study is included in the Appendix.)

Plan to Present and Analyze Data

The Quantitative Data: Three Rating Scales

The sample of teacher/graduates in this study is small (only 10 were observed and interviewed). Therefore, statistical methods of analyzing data were not used. Rather, the teacher/graduates' raw scores

are presented for the three rating scales (an observation rating scale and two questionnaires, as described above). These raw scores are analyzed, ranked and compared. This data is presented in Chapter 4 in both narrative form and in tables and graphs. Conclusions regarding this data are given in Chapter 5.

The Qualitative Data: Observations and Interviews

A case study method has been used to present the data from observations and interviews, for both the Interdisciplinary Program and the follow-up study of its teacher/graduates. Patton, in his book Qualitative Research Methods, describes such case studies as "the transaction model" (1980, p. 54) of research.

Patton says that one form of this model is "responsive evaluation" (1980, p. 54). This is the model used in the present study of the Interdisciplinary Program and its methods courses. Patton explains that, in this model, the researcher observes a program in action and studies how it operates. The observer takes field notes and keeps other records of the day-by-day events and the actions and reactions of the people in the program. Then the researcher writes narratives describing the program. Patton says that the researcher "treats each case as unique" (1980, p. 54). He or she then presents these case studies to the people involved in the program and "he gets them to react to the accuracy of his portrayal" (1980, p. 55).

In the present study, the researcher attended all sessions of five complete undergraduate courses as a participant/observer. This took

place over a three-year period. From her detailed field notes and records of the day-to-day conduct and content of the methods courses, and her frequent conversations with the professors over this time, the researcher has written a case study of each course. She has also written a description of the overall design of the Interdisciplinary Program as a whole. She has then presented each case study to the professor involved in that particular course, and he or she has reacted to her description of his or her course and advised on any changes needed in her portrayal. The overall description of the Interdisciplinary Program was also submitted to each professor for his or her comments. The only exception to this procedure is the Mathematics methods course. All aspects of this procedure were followed except that the researcher did not become a participant-observer in the Mathematics course. Her description of the Mathematics course is based on an interview with an instructor of the course. All of the case histories of the courses are presented in Chapter 4 of this dissertation.

The case study method is also used to present the data in Chapter 4 on the follow-up study of a sample of the teacher/graduates from the Interdisciplinary Program. A case study has been written describing the work of each of the 10 teacher/graduates in the sample. The data is taken from the observation field notes and the interview of the sample of teacher/graduates.

The approach used for the teacher/graduates' case studies is called "illuminative evaluation" by Patton (1980, p. 55). Its aim is to discover and document what it is like to be a participant in a certain program or approach (or to learn and teach a certain way). Through

observations and interviews, the researcher documents the activities, behaviors, thoughts, attitudes, remarks, and feelings of the participants in a program. Patton (1980) says that this type of research is useful for discovering how a program (or an individual) is influenced by the situation in which it operates. (In the present study, one would be concerned with how a teacher was influenced by the teacher education program, first, and later by the context of the school in which she works.) Also, Patton states that this descriptive type of research and evaluation "can be particularly useful in programs which emphasize individualized client outcomes" (1980, p. 64). In a teacher education program, the clients (teacher candidates) are certainly individuals, and they go into highly individual schools later as professional teachers.

Again, Patton recommends treating each individual participant (or teacher/graduate) as a separate case study. The researcher would write detailed narrative descriptions of each one's activities and attitudes in the setting observed. Then, Patton says, "By combining these case histories, it is possible to construct an overview of the pattern of outcomes for a particular treatment facility [or teacher education program]" (1980, p. 64). This is the procedure used in the present research study. The case studies of the sample of teacher/graduates are given in Chapter 4. The conclusions are presented in Chapter 5.

CHAPTER 4

PRESENTATION OF DATA

Mode of Analysis

This chapter presents the data collected in the present research study. Data on the two aspects of the research project are presented: (1) the study of the Interdisciplinary Program for undergraduate teacher education at the University of Massachusetts, and (2) data on the follow-up study of a sample of its graduates at work as teachers in elementary classrooms.

The researcher first presents the descriptions of the Interdisciplinary Program, showing its relationship to the Integrated Day Program where appropriate. The overall program design and each of the methods courses are described. (The rationale for using a case study format for this research was given in Chapter 3.) In the descriptions of the conduct and content of the program, the researcher points out specific instances of the fostering of the eight characteristics and roles of teachers as identified by Bussis and Chittenden (1970). (The eight characteristics and roles have been defined in Chapter 2.)

Next, the researcher presents the data on the follow-up study of a sample of the graduates from the Interdisciplinary Program. Again, a case study of each teacher is presented. As appropriate, the ways in which each teacher/graduate manifests the characteristics and roles identified by Bussis and Chittenden (1970) is pointed out in the description of his or her work as a teacher.

Then the data from the quantitative measures (the observation rating scale and two questionnaires, as described in Chapter 3) is presented. These instruments focus on the eight characteristics and roles of teachers as identified by Bussis and Chittenden (1970) and further analyzed by Walberg and Thomas (1971), Barth (1972), and Hoy and Jalovick (1979). (The instruments are described in Chapter 3.) The present chapter ends with additional relevant data from the survey. One purpose of the survey was to follow the professional life of the graduates from the teacher education program over a ten-year period. The data from the survey is relevant to the teacher characteristic Seeking Professional Growth of the Teacher (Bussis & Chittenden, 1970).

In the present study, the method of presenting the data on the conduct and content of classes in the Interdisciplinary Program (as well as the data on the teacher/graduates) is largely descriptive. Feiman-Nemser points out the need for this type of case study of qualitative research:

It is impossible to understand the impact of preservice preparation without knowing more about what it is like. Sarason (1962) characterized the preparation of teachers as 'an unstudied problem' and called for detailed descriptions of how teachers are actually trained. The need still exists, educators are beginning to know more about student teaching. (1983, p. 13, emphasis mine)

Since there has been extensive research on student teaching, that is not the focus of the present study. The student teaching component of the program will be only briefly described as part of the total program. The focus of this study is the methods courses and the overall design of the program. A concern of the study is the examination of the impact of the methods courses and program on the later work of its teacher/graduates. The researcher is concerned with finding out how this

particular teacher education program fosters certain characteristics, roles, and understandings in prospective teachers, namely, those associated with the developmental-interaction approach to learning and teaching, as identified above. Having presented the data on the program and its teacher/graduates in the present chapter, further analysis and conclusions will be given in Chapter 5.

Data on the Interdisciplinary/ Integrated Day Program

A Preservice/Inservice Continuum

The Integrated Day Program exemplifies the concept of teacher education as a lifelong process. It combines both a new approach to preservice teacher education (its Interdisciplinary Program) and an inservice staff development program. Its Inservice Growth Program was begun in 1970. Welles (1975) has documented its development through the cooperation of Integrated Day professors and inservice public school teachers and administrators. In addition, the first three years of the Integrated Day Program, with its inservice/preservice continuum, is described by Schumer (1973). Initially, four public school systems were involved in the Integrated Day Program, including both teachers and principals. Intensive three-week summer workshops were given for them at the University in 1971 and 1972. Then, as now, University faculty traveled to school systems to give inservice courses, with University credit in degree programs.

The Integrated Day Program's first preservice methods course for the training of prospective teachers were given in the Fall of 1971.

These University students then became the interns (student teachers) in the classrooms of the teachers in the inservice staff development programs, in the Spring of 1972. Thus, the preservice/inservice continuum was begun. This liaison is the continuing goal of the Interdisciplinary/Integrated Day Program.

Schumer presents her description of the early years of the Integrated Day Program as "a model for educational change which can be undertaken by schools of education" (1973, p. 1). Both its inservice staff development program and its preservice teacher preparation program have as a conceptual framework the developmental-interaction approach to teaching and learning. They both also have a humanistic theory of learning as a foundation.

A Stated Learning Theory as Foundation of the Interdisciplinary/Integrated Day Program

An unusual feature. A distinctive and unusual feature of the Integrated Day Program (including its preservice, inservice, and graduate programs) is that it is based on a concise, stated theory of learning, or philosophy, derived from a particular body of research and psychology. This statement of philosophy was worked out in the early years of the program, when students and faculty defined a set of priorities about learning and teaching. These they consider basic to the Integrated Day Program's procedures and teachings.

While the stated beliefs are not new to the literature of education, Hruska says, "What is new is the selection of a particular set of beliefs about learning and then structuring learning experiences and acting consistently in concert with those beliefs" (1978, p. 95). The

Integrated Day Program does this, in both its in-service and pre-service programs. Thus, it fosters the teacher's understanding of the learning theory which is basic to the developmental-interaction approach to teaching. It develops the characteristic of teachers noted by Bussis and Chittenden (1970) as Ideas Related to Children and the Process of Learning. A brief overview of the background of the philosophy, or learning theory, espoused by the Integrated Day Program is appropriate here, in order to see that these are not just assumptions, as some have called them (Barth, 1972). Rather, these concepts of learning go far back in the history of ideas about the nature of man.

Learning theory: Psychological and philosophical foundations. The Integrated Day Program's learning theory is deeply rooted in the philosophical thought of the past three hundred years. Indeed, before we consider the development of basic ideas about children, learning, and the nature of man, it is important to note that we cannot separate the history of psychology from philosophy. Bigge (1974) states:

Although many psychologists have tried in the past century to divorce psychology from philosophy, it is doubtful that this is possible. There is no science so 'pure' that it lacks philosophical implications. . . . Since any psychological system rests upon a particular conception of basic human nature, psychology is deeply involved with philosophy from the very start. (pp. 60-61)

Current literature on learning theory presents two very different views of man, psychologically and philosophically. These are illustrated by Wann (1964) in his book Behaviorism and Phenomenology: Contrasting Bases for Modern Psychology. The two different concepts of man (found in the views of learning and teaching in schools today) extend back to the differing philosophies of Locke (1632-1704) and his

opponent, Leibnitz (1646-1716). Locke first presented the doctrine of association in the seventeenth century. The theory was expanded by many philosophers, some of whom finally evolved the branch of psychology known as behaviorism. In the early twentieth century, John B. Watson (1878-1958) and Edward L. Thorndike (1874-1949) were the chief proponents of behaviorism. They widely influenced traditional methodologies of teaching in the United States. Today, psychologists with similar approaches are called neobehaviorists. They are interested in stimulus-response conditioning as a way to learn. They are interested in evidence which can be empirically researched, publicly identified, observed and replicated by others, with uniformity in its findings and conclusions (Hruska, 1978). Some of today's leading neobehaviorists, who have influenced education, are identified by Bigge (1964) as Gagne, Glasser, Hebb, Mowrer, and Skinner.

A different view of learning and of the nature of man is espoused by the Integrated Day Program, that derived from Leibnitz (the opponent of Locke in the seventeenth century). A direct line of philosophers and psychologists have developed and expanded Leibnitz's theories over the last three hundred years. Leibnitz saw man's mind as active, problem solving, self initiated, eager to manipulate data in his environment, always in a state of growth or becoming (Allport, 1955).

Leibnitz's followers added to this view of man. Wolf (1679-1754) defined the mind as having the basic characteristics of knowing, feeling, willing. He attributed to knowing the abilities of perception, memory, imagination and reason, inherent in all people. Kant (1724-1804) maintained that things could only be known as they appear to each of us,

that is, from our individual point of view, which is different for each of us. Herbart (1776-1841) advocated observation as the method of psychology. He offered the concept that ideas are assimilated into an apperceptive mass in the mind. Herbart had many ideas about education and is known as the father of scientific pedagogy (Hruska, 1978).

These theorists and others led to the position of Gestalt psychology, which was first defined in 1912 by Max Wertheimer, a philosopher-psychologist in Germany. The word "gestalt" means a whole pattern, including each part comprising the pattern. In the 1920s, Wolfgang Kohler and Kurt Koffka advocated Gestalt psychology in the United States. They opposed Thorndike's theories of trial-and-error learning.

Kurt Lewin is an American Gestalt psychologist who developed the Field Theory. For Gestaltists, a person's lifespace is his or her own perception of his or her environment, and this field includes the person, his or her goals, the objects he or she perceives, and the environment or ground surrounding them (Lefrancois, 1972). Therefore, his or her perception of his or her environment is related to his or her learning.

Lewin's work has had an influence on the humanistic movement of today in the United States, sometimes called the Third Force in psychology. The new humanistic psychology was established because the traditional psychology did not deal with healthy, whole, normal man. The new psychology criticized traditional psychology's use of animals for research, its mechanistic approach, and its basis in studies of sick people. Rather, the new humanistic psychology was concerned with emotionally healthy man. It is interested in his or her individuality,

his or her ability to think, to feel, to determine his or her own fate. The humanistic movement was called in the 1960s a more "genuine science of man" (Snelbecker, 1974, pp. 480-481).

To Lewin is attributed a basic idea of the new humanistic psychology, called phenomenology. This is "the notion that each individual reacts to his own world in a unique way and in order to understand him it is necessary to begin from his unique point of view" (Hruska, 1978, p. 65). Carl Rogers' (1951) client-centered therapy is based on this notion. A related concept of humanistic psychologists is self actualization. This concept deals with the individuality of men and the importance of each person's own efforts in his or her development.

Some call Abraham Maslow the founder of humanistic psychology, citing Maslow's Toward a Psychology of Being (1962) as one of the major works on the new psychology. The term humanistic psychology was first used by Cantril in 1955. The Journal of Humanistic Psychology was begun in 1961, and soon thereafter the American Association of Humanistic Psychology was started by Maslow and Anthony Sutich (Bugental, 1967).

In addition to Maslow, others who have made valuable contributions to the development of humanistic psychology are: Gordon Allport (1955), Carol Rogers (1951, 1969, 1975), Arthur Combs (1965, 1975) and Combs with Ann and Fred Richards (1976, first published in 1959), James Bugental (1967), Rolo May (1967), and Clarke Moustakas (1969). Also, Karen Horney, Kurt Goldstein, and Eric Fromm are cited by Snelbecker (1974) as making valuable contributions.

Several of the major humanistic psychologists have made direct applications of their psychology to education. Abraham Maslow (1962)

said that fundamental changes are required in schools, to suit the new understanding of normal man and his needs. Carl Rogers gave his proposals for education in his book Freedom to Learn (1969). Donald Snygg (1975) has presented a theory of learning for teachers and curriculum planners. Robert Blume (1971) has made recommendations for changing teacher education. And Arthur Combs (1965) has made extensive recommendations for the redesign of teacher education programs along more humanistic lines. It was to this group of humanistic educators and psychologists that the founders of the Integrated Day Program at the University of Massachusetts turned for a learning theory, or philosophy, on which to base their own new program for teacher education.

The learning theory, or philosophy, of the Interdisciplinary/Integrated Day Program. The faculty and staff of the Integrated Day Program defined and organized a set of beliefs about learning on which to base the activities of the program, for both teacher preparation and staff development activities, in the early stages of developing the program (Bunker, 1970, 1974, 1976). The six statements in this learning theory, or philosophy of the program, are the same in the program description circulars of the early 1970s (Interdisciplinary/Integrated Day Program, Designs for Effective Teaching and Learning, n.d.) and those of the 1980s (Interdisciplinary/Integrated Day Program, Interdisciplinary Specialization, n.d.). These six statements are the foundation of the program. They apply to the learning of children, college students, and inservice teachers--that is, to all phases of the Integrated Day Program's continuum for lifelong learning.

The following six statements about learning are taken from the program circulars cited above; the sources, given here after each statement, were identified by Hruska (1978):

PROGRAM PHILOSOPHY:

1. Students should be actively involved in solving real problems. People learn to do what they do. Learning takes place when people have an opportunity to interact with data. Content is important in this process (Rogers, 1969, 1975; Combs, 1969; Snygg, 1975; Blume, 1971; Combs, Avila, & Purkey, 1971; Combs, Richards, & Richards, 1975).
2. Students respond positively to the opportunity to work from their strengths. People are more effective when they feel good about themselves. Success is built upon success (Rogers, 1969; Maslow, 1968; Combs, Avila, & Purkey, 1971; Blume, 1971; Snygg, 1975).
3. Students are better able to apply new learnings, refine their skills, and continue growing as they get feedback and support from others. Humane support systems encourage movement toward renewal (Rogers, 1969, 1975; Maslow, 1968; Combs, 1965, 1969; Combs, Avila, & Purkey, 1971; Combs, Richards, & Richards, 1975).
4. Students should be involved in making decisions about the design, implementation and evaluation of their own programs. Shared decision making increases involvement and insures attention to individual and special needs and strengths (Rogers, 1969, 1975; Combs, 1965, 1971; Blume, 1971; Snygg, 1975).
5. Students' needs must be met. In order to deal with higher order needs (cognitive, self-actualization), lower order needs (physiological, security, belongingness) must be met (Rogers, 1951; Maslow, 1968; Combs, Avila, & Purkey, 1971; Blume, 1971).
6. Students benefit from self-initiated and self-directed learning. People are their own instruments for growth (Rogers, 1969, 1975; Maslow, 1968, 1970; Combs, 1965; Combs, Avila, & Purkey, 1971; Blume, 1971).
(Hruska, 1978; emphasis hers)

With the above precepts about learning as a basis, the faculty and staff of the Integrated Day Program set about to design and implement a

new program for teacher education. We will now describe the undergraduate component of that program, the Interdisciplinary Program.

Description of the Interdisciplinary Program

General design of the program. The Interdisciplinary Program is the undergraduate component of the Integrated Day Program in the School of Education at the University of Massachusetts at Amherst. The relationship of the two programs is described in Chapter 1 above. The Interdisciplinary Program for teacher education is open for Juniors and Seniors, as well as Continuing Education students, who have completed the basic requirements and prerequisites for all Education majors. Students are required to enroll for the entire Interdisciplinary Program each semester. It is a two-semester sequence. During these semesters, the teacher candidates are not allowed to take any other courses, as this sequence of courses is a full-time commitment.

There are specific goals concerning the abilities and competencies that the program fosters in the prospective teacher. Like the program philosophy, the program goals are the same in statements issued over a ten-year period, except for one. The fifth goal statement below was added in the early 1980s:

PROGRAM GOALS

During the two-semester sequence, participants will develop the following competencies:

Ability to observe and informally diagnose children's strengths and needs in intellectual, physical, social and emotional development.

Knowledge of content and approaches in various curriculum areas.

Ability to use a variety of planning, provisioning and managing approaches alone, with colleagues and with children.

Ability to create, find, modify and use instructional strategies appropriate for the developmental levels, learning styles and cultural backgrounds of individual children.

Ability to integrate different fields of knowledge into the curriculum.

Ability to work with colleagues and children in a supportive, positive manner.

Ability to keep records for the purpose of evaluating growth and designing learning strategies.
(Interdisciplinary/Integrated Day Program, Interdisciplinary Specialization, n.d., p. 1)

The above statement of desired abilities of teachers, called the goals of the Interdisciplinary Program, are closely related to the eight characteristics and roles of teachers as identified by Bussis and Chittenden (1970) and further described by Walberg and Thomas (1971). The first goal pertains to Diagnosis of Learning Events and Ideas Related to Children and the Process of Learning. This goal is particularly related to the child development basis of the Interdisciplinary approach to teaching and learning. The second and third goals stated above are related to Provisioning for Learning. The abilities in the second through the fifth goals pertain to Instruction: The Guidance and Extension of Learning. The sixth ability or goal is part of both Humaneness and Self-Perception of the Teacher. The seventh goal is concerned with two teacher characteristics: Diagnosis of Learning Events and Evaluation: Reflective Evaluation of Diagnostic Information. And the third goal listed above indicates two teacher characteristics and roles: Provisioning for Learning and Seeking Professional Growth by the

Teacher. Thus, all of the eight teacher characteristics and roles identified by Bussis and Chittenden (1970) are indicated in the statement of goals of the Interdisciplinary Program.

The professors in the Interdisciplinary Program are well aware that some people are more suited to becoming teachers in the developmental-interaction approach than other people are. Therefore, there is a selection process for admission to this teacher education program. The procedure may have changed from time to time; the researcher gives here the method of selection and admissions during the years when the researcher was a graduate assistant and participant/observer in the program.

The selection process starts in the semester before the college student wishes to begin the program. The student must fill out an application form which includes information on his or her previous work with children. A two- to three-hundred word statement is also required from the student applicant, in which he or she is asked to tell of "your purpose in becoming a teacher, your view of the relationship that should exist between teacher and children" (Interdisciplinary/Integrated Day Program, Interdisciplinary Specialization, n.d., p. 3). Also, the teacher candidate must ask someone to write a reference on his or her aptitudes for becoming a teacher.

From the applications and references, students are selected for interviews. Two members of the Interdisciplinary/Integrated Day staff (faculty and graduate teaching assistants) are present at each individual interview, as scheduled over several days. Also, a group interview has been added since 1983, to assess the student's interaction with others in team situations. With a large number of applicants, several group

interviews must be held so that each is small enough for active participation by applicants. Thus, the faculty and graduate teaching assistants invest a great deal of time and thought in the selection process. They are mindful of the characteristics needed for teaching in the developmental-interaction approach, as well as the fact that not everyone is suited to be a teacher.

After the interviewing process is completed, the final selection of students for admission to the program is made by the faculty and graduate teaching assistants in a process of shared decision-making. The goal is 20 to 25 students a semester in the methods courses; however, the actual number selected varies each semester. Concurrently, last semester's course students will be in their second semester, or student teaching part of the program. Therefore, there would ideally be 40 to 50 students in the program in any given semester.

The administration of the School of Education at the University of Massachusetts at Amherst has given both support and autonomy to the faculty in designing the Interdisciplinary/Integrated Day Program. In this two-semester sequence, the methods courses are taught the first semester, the student teaching internship occupies the whole of the second semester. The professors have designated a block of six courses (19 credits) for the first semester. Five of these are methods courses, scheduled over two and one-half days a week. The sixth course is a pre-practicum, comprised of the other two and one-half days, which are spent in an elementary school classroom. There is a "Principles and Methods of Teaching" course in each of the following areas: Reading and Language Arts, Science, Social Studies, the Multi-Arts, and Curriculum

Construction. (The course in "Methods of Teaching Mathematics in the Elementary School" was given the semester before.)

A distinctive and unusual feature of the Interdisciplinary Program is the lengthy two and one-half day prepracticum, which runs concurrent with the methods courses each week, all semester. The prepracticum in an elementary school classroom has been described as "a laboratory for observing and trying out materials and ideas from the methods workshops" (Interdisciplinary/Integrated Day Program, Interdisciplinary Specialization, n.d., p. 1). Indeed, the faculty consider this concurrent experience (in real classrooms with real children) so important that the number of days spent each week in the prepracticum site has more than doubled during the ten years on which the present study focuses. Graduates from the mid-1970s told the researcher that they had spent one day in prepracticum classrooms while taking the courses, and they thought they needed more time in children's classrooms. This is an example of how the professors have listened to and valued feedback from the students. By 1981, when the researcher came to the program, there were two full days of prepracticum. And by 1984, the amount of time spent in children's classrooms was lengthened to two and one-half days, with the methods courses at the University scheduled for the other two and one-half days. The prepracticum is truly used by each methods course as a place to try out the learning and teaching activities and approaches being taught in the courses, as well as a time to observe and learn from teachers and children. Examples of this use of the prepracticum site will be given in the descriptions of each course below.

After the semester of courses and prepracticum, there is a second semester devoted entirely to an internship in an elementary school classroom. This student teaching experience is a full-time commitment, requiring the intern to be at the elementary school all day, every day, just as the teacher is, for one full semester. The student's internship experience is guided and supported by both the cooperating teacher and the Resource Person (supervisor) from the University's Interdisciplinary Program.

The Resource Person (supervisory) system of the Interdisciplinary Program is a distinctive feature of the program. It is modeled after the Advisory system of the British Primary Schools; it is the method of supervision for both the prepracticum and the intern stages of the Interdisciplinary Program. Each student's Resource Person makes an unusually high number of visits to the elementary classroom, to observe the teacher--once a week for interns and once every two weeks for the prepracticum student, throughout the semester. These visits also include conferences for both planning and evaluation, to support the student's beginning efforts in actually teaching children. The large number of visits is in sharp contrast to the state requirements for certification, which are three visits only per semester. The Resource Persons are encouraged to use the methods of Clinical Supervision (Goldhammer, 1969) in their work, and weekly seminars for the Resource Persons are conducted by one of the Directors of the Interdisciplinary/Integrated Day Program.

Another distinguishing feature of the Interdisciplinary Program is the way the classes are conducted. They do not meet twice a week in

55-minute periods, like most undergraduate courses. Rather, each course meets once a week for a two and one-half hour period. This gives the time required for a "workshop" format for each course, and integrated projects.

The workshop class simulates the "learning-by-doing" classroom for children as closely as possible. Learning materials for the curriculum fields (science, art, reading, mathematics, social studies) are brought to the workshops by the professors. The college student has the opportunity to do experiential learning from materials in hands-on projects, just as children learn--a new experience for most of the prospective teachers, who have only learned from books in the past (Raywid, 1984b). The college student also has the opportunity to participate in integrated curriculum projects, and to do cooperative learning in small groups, when doing science experiments or planning curriculum projects in social studies, the arts, reading and writing. Thus, the prospective teacher (who may have only learned alone in his or her past schooling) now can experience, in the workshop courses, what it is like for students to learn together, to learn by doing, and to learn from materials, in addition to learning from books.

Some of the courses in the Interdisciplinary Program have textbooks, some give out mimeographed articles. All of the courses have an abundance of teaching/learning materials related to each curriculum area (and sometimes to several areas, in integrated projects), which are used in the workshops. The workshop way of conducting college courses fosters the prospective teacher's understanding of the teacher role Provisioning for Learning identified by Bussis and Chittenden (1970) as

typical of teachers in developmental-interaction classrooms.

Provisioning includes several aspects of teaching in addition to providing materials for learning. It includes the scheduling of time in large blocks, ample for hands-on and cooperative projects. It includes the arrangement of space in the classroom for active learning, in meeting areas and learning centers, rather than in desks-in-rows arrangements of space.

In the Interdisciplinary Program's workshop courses, prospective teachers have the opportunity to experience these aspects of Provisioning. Learning centers are often set up in the college classroom, and they usually work together around large tables in the workshops. They are also given assignments to plan and implement one or more learning centers for the children in their prepracticum classrooms. Another aspect of Provisioning is also fostered in the workshop courses. That is, the prospective teachers have many opportunities to experience and understand better the importance of planning for children's choices, shared decision making, and the kind of humane relationships that are so important in the developmental-interaction classroom.

Another important aspect of the way the courses are conducted in the Interdisciplinary Program is the modeling of teaching strategies by the professors. In most teacher education programs, the professors lecture about teaching methods. However, in the Interdisciplinary Program, the professors actually model and use in the workshops the teaching strategies and techniques that they want the prospective teachers to use with children. This is most unusual. Roose (1985), in her literature review, could find no other elementary teacher education

program based on conscious modeling of methods by the professors. Roose studied in detail the conscious modeling of two professors in the Interdisciplinary Program. Modeling gives the student a two-fold benefit: (1) he or she observes how a teacher acts when facilitating or guiding learning in a developmental-interaction classroom, and (2) he or she experiences what it is like to learn when such methods are employed. The individual ways that the professors model teaching strategies will be described in the individual course descriptions later in this paper. Through this modeling, the Interdisciplinary Program fosters the teacher characteristic identified by Bussis and Chittenden (1970): Instruction as Guidance and Extension of Learning.

The type of teaching methods modeled by the professors in the Interdisciplinary Program are those found in the classroom based on developmental-interaction approaches to teaching/learning. Some examples that are highlights of the Interdisciplinary Program (and very different from the conventional teacher education programs) are given here.

The workshops in the Interdisciplinary Program have less direct teaching than most college courses (although this may be appropriate at times). The professors seldom give orders or directions, and they never criticize negatively a student's answers. Rather, the professors model more indirect ways of teaching. They may offer an idea for discussion, or bring in materials to explore, as a way to introduce a concept.

An example of indirect teaching is the modeling of questioning techniques as a way of leading the students to concepts. All of the professors in the Interdisciplinary Program model excellent questioning

skills. A professor will seldom tell the answers outright, but he or she will keep asking questions to draw the answers out of the students. The professor accepts all ideas as possible parts of the answer; then, he or she clarifies by asking another question. As the students think through a problem, the professor supports with encouragement and praise. The professor's questions invite students to offer their own views and experiences, so that they will find personal meaning in the topic under discussion. Such techniques are modeled frequently by the professors in the Interdisciplinary Program.

Another important feature of the way the workshop courses are conducted is the frequent opportunity provided for the students to do shared decision making. One example is the use of cooperative learning in small groups. Sometimes this takes the form of peer teaching, wherein one student prepares a lesson and teaches one or two others. More often, the cooperative learning follows the Group Investigation model (Sharan, 1980). In this model of cooperative learning, a small group of students plan a project, collect data, and figure out answers and solutions together. Then they report their findings to the entire class, and class discussions or activities may result. The professors in the Interdisciplinary Program often model this kind of indirect teaching, or cooperative learning, organizing the class workshops in the Group Investigation model. Thus, the college students experience this type of cooperative learning. Raywid (1984b) pointed out that prospective teachers have not been taught this way; therefore, they need to experience the methods of developmental-interaction learning/teaching before they will feel comfortable teaching this way. Also, Combs (1965)

pointed out that teachers teach the way they are taught. Therefore, it is important for them to experience being taught in the methods that we hope they will emulate. Therefore, the professors' modeling of cooperative learning and other methods of developmental-interaction classrooms is as important for the experience of teachers as it is for the observation of the methods. Indeed, Roose (1984) points out that observing a model is not enough; the student must also have an opportunity to do the thing he or she is observing the model do.

Cooperative learning involves shared decision-making and develops good relationships--two things that the professors in the Interdisciplinary Program consider important in the modern classroom. Also, this type of organization for learning promotes a sense of community and collegiality. In the teacher characteristic Provisioning, Walberg and Thomas (1971) point out that their literature review showed that important aspects of Provisioning are plans for structuring classrooms so (1) children are given choices (decisions to make) and (2) good relationships happen there.

One of the important features of the Interdisciplinary Program has been described as follows: "We build a caring community of students, staff, and classroom teachers to enrich our work together" (Interdisciplinary/Integrated Day Program, Interdisciplinary Specialization, n.d., p. 1). The sense of community is consciously built into the Interdisciplinary Program in many ways, from the beginning of the semesters to the end. Raywid (1984b) points out the significance of beginning to build community and collegiality while students are still in teacher preparation programs, since most college students

have not had a sense of community and working/learning together in their own schooling. Collegiality in the developmental type of school today is considered an important teacher characteristic. It means a teacher's willingness and ability to work with others, to share ideas, and to support fellow teachers in curriculum development and in focusing on children's needs. Walberg and Thomas (1971) found that collegiality is related to the teacher characteristic identified by Bussis and Chittenden (1970) as Seeking Professional Growth by the Teacher.

The faculty of the Interdisciplinary Program show their concern for building a sense of community and collegiality by the way they design the program. On the first days of classes each semester, when the 15 or so new students first come to class, they do not start in their separate courses like the rest of the university does. Instead, there are "Orientation Days". All the faculty come, as well as all the students, to meet together for a day and a half of activities.

On the first Orientation Day in the Fall of 1985, the first activity, "Getting To Know You", lasted one hour and 45 minutes. A faculty member welcomed everyone and said that we have all come as individuals, and we think that each individual is unique--each is important--so we are going to spend some time getting to know each other. The first activity was a name game; both names and individual interests were emphasized. Both students and faculty were invited to large tables where art materials were available. Each one made his or her "coat of arms", indicating his or her interests. After a time, they paired off to introduce themselves to another; then, after 10 minutes, they

introduced each other to the entire class, each telling the interesting things they had just learned about the other.

After this, there was a second "Getting To Know You" activity. Each one met with a new person and talked for 10 minutes, then changed to another. The topics for discussion each time were: a book recently read, a new friend recently met, a trip recently taken, and what was learned from each. Again, both faculty and students participated.

This "Getting To Know You" activity lasted until 11:45. After lunch, the semester's program was introduced and schedules were given out. The prepracticum and the internship were discussed, and a preliminary introduction to the "Integrated Day" Day was given. One faculty member introduced the statements in the basic philosophy of the program; cards representing each statement were put over the blackboard, to remain there for references. Outdoor hands-on science activities were done, with the students' first taste of cooperative learning in small groups. They met again the next morning for more preparation for their prepracticum experiences. Then they had a pot-luck lunch in the classroom, which had been planned by the students and faculty together the day before.

Two weeks later, in the curriculum course workshop, the professor asked the students to recall what they did on the orientation day (when analyzing this approach to education). The students said, "We played a name game . . . interviewed another person to find out interesting things about them, then introduced him or her to the class . . . did activities together . . . shared ideas about our teaching and the basic beliefs of the program . . . and ate lunch together."

Then the professor asked them to contrast this with other first classes in university courses. The students replied that in the others, they were talked "at"--here, they were talked "with". "There, they don't do activities--here, we did activities the very first day." There, in other courses, "We never got to know our classmates."

The professor then asked, "What underlying purposes can you attach to this? Why did our faculty do this thing--so different from ordinary university classes?" The students replied, "To make us feel comfortable . . . so we'd feel relaxed. . . . It was a challenge, not a threat. . . . The message was, we're special. . . . So we'd get to know the professors before class. . . . It was personalized. . . . We were treated like people, the interviews and all."

The professor replied, "Yes, all those are good reasons." Then he gave another reason: "We recognize that you have not had experiences like children in open classrooms, and we want you to experience what it's like." He explained that experience should come first, then the verbalizing about it, or names for things. Then he gave another example of this: we should give children experiences first, then the vocabulary related to the experience. He said, "The wrong way is to give children a list of spelling words unrelated to anything."

At the end of the semester, there is another day together called "Wrap-Up". There is another pot-luck lunch together. But most of all, there is a warm feeling of real community and friendship. This is built, step by step, in all the workshop course activities through the semester.

Another feature of the workshop courses in the Interdisciplinary Program is the kind of evaluation done by the professors. Throughout the semester, diagnostic Evaluation is modeled by the professors, with a great deal of feedback to the students about their assignments. Each teacher candidate is evaluated on his or her own progress and individual development. Therefore, the final marking system is pass/fail; no grades are given in the Program.

Description of the courses.

(1) EDUC I 460: "Elementary School Curriculum". The professor says that he prefers the title "Curriculum Construction Workshops" for this course. He began the course by focusing on two of the characteristics of teachers identified by Bussis and Chittenden (1970) and Walberg and Thomas (1971): Self Perception of the Teacher and Ideas Related to Children and the Process of Learning. Indeed, this same professor had introduced the basic belief system of the Integrated Day Program in the Orientation Days' activities the week before. At that time, he had placed large cards at the top of the bulletin board in the front of the classroom. These cards contained brief titles for each basic belief and would remain there all semester for reference. In a curriculum workshop, the professor called these beliefs a "philosophic fabric" underlying the Interdisciplinary/Integrated Day Program's approach to teaching and learning. He further stated, "These guide our work with children."

In 1983, there were nine basic beliefs summarized on the cards at the front of the room by the following titles: Discovery of Personal Meaning; Active Involvement; Build on Strengths; Shared Decision Making;

Meet Needs; Feedback and Support; Growth Takes Time; Skill Acquisition; Self Direction.

The first curriculum workshop continued to build the basic philosophical and developmental basis for a developmental-interaction approach to teaching. The topic of the workshop was: "What beliefs do we hold about learners, learning, and curriculum?" The professor recalled the manner in which he had introduced the program's beliefs at the first Orientation Day. He had asked them to think back to their own experience as learners in school and articulate their own beliefs about learners and teaching. As they offered ideas, he had grouped them under these basic beliefs of the Program. Later, in the first workshop, he asked them why he had done that. "I could have just told you the beliefs about learning," he said. One student replied, "You wanted us to use our own minds." Another said, "You didn't want to force it on us." He replied, "Yes, and there's another reason, too." He pointed out that if the belief system is relevant to their own experience in school, then it has personal meaning for them.

During the early workshops, there were many activities involving the student teachers' self-perception. Several times the students were asked to recall their own elementary school experience. Some volunteered anecdotes and memories, and these were related to the basic beliefs about learning under discussion. Thus, in the Curriculum course, the professor often directly addressed the student teacher's preconceived ideas about teaching, or the Anticipatory Socialization stage of learning to teach.

This early focus on the teachers' self perception and their own beliefs and experience is similar to Combs' (1965) focus. Combs' research on a personal emphasis in teaching was done at the Universities of Florida and Colorado. This approach to the self perception of the teacher is also supported by research done at the University of Texas at Austin. There, it was found that prospective teachers have a sequence of concerns. Fuller says that "education students are first concerned about themselves and their own feelings" (1974, p. 113). They want to be successful and are afraid of appearing inadequate when in classrooms with children. It is much later before they become concerned with teaching methods, children's needs and curriculum design. Therefore, Fuller suggests that teacher education courses be arranged so that the content is offered at the time it is of concern to the student of teaching. Also, Fuller points out that the students need an opportunity to voice their self-concerns. She says that "sharing feelings and concerns develops a kind of team spirit" (1974, p. 113).

Therefore, during the Curriculum Construction Workshops, there were many activities focusing on the student's own "Ideas About Children and Learning" and "Self Perception", and time in the workshop to share their ideas with each other. Often there was an activity organized like the following example. The 25 students were asked to divide into seven small groups of three or four each. The professor had asked them to share ideas about the characteristics of a good teacher, or "What does success look like?" A long time--10 or 15 minutes--was always allowed for their talking together in small groups. This time, they also wrote their ideas on large charts (for later display

in the room). A lively all-class discussion followed. The professor frequently spoke of the importance of personal meaning, saying that this course would help them to think through their own beliefs about learning and teaching.

The professor's total acceptance of the students' own ways of thinking about and expressing their individual beliefs shows a great deal of Respect for Persons, an aspect of another characteristic designated by Bussis and Chittenden (1970): Humaneness. Also, the professor pointed out the importance of Humaneness in their work with children. On one occasion, when discussing the basic beliefs, the professor asked them to jot down five things they remember about their early school experience. Then volunteers could share them in a class discussion. The professor pointed out that people "always remember things full of emotion--laughter, joy, desperate fears". Then he remarked, "What is this all about?" There were comments that children cannot learn arithmetic if they are hungry or afraid. The professor commented, "Teachers should take humaneness into consideration."

The professor also pointed out that, in this curriculum course, he would be modeling many specific methods of teaching that the students could later use in elementary classrooms. Roose (1985) had found (in her research study of modeling by professors in this teacher education program) that sometimes the professor does not articulate just when he or she is modeling. Roose found that the professor does need to tell the students when he or she is modeling a particular technique or method--else the students do not notice or ponder whether they should use the method. The students in Roose's study told her that having the

professor articulate what they were modeling did help them to understand the particular technique of teaching, or ". . . you might not even realize it," one student said (Roose, 1985, p. 251).

The professor in the curriculum course did point out that he was modeling a teaching method; in fact, he did this twice in one day. The first time, he divided the class into several small groups for discussion of their own personal experiences on the first day in their pre-practicum classrooms. A long time was allowed--15 minutes--and their discussions got very involved. Then the professor asked them to volunteer some of these ideas to an all-class discussion. This technique was pointed out as a form of cooperative learning in small groups.

The second time the professor pointed out that he was modeling a teaching technique was when he showed the way to have pupils share in decision-making about curriculum. He modeled a technique called webbing. He asked the students to pretend they were fifth graders and think of all kinds of interests and activities they would like to pursue in relation to a topic. While they gave ideas, he wrote them on the board in a web around the main topic. Then he asked for volunteers to choose which ideas they wanted to begin working on first. Thus, he was modeling one way to plan individualized learning around a theme. One student asked, "How can you plan when you don't know what the pupils are going to say?" Then there was a discussion about how to begin with the basic textbooks and curriculum guides established by the school system, and how to branch out from there to plan individualized and interdisciplinary (or integrated) curriculum activities. Both the professor's modeling of the technique called webbing, and the students'

active participation in the activity, helped them to understand this approach to planning curriculum.

Both the student teacher's self-perception and the basic beliefs of the student teacher continue to be a major concern of the professor in the curriculum course workshops. There were other evidences of the characteristic Humaneness, also identified by Bussis and Chittenden (1970), in both the professor's modeling and the prospective teachers' experiencing in this course. For instance, the three aspects of Humaneness are abundantly evident in these workshops:

- (1) Respect for Persons is modeled constantly. The student teachers' own ideas are accepted and their expression is encouraged. The students are given many choices about how to carry out the assignments in his or her own way in the prepracticum site. Each student teacher is encouraged to tell of his or her own beliefs about learning and teaching, and to relate his or her own past experiences in school, as well as the present experiences in the prepracticum.
- (2) Honesty of Encounters is modeled by the professor. He talks about his own experiences as a teacher, relating his past trials and tribulations. He does not pose as a person who knows everything, but rather one who is a constant learner. He models teaching as guidance of learning.
- (3) Warmth and concern for each individual student teacher is modeled in class discussions and in the way the

professor responds to assigned work. When he reads their assignments and field reports, he writes long individual comments on each one. Also, the professor is supportive of the students in the workshops devoted to team planning for the day when they will have full charge of a class of children in a local elementary school, called "Integrated Day" Day (this curriculum planning project is described in detail below).

Unlike most curriculum courses, there is a continuous connection made between this course's workshops and the practical field experience that each student is having in a local elementary classroom (the two to two and one-half days of prepracticum each week, concurrent with the methods courses all semester). By the second or third workshop, all students had been placed in their prepracticum classes. The professor told them in the curriculum workshop, "I am particularly interested in your personal reaction to what happens in your prepracticum classroom." He continued, "I want to help each one of you develop competence in planning, diagnosing and evaluating children's learning experiences." He spoke of helping each one "identify your own strengths and start with what you are already good at doing."

Therefore, he asked the prospective teachers to write ten field reports during the semester, relating their experience in their prepracticum classroom. He wanted to know their personal opinions and feelings about "what works with children and what doesn't work." He stated that he will write comments on the students' field reports and return them to their mailboxes in the department. He concluded, "The

purpose of field reports is a personal communication system." This system helped to individualize the professor's instruction.

Thus, a relationship was constantly made between the theory discussed in the curriculum course and the student's current experience of being in the prepracticum site--in a real classroom with real children. For instance, one assignment was to observe the cooperating teacher in each student's prepracticum classroom and list specific ways he or she exemplified each of the basic beliefs in the philosophy of the Interdisciplinary/Integrated Day Program (i.e., those nine statements for which titles were posted on the bulletin board when they were introduced on Orientation Day, as related above). Each student was given a chart on which to jot down this observation of the cooperating teacher. Then the student was to add ideas about how he or she might put each belief into action in the classroom. This chart was to be brought to the workshops for discussion.

There were many assignments involving the prepracticum site, in the curriculum methods course. All aspects of the course evidence a personalized program with the individual student teacher at the center of his or her own learning to teach. The professor remarked to the researcher (who was a participant-observer in the curriculum course) that there are three basic principles of teaching college students in the Interdisciplinary/Integrated Day Program: (1) Begin with the student teachers' own experience; (2) Get them to state the values, the beliefs, so that they are self-motivated; (3) Provide them with real problems to solve.

The real problems are assignments to do things with real children in their prepracticum classrooms. The first major assignment of the curriculum course workshops began in the third workshop and was entitled "Observing in the Field". This workshop launched a study of Diagnosing of Learning Events, one of the eight characteristics and roles of teachers identified by Bussis and Chittenden (1970).

A practice session on doing observations was held in a course workshop. The professor and students discussed many ways to observe children's strengths: anecdotal notes, interviews, informal talks with children, giving choices to children, testing. He stated that the purpose of observing children is to know their strengths, interests, personalities. He defined diagnosis as judging strengths in order to plan improvements.

Next, the professor asked, "What do we do with our observations?" The students named many ways of keeping records seen in their prepracticum classrooms: anecdotal records, skill checklists, tick sheets, tape recordings, children's notebooks or folders, activity cards, photographs, charts.

After a discussion, the professor summarized: "As a result of observations and record-keeping, we analyze needs and prescribe next steps." The professor and students listed and discussed many kinds of next steps seen in their prepracticum classrooms: direct instruction, peer teaching, activity cards, independent studies, small groups working together, or learning center activities.

Then came the question: "And how do the teacher and the child know there is success?" This is known by Evaluation (one of the teacher

characteristics noted by Bussis and Chittenden, 1970). The professor defined evaluation as "valuing the activity". Many ways to evaluate were discussed, with the students volunteering examples from their prepracticum classrooms: tests, performances on tasks, interaction with others, reports, checklists and inventories, attitudes and enthusiasm, demonstrations. The professor emphasized the need to "look frequently" when diagnosing and evaluating a child's work. He encouraged the prospective teachers to look for strengths and to keep facts and conclusions separate.

There were several workshops on observing, diagnosing, and evaluating. Beginning with the first workshop on doing observations, a long-range assignment was given. This was that each student should pick out a child in his or her prepracticum classroom and observe this child from now until the end of the semester, writing daily anecdotal records on the child. In subsequent course workshops, time was set aside for the students to divide into small groups and read their anecdotal records, discussing their "children" with each other. The anecdotal records were turned in to the professor at intervals during the semester, for his comments and guidance.

In subsequent workshops, the study of Diagnosis (observing, record keeping, analyzing, planning) and Evaluation continued. A panel of cooperating teachers from local schools gave their own personal views and examples of record keeping. Also, a structure was set up for another "real problem" assignment. The student teachers were asked to arrange with their own cooperating teachers for a project to keep some of the records in their prepracticum classrooms.

Another curriculum workshop included a study of the teacher's role in planning. This is an important part of the teacher characteristic Instruction as Guidance and Extension of Learning, as identified by Bussis and Chittenden (1970). The planning process was described by the professor as a combination of objectives, activities for learning, new information, and interaction. These result in learning, which is the discovery of personal meaning. An assignment resulting from the planning workshop was that each student should write a lesson plan, then teach the lesson to a small group of children in his or her prepracticum class, and evaluate the lesson. The student was to be observed by his or her Resource Person (Supervisor) while teaching the lesson, and helped to evaluate it in a conference with the Resource Person. A written report of this planning and teaching experience was to be given to the professor.

The planning workshop led to a subsequent workshop on "Creating Learning Environments" (Bunker, 1988, p. 2). This is related to two roles identified by Bussis and Chittenden (1970), Provisioning for Learning and Instruction as Guidance and Extension of Learning. Two workshops on this topic included a study of the use of classroom space (learning centers), the arrangement of more flexible time schedules, the use of many materials for active learning. These studies were related to the principles of learning and different models of teaching. There were discussions of appropriate kinds of learning activities, and the humane relationships, choices for children and shared decision-making found in developmentally oriented, interaction and interdisciplinary classrooms. (Humaneness is also a characteristic of

teachers in such classrooms, as identified by Bussis and Chittenden [1970].) A "real problems to solve" assignment was given during these two workshops on "Creating Learning Environments". The prospective teachers were asked to design and implement a learning center on each one's prepracticum classroom. He or she was to maintain it over time and then to evaluate the center. The evaluation was to include both the children's participation in the learning center and the prospective teacher's function as teacher in the center. The student's Resource Person was to observe the center and give constructive feedback, as well as the professor's commentary.

These two workshops on "Creating Learning Environments" led to the student's readiness for a major assignment of the semester: planning, implementing and evaluating the "Integrated Day" Day. This day will be the culmination of the curriculum and methods courses, and it is the highlight of the Interdisciplinary Program. The assignment is: (1) to work with a team of three or four fellow students of your choice; (2) to negotiate with one of your cooperating teachers for consent to have the "Integrated Day" Day in that prepracticum classroom, on a date set by the Interdisciplinary Program; (3) to plan a whole day of interdisciplinary learning activities for the children in that classroom; (4) to implement their plans in that classroom, becoming team teachers in the class on "Integrated Day" Day; (5) to evaluate the day's learning/teaching activities afterwards.

Four of the curriculum course workshops are set aside for the cooperative planning by the teams of prospective teachers for their "Integrated Day" Day. As they prepare learning materials and discuss

possible learning activities and teaching strategies, much support and advice is given by the professor and the graduate teaching assistants during the curriculum workshops. At this time, the "real problems to solve" principle is put into action, along with many of the characteristics and roles identified by Bussis and Chittenden (1970) as typical of teachers in developmental-interaction classrooms. First, the teacher's role in Provisioning is fully experienced by the prospective teachers. They are encouraged to choose a theme for the planning of interdisciplinary learning activities for the day. Examples of themes have been "Save the Whales" for younger children, or "A Day in Ancient Greece" for older children. The team of student teachers provides materials for the learning activities they plan, usually setting up several learning centers (space arrangement). They decide on a suitable time schedule for the day. They plan what choices and shared decision making will be offered the children. They plan the Instruction strategies (both direct instruction for skills and indirect instruction in projects for small group interaction, or discovery learning). They use materials and teaching strategies from all their curriculum courses this semester, planning learning activities that integrate science, reading, art, writing, social studies, and/or mathematics in various combinations.

The students in the curriculum methods course report that the "Integrated Day" Day is an invaluable experience. They have a real purpose for learning to plan integrated curriculum projects and instructional strategies--they are going to put their plans into action with real children in a real classroom. They get a taste of what it is like to be a fully responsible teacher!

After the four planning workshops, the teams of students have an opportunity to present previews of their plans for the day to the rest of the class. They give the rationale underlying their plan, describe the learning activities, time schedule, room arrangements (learning centers). They discuss the role of each of the team teachers for the day, discuss teaching/learning strategies and methods planned for the different activities, and display any materials they have assembled or constructed for the learning activities. They also tell of the evaluation systems they have planned for the "Integrated Day" Day. Each team of students does this preview presentation for the other students and the faculty.

Then the great day comes. (In fact, with a college class of 25 students, there may be several prepracticum sites holding "Integrated Day" Days on one day and several other sites on another day, in order for the faculty to visit all sites.) The faculty, resource people (supervisors) and graduate teaching assistants arrange a schedule of visits so that one or two members of the University staff are present to observe the student teachers and children in their "Integrated Day" Day activities at any given time, at each elementary school site where the "Integrated Day" Days are being held.

After all the "Integrated Day" Days have been held, there is a day for a "Sharing" workshop at the University. Each student teaching team reports to the other students and the faculty and graduate teaching assistants about what happened on their particular "Integrated Day" Day. The students do a self-evaluation and the faculty/graduate teaching assistants comment about the part of the day that each observed.

With the Interdisciplinary Program's usual focus on building on strengths and appreciation for individuals, there is a real feeling of accomplishment and success at this meeting, as well as some insights into both strengths and needs.

An important aspect of the "Integrated Day" Day program is the collegiality it develops among student teachers. Indeed, many aspects of the Interdisciplinary Program contribute to the development of a real sense of community among the current group of students each year. In many of the courses, there is specific provision for cooperative learning in small groups. But the "Integrated Day" Day is a major exercise in teacher cooperation, collegiality, learning and planning together. Raywid (1984b) says that since most prior schooling has only provided for students to learn alone, prospective teachers today must be taught how to learn and plan together before they can understand the benefits of children's cooperative learning, or work well in team teaching situations. The curriculum course in the Interdisciplinary Program serves this purpose well.

The "Integrated Day" Day activity is also an exercise in the teacher characteristic Seeking Professional Growth by the Teacher (Bussis & Chittenden, 1970). This real planning/teaching activity is designed to reinforce the prospective teacher's role as a continuous learner. Each student is, indeed, the agent of his or her own growth and development as a teacher in the weeks spent on this activity, with the professor modeling the supporting, guiding, facilitating role of the teacher.

The professor, comment on the "Integrated Day" Day project, said, "It takes a long time to become a teacher." In his curriculum methods course, the students are assigned first some work with one child in the prepracticum classroom. Then they teach a small group. They begin with one lesson plan, implementing it and evaluating the outcome. The professor says, "We want the experience of teaching to occur early." Later, the students design and implement a learning center, maintaining its teaching/learning activities over time. Then, at the end of the semester, there is the "Integrated Day" Day project, which the professor describes as "a total experience--planning, organizing, classroom managing, guiding children's learning, integrating subject areas, evaluating". The prospective teachers see how it feels to manage a whole day, to plan thematic curriculum, to deal with a team of other teachers. They analyze the day afterwards at the "Sharing" meeting, with input from the professors. The professor of the curriculum methods course says that the students' feedback field reports on the "Integrated Day" Day state that this is where they "learned the most". They report that they learned "to think and feel like a teacher". They came "to know their own strengths".

Combs and his associates say that people learn to be responsible by being given responsibility (Combs et al., 1974). They say that teacher education programs should create the need to know. They say that perceptual psychology tells us that people only learn when there is a real need. The Interdisciplinary Program, with its "Integrated Day" Day in the Curriculum Methods course, meets these requirements for effective learning.

(2) EDUC I 462: "Principles and Methods of Teaching Science in the Elementary School". The course "Principles and Methods of Teaching Science in the Elementary School" is designed around a process approach to both learning and teaching science. This is in contrast to two other ways of teaching science: teaching either facts or concepts (these are the products of science). When a child is taught science through the process skills, he or she eventually arrives at the facts and concepts, and he or she understands them better.

The process approach is based on what a scientist actually does as he or she investigates, or the process skills he or she employs. Some of these skills are: observing, measuring, inferring, stating hypotheses, doing experiments.

Children who learn the process way actually do science. They work with concrete materials and are active learners. They get a feel for science, for the excitement of discovery. They learn the facts and concepts by doing the processes of science (Funk et al., 1985).

The course in the Interdisciplinary Program on teaching science is designed to help prospective teachers focus on children as active learners. The professor states in the course syllabus, "This course is dedicated to the children and the ways in which they wonder and cope and make sense out of their natural world." He explains, "Our job is to help them learn how to look without telling them what to see" (Konicek, 1988, p. 1).

Since most prospective teachers have only learned from books in the past, they need to experience for themselves the feeling of learning from materials, through process skills and experiments, instead of

learning from books (Raywid, 1984b). An example of the science professor's modeling of Provisioning for this learning from materials and from experience, as well as his Instruction as Guidance and Extension of Learning (two teacher characteristics identified by Bussis and Chittenden [1970]), is seen in the workshop class on electricity.

The professor had prepared the classroom for the workshop by arranging chairs around these long tables. He placed the materials for the experiment in three different places in the room. After the students came in, he said, "Today we're going to have some fun with electricity." He asked for volunteers from each table to get the materials and distribute them. Then he asked, "Why did I put the materials in three different places in the room?" After some discussion, he said he had modeled a traffic control plan. He also pointed out that a teacher could provide everyday materials for learning (Provisioning). Each student was given a flashlight bulb, a battery (dry cell), and a wire made from aluminum foil.

The professor asked, "Can you get the bulb to light?" He asked them to work with partners, and said they would have fifteen minutes to explore "what you can do with this equipment".

The students worked together very intently. They tried all sorts of arrangements with the battery and bulb and wire. The professor waited quietly, observing the students. It was quite a long time--ten minutes--before someone shouted, "We did it!" Excitement rose. Then another shouldded, "I got it!" and another.

When all the small groups of students had gotten their bulbs to light, the professor said, "This is the Exploration stage of a science

experience". He explained that this is the first stage of what Karplus (1977) called "The Learning Cycle". These prospective teachers were learning an application of Piaget's theory by experiencing it. The professor explained that it is important to let children first explore without terms being given to it, "because terms can get in the way of exploring, for children".

Then the professor asked the first student who had gotten the bulb to light to come up to the blackboard and demonstrate how she had done it. There were flat tagboard cut-outs of a light bulb, a battery, and she drew the wire. (The professor said that children's drawings were not accurate, so he had designed these flat cut-outs for them to use flannel-board style, when they explain what they did.)

After this, there was further exploration. The professor asked, "How else can you arrange the batteries, bulb, and wire to make the light come on?" He gave them fifteen minutes more to explore this question, working cooperatively in pairs. Not many of the students found new ways. The professor commented that children would try all sorts of things and might explore this for a couple of days.

Then he said, "We have finished the first phase of the Learning Cycle--Exploration." He pointed out that this was guided exploration, because when a student had discovered something, he or she went to the board and explained it to the others. He called this an inductive approach to learning science. First, you explore and collect data. Then you put together the data and think of a generalized rule.

The second stage of the Learning Cycle, then, is the explanation stage. The professor said, "The next step, then, is to figure out a

rule" for what they had done with batteries, bulbs, and wires. To do this, he asked the students to use "the writing process" for learning and expressing ideas. First, he asked everyone to write down, in their own words, a rule or description of "what you have to do, to make a bulb light up". Then the second step in the writing process is to read what you have written to your partner, and ask for his or her help in making it clearer. The third step is to revise what you have written.

The professor gave more time--ten minutes--for the students to discuss their written rules with their partners. Then there was a class discussion, when several told their rules to the class. Together, the class worked out a general concensus on a rule for how to make a bulb light up: "If one end of the wire is touching one pole of the battery, then the other end must touch the contact point on the bulb which is not touching the other pole of the battery." This rule was arrived at through both discussion and drawing illustrations on the board (or manipulating the oak tag pictures), for each step in the discussion.

This second part of the Learning Cycle is the explanation stage, or Concept Introduction (Karplus, 1977). At this point, the professor gave terms. Pointing to the wires in the illustration on the board, he said, "This is a circuit." He explained that there is a negative and a positive part to the battery, and "the circuit is a path through the light and back through the battery".

Then he used the experience the students had had with batteries and bulbs to explain what he called "Piaget's theory of constructivism". He said, "No matter what I say in words, it isn't anything to you unless you can reconstruct it in your own minds." He further explained, "It's

not yours unless you get it through your own experience. It has to be reinvented by you." He explained that that is the reason we cannot assume that something makes sense to a student. "But when we all do something with batteries and bulbs, then we can talk about it with a common experience." This, he said, is the reason it is good for children to use their own hands to try things with materials, to learn by doing. "The more a child experiences with his own hands, the less confusion he has."

The above discussion modeled the two steps of the second stage of the Learning Cycle, the Concept Introduction stage. First, the class analyzed what happened when the light came on. Second, the professor gave terms to the process.

Next, the professor introduced the third step in Karplus' (1977) Learning Cycle: Concept Application. In this stage, the student applies the rule to something new. The prospective teachers had learned a new rule about circuits. Now they had to apply it to the next question asked by the professor: "What happens inside a light bulb?" He said that, since we cannot see what goes on inside the bulb, we have to use a science process skill called inference. He gave out magnifying glasses so that the student could better examine the tiny flashlight bulbs. Again the students worked in pairs, discussing their observations and ideas. Again, fifteen minutes was given for this work.

The professor waited, observing the students at work. Then he said, "O.K., let's tell our ideas about where the wires go inside the light bulb." He sketched on the board as the students gave their ideas: "To the tip"; "They might come back up the side"; "They would wrap

around each other"; "They all go to the tip". Then Pam said, "Maybe one wire goes to the tip and one to the metal band on the sides." The professor asked Pam to come up to the blackboard and draw that. He asked, "Does that make a circuit?" They all said it did. Then the professor gave out a commercially published sheet with sketches and questions: "Will a light come on then?" He said they could now use the science process skill called hypothesizing. They could hypothesize the answer to each one, then try it out with their batteries and bulbs to check their hypothesis. They worked on this with their partners for a few minutes.

In summary, the professor pointed out that they had experienced today the three stages of Karplus' (1977) Learning Cycle which could be used as a lesson plan format. When exploring electricity today, they had gone through the following stages of the Learning Cycle:

1. Exploration (messing around with batteries, bulbs, wires; gathering data, having a common experience to discuss about how to get the light to come on);
2. Concept Introduction (finding an explanation, giving terms to it: "This is what happens; there's an energy flow that makes a circuit"; then figuring out a rule);
3. Concept Application (applying the rule to something you have not done before, i.e., using the skill inference to figure out where the wires go inside the bulb, where you cannot see; then using the sheet on "Will it work?" to guess or hypothesize in applying

the rule, and testing each hypothesis with their own batteries and bulbs).

The above two and one-half hour workshop class is an excellent example of how the Science methods course in the Interdisciplinary Program fosters many of the teacher characteristics identified by Bussis and Chittenden (1970) as typical of teachers in developmental-interaction and interdisciplinary classrooms.

Provisioning was modeled and experienced in many ways. Concepts were learned from doing with materials, not from books. Relationships were fostered and collegiality was built by cooperative learning with partners. The time schedule allowed ample time for exploration, activity and discussion from the student's point of view. The classroom was organized for working together at tables, not in rows of desks.

Instruction as Guidance and Extension of Learning was modeled by the professor and experienced by the students throughout the workshop. The professor introduced new concepts by asking questions; his use of questioning techniques was evident in every stage of the workshop. He allowed ample time for individual exploration and discovery. He guided class discussions, using student comments to develop concepts. He gave terms at the appropriate time. He pointed out the modeling of the Learning Cycle and identified it with Piaget's theories of cognitive development.

Humaneness was modeled and experienced in this class. The professor was warm and approving. He encouraged and accepted all ideas expressed by the students, even though they may be wrong hypotheses: he repeated the idea, drew an illustration of it on the board, then

asked a question (Is that a circuit?") to let the students see for themselves whether their idea was correct or not. There was not reproof for wrong ideas, only total acceptance and approval for the expressing of all ideas, as a valid means of learning. The professor's warm acceptance of each student encouraged an atmosphere of exploration, discovery, and then excitement when answers were found. When the professor started the class, he said, "We're going to have fun with electricity today." He models his conviction that learning science should be fun, exciting and interesting for children.

Evaluations was modeled in this class. The professor called the ones who had figured out the right concept to come to the board and diagram and explain it to the class.

Ideas Related to Children and the Process of Learning were both modeled by the professor and experienced by the students in this class. The constant reminder that they were experiencing the steps of the Learning Cycle, as defined by Karplus (1977), served to tie the way the prospective teachers were learning about electricity to the way children learn. This gave a developmental basis to the teaching methods being modeled by the professor and experienced by the prospective teachers.

In every weekly workshop in the science methods course, the students were provided opportunities to learn other science process skills by doing science experiences with materials. A variety of science areas were covered in the classes. There was a Consumer Research Product Test project using six brands of paper towels. Small groups of students designed original experiments to collect and analyze data on the

particular brand of towel they were testing. Then the collective data was recorded on charts and graphs. There were science experiences with habitats and trees, meal worms and water bouyancy. The course introduced the prospective teachers to activities and process skills in the physical sciences, the biological sciences, and the earth sciences.

The students were introduced to several published sources of curriculum activities and projects. The professor said that these published guides to science activities were "designed for integration into the existing school curriculum". The students learned Provisioning of science materials from everyday life and easily accessible sources of the community.

An example of the use of the community resources was a workshop entitled "Where is science?" The class took a trip to the local supermarket. The students were asked to work in small groups, and to choose an activity card for their exploration. The cards contained a variety of activities integrating science with other curriculum areas. Some students' cards had activities and questions for exploring how the automatic door device worked. Other students investigated the sugar content in cereals. Some students compared the prices of foods; others found out the geographic areas from which certain foods came.

A follow-up assignment, due two weeks later, was for the prospective teachers to write original activity cards for another community source where they might take children to learn science. The students' activity cards covered science learnings in such places as a television station, a restaurant, the zoo, a movie theatre. They thought of challenging activities and questions that integrated several curriculum

areas. They displayed and shared their activity cards in class. Great appreciation and praise was expressed by all for the interesting and original cards. This was an illustration of Humaneness, or warm acceptance and respect for persons (Bussis & Chittenden, 1970).

A major assignment for the science methods course was that each prospective teacher design a science experiment of his or her own. The course syllabus states that "Variables, controls, and all of the things that go into an investigation will be yours to design" (Konicek, 1988, p. 2). The student had to do the experiment, write it up, and defend his or her investigation. These projects were presented to the other students and evaluation techniques were covered in the final workshops of the semester. (Evaluation of learning events is one of the teacher characteristics identified by Bussis and Chittenden, 1970.)

All through the science methods course, the students were required to do readings of materials given out by the professor. They were also required to keep a learning log of activities in the workshops and their assignments. This log was checked periodically by the professor, in order to keep in touch with each student's progress in learning process science teaching. There were assignments to plan mini-lessons using the Learning Cycle format, and to teach these lessons to the children in their prepracticum classrooms. The student teacher's Resource Person (Supervisor) observed these lessons and gave constructive feedback. There were also occasions for peer teaching of lessons planned by the students. In most semesters, these were taught during an overnight trip to a nature reserve, for which the students did all the planning of both nature study activities and meals.

The professor's final requirement, stated in the syllabus, is: "Enjoy yourselves and become more confident in your ability to allow children to explore their natural world and learn from it" (Konicek, 1988, p. 2). The building of this confidence was well illustrated in this course. The professor modeled Humaneness, a teacher characteristic identified by Bussis and Chittenden (1970) as typical of teachers with developmental-interaction and interdisciplinary approaches to learning and teaching. In turn, the students expressed the attitudes of Humaneness to others: warmth, honesty of encounters, and respect for persons (Bussis & Chittenden, 1970). The professor made all students feel accepted and comfortable enough to take risks, hypothesize, explore, express their own ideas and appreciate others' ideas.

This confidence was also fostered by the collegiality of cooperative learning in small groups, experienced in every science workshop class. Each student worked with a partner for the entire course, and if one was absent, the other helped him or her make up the work done in that class. Since most college students today have learned alone throughout most of their school careers (Raywid, 1984b), the repeated experience of learning cooperatively with one or more others is an important part of the teacher-training in the Interdisciplinary Program at the University of Massachusetts. The research of Johnson and Johnson (1975) and others has proven that children learn better when the teacher plans for cooperative learning in small groups. The spontaneous self-grouping of children who choose to help each other learn has proven successful in the British Primary schools (Weber, 1972). However, American teachers need to experience learning this way before they can

feel comfortable allowing children to learn together and to learn from each other (Raywid, 1984b).

In summary, many aspects of the characteristic Instruction as the Guidance and Extension of Learning (Bussis & Chittenden, 1970) were both modeled by the professor and experienced by the student teachers in the science methods course workshops. The professor was facilitator, guide. He set the stage, provided materials for the students to explore. He fostered active, experiential learning. He observed students at work, intervened where needed, used questions to guide their analysis, fostered self-directed learning. He integrated the disciplines or areas of the curriculum, putting basic skills to use in activities. He structured the class for both individual learning and cooperative learning in small groups. He encouraged interaction and fostered shared decision making. He was warm and accepting of individuals' own ideas, building confidence. He used the community as a curriculum source. The instructional methods modeled by the professor in the science course could be used in any curriculum area by teachers desiring to have a more developmental-interaction and interdisciplinary classroom.

(3) EDUC I 461: "Principles and Methods of Teaching Reading and Language Arts in Elementary Schools". The course in teaching reading and language arts focuses on individualizing the reading program. The professor stated that "all assignments for this semester are ingredients in individualized reading". The relationship of reading and writing is emphasized. The use of children's literature as daily reading material is fostered.

The first workshop class introduced the basic assignments and gave an overview of the course. After a brief "getting to know you" game, a communications system was set up. The professor expressed her interest in each student as an individual: "It is my job to help move you along to a professional level, and it is your job to help me help you." Therefore, after every workshop class, each student was expected to write a feedback sheet, "emphasizing 'I learned' statements, summarizing strengths, needs, and next steps" (Rudman, 1981) in both that class and the student's own learning and concerns regarding the teaching of reading and language arts. The professor promised to read the feedback sheets, write comments on them, and return them promptly to the student's classroom mailbox. Also, the professor stated that she planned to have frequent individual conferences with the students during the semester. This attention to individual communication in the class fostered a characteristic of teachers noted by Bussis and Chittenden (1970): The Self-Perception of the Teacher. It also fostered a personal approach to teaching, called for in teacher education programs by Combs (1965).

The professor stated in the first workshop class that she would "model the kind of procedures that are helpful in a classroom". Several rituals were modeled at the beginning of each class throughout the semester. Two of these were related to vocabulary building. "Take a word home to dinner" was no dull spelling list. Spectacular words such as peripatetic, eleemosynary, and ubiquitous were introduced. The professor said that this daily word ritual had been successful in all grade levels, even high school. Children really did take the word home to dinner, and parents loved it!

Another daily ritual was called "challenge of the day". The professor explained that the purpose of "word play" activity is to enhance children's enjoyment of language. It is a good medium for learning the technical aspects of the English language, such as phonics, spelling, syllabic structure. Puns, tongue twisters, and word games come in this category. For instance, the challenge for the first workshop class was that each student find six to eight ways that "oo" is pronounced in the English language (too, look, etc.).

The third ritual modeled by the professor in every workshop class was an important one for establishing children's literature as the basic content of an individualized reading program. Near the beginning of each workshop, the professor read aloud from a children's book to the college students. In the first workshop class, she read with great expression from a picture book in which a child laments the awful things that have happened at her house since her mother started going off to work. The class then had a lively discussion of the story and children's needs today. The professor then asked, "What are the values of reading aloud?" The students replied, "Sharing . . . love for literature . . . motivation." The professor recommended that in the future each teacher should set aside a time for reading aloud frequently to the whole class, in every grade level.

A semester syllabus of topics to be covered was given out in the first workshop class, with an outline of the basic assignments required of the students in this course. Pursuant to learning the many facets of an individualized reading program, the semester assignments were: (1) to diagnose a child's reading, using a tape recorder; (2) to

evaluate the two publishers' textbooks; (3) to analyze five pieces of children's literature (in addition to those used in class); (4) to do two evaluations of reference materials for teachers on reading and language arts; (5) to write two lesson plans for teaching reading, writing, or the language arts; and (6) to do a feedback sheet after each workshop class (Rudman, 1981). After a brief introduction to each assignment, the professor indicated that one or more class workshops would be devoted to each of these assignments. There would be both modeling by the professor and practice session by the students, before they were expected to do the assignments on their own. Thus, both learning from modeling and learning from one's own experience, or active learning, were fostered in this methods course. Both Raywid (1984b) and Combs (1965) said this kind of teaching/learning was needed in college preservice methods courses.

In the first class, a list of textbooks and recommended readings was given out. Two textbooks were required: (1) one on children's literature, and (2) another on teaching reading, writing, and the language arts. Both of these textbooks focused on designing and implementing an individualized reading program. In addition, five specific children's books were ordered for students to buy in paperback.

Each prospective teacher in the course was required to begin to build his or her own library of children's literature. During the first class, a system for buying inexpensive reprints of good children's books was set in motion. A graduate student was in charge of ordering each student's choices of books each month.

After the above course overview, the professor gave an introduction to the Language Experience approach to teaching reading and writing. She discussed "the reading-writing connection". Using an overhead projector to show children's original first-draft stories in their own handwriting, the professor modeled how to do a diagnosis of children's creative writing. There was a class discussion on what to comment on, how to "build on strengths," what "next steps" might be suggested to the child. The professor gave ideas about teaching spelling and grammar in relation to children's original writing, and using their stories as class reading material. This modeling by the professor fostered in the prospective teachers several characteristics noted by Bussis and Chittenden (1970) as typical of a developmental-interaction approach to teaching and learning: Instruction as Guidance and Extension of Learning, Diagnosis of Learning Events, and Evaluation of Diagnostic Information. This discussion of children's writing set an important focus for the course, as stated by the professor: ". . . how to value each child's individuality and help him appreciate others' individuality. . . . Diversity, differences are valued." Thus, the characteristic noted by Bussis and Chittendent as Humaneness: Respect, Warmth, Honesty of Encounters was fostered in this methods course.

The conduct of three workshops will be given here, to illustrate how the professor taught content by modeling both direct teaching methods (giving information, attention to skills) and indirect teaching methods (providing for the students to learn from their own experience in activities). First, we will describe the workshop on how to do a diagnosis of a child's reading.

This workshop prepared the prospective teachers to do one of the major assignments of the course: to hold an individual conference with a child and do a diagnosis of his or her reading. To model this teaching method, the professor first gave out mimeographed copies of an excerpt from a children's book. Then she played a tape recording of a child reading this passage. When the child finished reading, the professor asked the prospective teachers, "What strengths do you see in her reading?" They replied, "She reads with expression . . . she reads fluently . . . she had good intonation . . . she pronounces words clearly . . . it's as if she were reading to someone." Then the professor asked them to recall what questions were asked by the teacher on the tape, and to think of others that they could have asked. Finally, the professor asked them to think of one "next step", one mechanical or substantive skill for the child to work on. A student offered: "Sometimes she reads too fast--she could work on doing oral reading more slowly." The professor said that rapid reading was good when reading silently, and that the teacher could point out the difference, saying that one needed to slow down for oral reading, because that is reading for an audience.

After this modeling of a taped reading diagnosis, the professor modeled some "direct teaching", giving information about skills in reading. Several mimeographed sheets listing reading skills were handed out. There were recommendations of a chapter in the textbook on skills, as well as another book on diagnosing and correcting reading problems. In the discussion that followed, the professor pointed out that there are two kinds of reading skills--the mechanical skills and the complex

or comprehension skills. The professor defined comprehension skills as "the making of meaning from the printed page". She said, "Meaning is the most important thing in reading." She cautioned against reducing reading to mechanical word-calling, which is not reading.

In this direct teaching part of the class, the professor also gave the students information on questioning techniques. She cited six steps from recall questions to comprehension questions, leading to evaluation. She stated that the purpose of a reading diagnosis is to identify where a child is strong and where he or she needs help--"to collect information for the future". Then the teacher would plan to teach that needed skill in a day or two, calling together a small group of children who need help on the same skill. The professor reminded the students to always look for strengths first when diagnosing a child's reading--to talk about these strengths with the child--and then to think of only one need or "next step" for the child to work on. Thus, this methods course fosters the characteristic Humaneness in teachers, as well as Instruction as Guidance and the Extension of Learning (Bussis & Chittenden, 1970).

After a brief coffee break in the middle of the workshop (another evidence of modeling Humaneness), the indirect teaching, or learning from activity and experience, part of the workshop began. The class was divided into small groups of three or four students for this experiential learning. Each group was given a tape recorder and a tape of a child reading aloud. They were asked to listen, each noting on paper the strengths and needs of the child who was reading. Then they were to talk over with each other what they saw as strengths, needs, and

possible next steps they would suggest to the child. For this activity, they were asked to use the list of skills just handed out, in addition to the books that had been recommended. Also, they were to discuss what comprehension questions they might ask the child about that particular story. Together, in this "cooperative learning in small groups" format, they were asked to evaluate the child's reading ability in terms of strengths and needs. A long time--about twenty minutes--was given for these small groups of prospective teachers to work together on helping each other learn how to diagnose a child's reading. They had scattered into the hall and the corners of the classroom to huddle around their tape recorders and work together.

Then they came back to the total class group to report on their work. A lively class discussion followed. Many examples were given on how to question and elicit comprehension, points of view, author's intent. Many examples of next steps in the skills were given. Questions, such as "What do you do when . . .? How can you tell if . . .?" were put to the professor. She ended this enthusiastic discussion with, "Remember, meaning is the most important part. The focus should be on meaning." She pointed out that many teachers today are too anxious about word calling and figuring out words. She said that the comprehension skills are just as important at early stages of reading as at later stages.

The prepracticum students were then given one of the major assignments of the course: to do a taped diagnosis of a child's reading in their prepracticum classroom. The tape should include their interaction with the child, the questions and answers that occur. A written

diagnosis was to accompany the tape, giving his or her view of the child's strengths, needs, and next steps. This assignment is an excellent example of putting into practice the findings of Combs (1965) and others in perceptual psychology. Namely, that people learn when there is a real need to learn. Therefore, we must create real problems to solve in teacher education programs.

Also, teachers learn from experience, from doing, not from being given theory only (Combs, 1965; Feiman-Nemser, 1983; Lortie, 1975). Furthermore, this assignment to do a taped reading diagnosis, like many other assignments in the methods courses of the Interdisciplinary Program, exemplifies the idea that preservice teachers need to learn teaching methods by doing them with real children in real classrooms (Combs, 1965).

The professor encouraged the preservice teachers to start a reading diagnosis soon in their prepracticum classrooms, because this assignment is not usually finished on the first try. She encouraged them to hand in tapes of a reading diagnosis that they may have reservations about, that they know they have to work on further. She would then comment and give helpful feedback on improving their diagnosing methods. She stated, "We learn from this kind of risk. We do not punish people who hand in work that is in the draft stage" (Rudman, 1984, p. 4). This is another example of expressing and fostering the teacher characteristic Humaneness. Furthermore, the reading diagnosis workshop, both modeling and assignment, also fostered in the prospective teachers the idea of Instruction as Guidance and Extension of Learning and the teacher's role in Diagnosis and Evaluation (Bussis & Chittenden, 1970).

In this methods course on teaching reading and the language arts, the teacher's role in Provisioning was emphasized. Provisioning is a major responsibility of the teacher in the developmental-interaction classroom, as identified by Bussis and Chittenden (1970). In every workshop class throughout the semester, a variety of children's books were introduced to the prospective teachers. The professor always read from one and brought to class or recommended several others on the same theme or issue, such as divorce, family life, death, racism. Also, each student was building his or her own library of paperbacks, and the professor always discussed the children's books available on the monthly order list. In addition to this ongoing discussion of children's literature, there were two specific workshops on reading materials and their use in the classroom. One entire workshop class was devoted to children's literature. Another workshop covered evaluating and using basal readers, or publishers' textbook series.

In the workshop on publishers' reading texts, thirty series of basal readers, including the teachers' manuals, were available for the prospective teachers to examine. This workshop was designed to prepare the students for another major assignment: to do their own evaluations of three publishers' textbook series. The workshop began with direct teaching by the professor, to give background. She explained that there are three basic approaches to teaching reading in publishers' textbooks: phonic, linguistic, and eclectic. The professor defined and described these three approaches. A list of publishers' texts identified which series had each approach. The professor reported the results of research which showed that each approach worked with eighty percent of

the population, but it is always a different eighty percent for each approach. The professor's advice to the prospective teachers was, "Don't confine yourself to one approach", since it has shown in research that any one reading program, with one set of materials, will not work with all children.

Continuing her discussion of how to use textbooks and teachers' manuals for reading instruction, the professor said, "A teacher needs ALL methods." He or she should vary them to fit the individual child. The professor advised, "Don't let a tool get in the way of children reading." She reminded the students of the definition of reading: "To get meaning from print". Therefore, she said, a teacher should focus on comprehension in reading, and always use more than one method. The teacher should "begin with what fits your own style" and "try to get it close to the child's own world". She reminded the prospective teachers that "children come to us already speaking, understanding, thinking".

The professor remarked that in a non-textbook approach called the Language-Experience approach to teaching reading, "the child brings his own content, while we teach process". She explained that this is a schema theory of reading--we build on what is already known. "Connect reading with the child's own experience--this is a framework on which to hang your reading program." This perspective on teaching reading and the language arts fosters in teachers Ideas Related to Children and the Process of Learning (Bussis & Chittenden, 1970).

In order to make the best use of the publishers' textbooks required by most schools today, a teacher needs to be able to evaluate the reading material. Therefore, the professor modeled how to do a

publisher's evaluation. This was followed by a practice session by the students in this workshop (the indirect teaching, or experiential learning part of the workshop class). A list of questions to guide their individual publisher's evaluation was given out and discussed. Then, the classroom management plan of "cooperative learning in small groups" (Johnson & Johnson, 1975) was again employed for this lesson. The students, in groups of two or three, seemed eager to search the teachers' manuals and textbooks they had chosen from the shelf. They were equally eager to share their ideas and findings with a friend. They spent a long time searching the basal readers and the teachers' manuals together and intently discussing the guideline questions with each other. They wrote down their ideas and evaluations and came back to the total class discussion with lots to share.

In this workshop, as in others in the Interdisciplinary Program, the combination of modeling by the professor and an experiential practice session (of their own) gave the prospective teachers both the understanding and the confidence to carry out the assignment. Each student had to choose two publishers' series (reading textbooks and manuals) on which to do publishers' evaluations. Each evaluation was required to be a different approach found in basal readers--phonic, linguistic, eclectic. This workshop and assignment fostered the prospective teachers' characteristics Diagnosis, Evaluation, Instruction, and Provisioning in the teaching of reading (Bussis & Chittenden, 1970).

Another form of Provisioning is the teacher's use of children's literature in the reading program. In preparation for the workshop on children's literature, the students had been asked to read several

children's books. In the workshop, the professor first presented the rationale for using children's literature as an integral part of the reading program. Although many reading programs today concentrate largely on mechanistic skills such as decoding, word calling, and phonics, the professor maintains that these skills are not enough. Other skills are needed by children--critical thinking abilities, comprehension, analysis of issues. Indeed, the mechanical skills are useless unless a child reads--gets meaning from the printed page, comprehends ideas. Meaning comes from experience, and everyone's experience is different. Children need reading material that is personalized, individual, and related to their own individual interests and life experiences.

The professor recommends a thematic, or issues, approach to children's literature in the classroom. She fosters "a critical examination of children's books in the light of how they treat contemporary social problems and conditions" (Rudman, 1976, p. 3). In this methods course, in both the class discussions and the textbook on children's literature, the prospective teachers are given many examples of how a particular theme or issue is treated in children's books today. They become aware of the enormous influence that children's books can have on the attitudes, values, and behaviors of young people in today's society. They are introduced to bibliotherapy, "the use of books to help children solve their personal problems" (Rudman, 1976, p. 4). The professor remarked, "Children need to see themselves in books, to feel validated and supported, to realize 'I am not a freak'."

Teachers need to know how to use children's literature to help children deal with issues they encounter in their everyday lives-- divorce in their families, friendship, a new baby, the disabilities of people they know, and expressions of racism in the school and community. Indeed, today's television-informed children worry about the threat of war and nuclear devastation. There are children's books today that deal with sibling rivalry, adoption, cooperation and love, sex, multi-ethnic concerns, death and old age, Native Americans, Blacks, women's issues, ecology and pollution, endangered species. Each theme or issue has its own special set of information and criteria for evaluating and using children's books, given in the textbook the class used. Pre-service teachers can only begin to explore the children's literature available on these themes. The stimulation to do this is given in this course, and the adventure becomes a part of the teacher characteristic noted by Bussis and Chittenden (1970) as Seeking Professional Growth by the Teacher (1970).

The workshop class on children's literature in this methods course is organized to help prospective teachers begin this personal exploration. After the professor's initial presentation (or direct teaching), the class divided into many small groups for discussion of children's books they had read on certain issues (they chose which group or issue they wanted to join): war, divorce, death, gender, sex, old age, heritage, and special needs. After about twenty minutes of this cooperative learning in small groups, or indirect teaching, they came together as a whole class to report findings from their reading and discussions (the professor calls them "ah-ha's").

After a coffee break, there were more small group discussions of three children's books that the entire class had read on racism. Then they came together to share "I learned" statements with the entire class. The prospective teachers had been given guidance by the professor on how to analyze a children's book. This workshop class prepared the students for another major assignment of the course--to do a written analysis of five children's books they had chosen to read, other than the ones covered in class. Not only was the student to cover the way values are handled in the books, but they had to think through ways they might discuss the books with children and use them in class activities.

Step by step, these workshops were giving the prospective teachers the building blocks of an individualized reading program. Other workshops included a demonstration on designing a lesson plan for direct teaching of specific skills to small groups. This helped the student with the assignment to design two lesson plans; these were worked on by the professor and the students over time. Another assignment was to do two evaluations of the students' independent readings of references on reading and language arts (other than teachers' manuals). In the workshop classes, there were many opportunities to explore creative writing and its relation to reading. Teaching reading in relation to the needs for mainstreaming, special populations, and multicultural issues was also covered in the workshops. This was a comprehensive methods course, rich in Provisioning, an important characteristic and role of teachers noted by Bussis and Chittenden (1970).

There is one aspect of the way the assignments were given by this professor that should be noted. All five of the major assignments were

introduced at the initial workshop class, and the early workshops gave both modeling and practice experience in doing each assignment. Yet no deadline dates were given the prospective teachers in the course. Some students felt uncomfortable with this. The professor encouraged them to get started with the assignments and to turn in drafts for help with them, in case they needed to be reworked (most of them did, especially the lesson plans and the reading diagnoses). Yet some students had a hard time functioning in an open-ended time frame and kept asking the due dates. But the professor was unrelenting on this. Why? The autonomy it demanded of the individual student, the initiative, the self-direction, the personal decision-making, were closely akin to what a teacher feels when he or she is in full charge of a class of children. Combs (1965) said that people only learn to be responsible by being given responsibility. Year by year, some students complain in this methods course, but the professor knows exactly what she is doing!

All of these workshops and assignments led up to the last four workshops in the course, which were devoted to the "what, how, why" of an Individualized Reading Program. The professor explained that Individualized Reading ". . . is not a tutorial. It is not isolated instruction." She pointed out that school is a social setting. She defined this type of program by saying, "The Individualized Reading Program is a personalized, sequential, instructional program." In the workshops, the professor discussed the key features of an Individualized Reading Program, as outlined by Veatch (1978): (1) There is a large block of time set aside for an independent work period devoted to reading and the language arts and related projects and activities; (2) The

teacher and the children plan the independent work period together in meetings; shared decision-making is important, as is giving choices to children; (3) Individual conferences (reading diagnoses) are held between teacher and child, with small group lessons as needed (lesson planning); (4) Children read silently from self-selected books of a wide variety (children's books and other books, which may include the basal reader); children read aloud to the teacher in their individual conference, and sometimes one child may read to another; (5) Children are also engaged in a wide variety of other activities related to reading, which may be writing, book making, drama, the arts, integrated curriculum projects (learning centers in the classroom). This plan for an Individualized Reading Program covers all phases of the teacher's role in Provisioning as analyzed by both Bussis and Chittendent (1970) and Walberg and Thomas (1971): materials for learning, time in large blocks, space in learning centers, choice for children, positive relationships in the classroom. The workshops on individualized reading also fostered in the prospective teachers an understanding of the teacher roles in Evaluation and Diagnosing, as well as the type of Ideas Related to Children and the Process of Learning noted by Bussis and Chittenden (1970).

In the workshops on Individualized Reading Programs, many students contributed insights from their prepracticum classes. The professor responded to questions on how to start such a reading program with "Do it a piece at a time. Don't try to have a totally individualized classroom at the beginning, if the children aren't used to it." In a school where the basal reader is required, the professor advised the

prospective teachers to say, "I will use that basal to its best advantage." Many ways to individualize the basal were discussed. The professor gave ideas on ways to involve the children themselves in setting up a more individualized reading program. She said that children should also be involved in keeping records on and evaluating their individualized reading program. Humaneness as Respect for Persons, Honesty of Encounters, and Warmth (Bussis & Chittenden, 1970) are indicated here.

During the four workshops on Individualized Reading, many facets of organizing such a classroom program were covered. There were specific workshops on how to set up Learning Centers in the classroom, how to do activity cards, how to evaluate and keep records (by both the children and the teachers). There were discussions of the "reading-writing connection" and process writing approaches. There were more discussions of the Language Experience approach, in which children "publish"--write, illustrate, and bind their own original stories, to put on the library shelf for others to read. Many sources for active experiences related to reading were given. Handouts were given to students on 49 ways for a child to share a book with others after he or she has finished reading it. This sharing is an important part of an individualized program, because a friend's recommendation often sparks interest in the book from other students.

The professor said, "Interest is the key factor that helps us lead children to individualized reading." She continued, "If a child is interested in horses, he will read every horse book in sight." She told of many ways to "lead children into a book". She said that children's

"self-selection, self-pacing, and self-evaluation are the key features" in an Individualized Reading Program. "The primary intent is to get children to be readers." As Bussis and Chittenden (1970) said, the question that concerns teachers is developmental-interaction and interdisciplinary types of schools is not only "Can they read?" but also "Do they read?"

(4) EDUC I 424: "Principles and Methods of Teaching Multi-Arts in the Elementary School". The Multi-Arts course examines ". . . the roles of the arts in the lives of children and adults" (Course Syllabus, EDUC I 424, 1981, p. 1). In this course, the arts are seen as ways of expressing ideas and feelings. Art is communication, through symbol and metaphor. It is individual, a person's unique response to his or her own experience. Therefore, all people, children and adults alike, have an innate ability to express themselves through some art media. Their aesthetic expression is related to all phases of their lives. The process of expression, the experience of art, is as important as the product. Teachers with these views understand that the process of making art for its own sake is a valid and valuable learning experience.

These teachers also recognize that children's thoughts and feelings can be expressed through art media in every area of the curriculum. These views are an important part of one characteristic of teachers identified by Bussis and Chittenden (1970), Ideas Related to Children and the Process of Learning. Teachers with this point of view provide for the arts to be naturally integrated throughout the curriculum, as another way of knowing, communicating and expressing ideas. This view of the role of the arts in curriculum is in sharp contrast to the

traditional school's schedule for art as an extra thing, put in a forty-minute period on Friday afternoon and unrelated to other subjects.

The Multi-Arts course in the Interdisciplinary Program at the University of Massachusetts has several objectives, stated in its course syllabus (1981). One of the first objectives is to help prospective teachers gain personal confidence and skills in expressing their own ideas through the use of many art materials and methods. From this comes the teacher characteristics Provisioning and Self-Perception of the Teacher (Bussis & Chittenden, 1970). From the teacher's own experience with the arts in this course, another objective arises. The aim is for the prospective teacher to then "begin to translate these understandings and skills into activities to be used with children in school" (Course Syllabus, EDUC I 424, 1981, p. 1).

Another objective of the course is concerned with the beginning of a continual development of the teacher's exploring and using the multi-arts in her curriculum planning. One of the assignments is to set up a system of keeping records and resources related to the arts, for future reference. This could include art materials, activities, ideas from books, places, people. The student is required to share the progress of this resource file with the professor twice in the semester. This requirement of the course is related to the teacher characteristic Seeking Professional Growth of the Teacher (Bussis & Chittenden, 1970).

Another objective of the Multi-Arts course is the student teacher's learning how to integrate the arts in an interdisciplinary curriculum.

Another objective of this course is to have the prospective teacher "enrich your life with new, creative and aesthetic experiences" (Course

Syllabus, EDUC I 424, 1981, p. 1). This pertains to art activities both in the workshops and on the campus--to the prospective teacher as both participant and appreciator of the arts. This requirement relates to a characteristic of teachers identified by Bussis and Chittenden (1970) as Self-Perception of the Teacher.

An example of how the characteristic Self-Perception of the Teacher is fostered by the activities in the course was seen in the first two workshop sessions. The first workshop was highly structured, with only one choice offered. The second workshop was structured differently, with more room for creativity because many choices were given students. In the first workshop, each student learned bookbinding, making a blank book. This booklet was to be used in the future as the student's journal of his or her thoughts and reactions to experiences in the Multi-Arts course (keeping a journal is one of the requirements of the course). The professor conducted this first workshop using direct teaching methods. She gave verbal directions to the whole class, directing the step-by-step procedure of making and binding a booklet, while the whole class followed simultaneously. The only choice given the students was near the end of the two and one-half hour workshop, when making the covers of the books. Some chose wallpaper patterns and some chose to cut their own block prints for the covers of their books.

The second Multi-Arts workshop was conducted in a very different way, using indirect teaching methods. The professor had "set the stage" by putting out, on several large tables, lots of different materials--different kinds of paper, yarns, a multitude of cloth scraps, bits of styrofoam and cardboard, etc. The cupboard doors were open, revealing

shelves filled with art supplies and implements--scissors, rulers, magic markers, glue, thread, paints, etc. The professor's directions to the students were brief: "Make a puppet." The students were free to explore the materials, choose what they wanted to use, and figure out for themselves how to construct a puppet character of their choice. Both process and product were defined by the student, not the teacher. Some students went right to work, perhaps choosing a character from a children's book on which they could later base a puppet show. Other students wondered and wandered, taking longer to get started and make decisions. The professor's role was to move about the room, observing the students at work and intervening where needed. She offered suggestions, asked questions, gave encouragement and appreciation, and/or redirected students as she perceived their needs.

In the last twenty minutes of this workshop, the professor conducted a class discussion in which the students were asked to reflect on the contrasting ways of working in this workshop and the first (bookbinding) workshop. The students talked about their personal reactions, as learners, to the two workshops. They saw that there was more creativity expressed in the second workshop because they had more choices. They analyzed the differing roles of the teacher, as modeled by the professor, in both direct and indirect teaching methods and classroom structures. The insights from their own experience in these two workshops contributed to their understanding and fostered the teacher characteristic noted by Bussis and Chittenden (1970): The Self-Perception of the Teacher.

Subsequent workshops consisted of hands-on experiences in many art areas. There were activities in the visual arts (drawing, painting, print-making, pastels, rubbings, etc.). There were experiences in music, dance and drama. There were classes in various forms of sculpture (clay, papier-mache, etc.). Hands-on experiences with art materials, and the modeling of appropriate teaching techniques, were a part of every workshop. Thus, the teacher characteristics Provisioning and Instruction as the Guidance and Extension of Learning were both modeled and experienced in every workshop of the Multi-Arts course.

These art experiences were usually part of integrated curriculum projects, which varied in theme from year to year. The course was enriched by the contribution of graduate teaching assistants who brought new ideas for integrated projects and workshop activities. One class worked out a creative dance/drama led by an elementary school music teacher and based on her trip to a South American country. (This project integrated social studies with the arts.) Classes sometimes developed original plays based on folklore and legends from other cultures. The teacher trainees made up the dialogue and action, made costumes and scenery. They made large papier-mache figures of some of the animal characters in the legends. They put on the plays for children in several schools.

In some years, the Multi-Arts course and the Social Studies course (Principles and Methods) were combined. This gave the opportunity to plan mini-units that integrated the curriculum areas. One such effort was a study of Japan. A student committee prepared the classroom and activities, with many Japanese crafts. For example, there was fish

printing, the making of kites, calligraphy, Japanese music on records, etc. The students took off their shoes at the door and sat on cushions on the floor, to work at low tables. Japanese decorations gave the room an atmosphere that was special. Peer teaching also characterized this workshop, as students were in charge of the crafts tables, helping those who went from learning center to learning center. The model of the classroom space used as work areas and the modeling of indirect and direct teaching techniques were both significant parts of this workshop on Japanese arts.

In the course workshops, some of the activities were done by individuals as their own self-expression, and some of the activities involved cooperative work in small groups of students. There was an abundant opportunity in the Multi-Arts course to learn collegiality in working with others and to experience a sense of community.

As mentioned above, when describing the first workshop, a basic requirement of the course was that each student keep a log of his or her experiences and perceptions of the teaching and appreciation of the arts. The professor read these logs periodically and gave back written comments on them. This was another way to foster the personal approach to teaching that Combs and his associates see as important (Combs et al., 1974).

In addition to learning about the Multi-Arts from active, hands-on experiences in the workshops, the prospective teachers also had the assignment to become teachers of art in their prepracticum classrooms. The specific assignment states that they are "to plan, provision, implement and evaluate four arts activities in the classroom in which you are

working" in the prepracticum (Lieberman, 1981, p. 1). Two of these art lessons had to be integrated with other curriculum areas. After the professor approved the lesson plans, the student's Resource Person (Supervisor) observed his or her teaching of the lessons and gave constructive feedback to the student teacher. Then the student wrote feedback cards to the professor, who in turn responded with written comments.

Another assignment was to plan and teach an art lesson to the fellow students in the Multi-Arts workshop. A lesson plan for this had to be submitted to the professor in advance. There were several "Learning Fairs" in the workshops for this peer teaching.

A distinctive feature of the Multi-Arts course was the assignment that each student give evidence of being or becoming an appreciator of the arts on the adult level. Each was required to "provide yourself with four aesthetic appreciation experiences (museums, concerts, dance, drama, or poetry performances, etc." (Lieberman, 1981, p. 1). At least two of these were required to be new experiences to the student. The student was asked to write feedback cards on each of these events to the professor, who then gave back written comments on each one. Thus, the Self-Perception of the Teacher was fostered, as well as the attitude of Seeking Professional Growth of the Teacher, both characteristics of teachers in developmental-interaction schools as noted by Bussis and Chittenden (1970). This requirement regarding the prospective teacher's own appreciation of the arts also answers the need noted by Combs and others (1974), namely, that learning is the discovery of personal meaning.

Thus, the Multi-Arts course fostered not only the ability to teach art to others, it also provided for the personal expression of the

prospective teacher's ideas in many art media. The course broadened the student teacher's appreciation and understanding of the arts. It fostered the student's integration of the arts, both in the curriculum and in his or her daily life.

(5) EDUC I 459: "Principles and Methods of Teaching Elementary Social Studies". In the Interdisciplinary Program, the social studies course is taught by graduate students (Ed.D. candidates). Therefore, the course content and conduct may vary to some extent (although the course is supervised by a professor). The researcher can only report what the course was like during the years when she was an active teaching assistant and staff member in the program. She herself taught the social studies course for two of these years; during the other years, this course and the Multi-Arts course were combined. (This combination is briefly described in the section above on the Multi-Arts course.) The researcher refers to herself as instructor in this course description.

An activity format of learning through inquiry, experience and problem solving was employed in the social studies methods course. Therefore, the course focused more on the processes of teaching and learning elementary social studies than on content. The scope of social studies in the elementary school is so wide that teachers have customarily learned much of it on the job, as they teach different levels. However, this course began with a look at the scope and sequence of several publishers' planned materials for the elementary grades, beginning with Kindergarten. The scope and sequence of several school system's curriculum guides were also brought into class by the instructor.

These were discussed and analyzed as to their basis in theories on how children develop and learn. Thus, the course content was immediately connected with Ideas About Children and the Process of Learning, a characteristic of teachers identified by Bussis and Chittenden (1970).

Another important aspect of the first class was defining the social studies. A simple attempt was made to connect this with the real life of the college students in the course. The instructor asked, if they met a new friend on campus or at the local pub, what did they want to know about them? The students replied, "Where are you from?" (That's geography.) "What sports do you like?" (That's sociology.) "What does your father do?" (That's economics.) And this continued until all of the social studies were identified as related to what we are interested in right here--people and their world (or better, universe). Social studies is the study of the social.

Then there was a brief analysis and discussion of the key concepts and major methods of inquiry in each of the social studies. Reference was made to ways educators had applied this knowledge to curriculum development for elementary social studies. Several children's textbooks and teachers' guides from different publishers' series had been brought to class by the instructor. These were examined and discussed in the light of the above discussions. These texts were also on hand in later classes for reference. Also, in later classes, the instructor brought to class a profusion of children's books as reference material.

The course requirements for the semester were also discussed in the first class. Each student was required to begin developing his or her own resource files for teaching social studies. The first resource file

was to be a collection of artifacts and printed materials (pictures, maps, booklets, etc.). The second resource file was to be a file box of cards identifying community resources--places for field trips and people who might be invited to class to give demonstrations or information to the children. (This indicates Provisioning.)

Another major requirement of the course was that, later in the semester, the students would each choose an area from the scope and sequence charts examined that day--an area of inquiry for a specific age level in school--and write a social studies unit plan for that theme. This was to be a comprehensive unit integrating all areas of the curriculum in activities and projects and planned around a theme (Instruction). Another requirement for the course was that later the teacher candidates would work in small groups of their choice to create learning centers in the college classroom and to teach mini-lessons to each other. This assignment would be related to a unit and field trip that we were going to plan together and implement in the course. There was a social studies textbook for teachers, which was also introduced the first day.

Since the classes were two and one-half hour workshops, the instructor planned a learning-by-doing activity for the day. Map study was introduced and discussed as an important part of social studies. The subject would be returned to later; but for the first class, an activity was done that might be used with young children in elementary school. The teacher candidates were given the choice of three mapping activities, all related to them personally, as one would relate map study to the very young. Activity cards had the directions on them, and the students could work either alone or with partners of their choice.

One of the activities was to make a map of the route they had taken to get from home to school today, using legends and symbols, etc. Another activity was to think of what they had had for lunch and make an original map of where each item of food might have come from. United States and world maps were on hand for reference. The third choice of activity was to choose a partner, go outside to the school grounds and make a topographical map of the area surrounding the school. (Samples of this type of map were also on hand for examination.) Appropriate legends and symbols were to be worked out for each of their maps. Lots of art materials and large sheets of paper were on hand for their use as needed. When they were finished, they presented their maps to the class and discussions followed. This activity illustrated the indirect instruction methods of the developmental-interaction approach to teaching, with direct teaching on the rudiments of map making by the instructor as individuals needed it (Instruction, Provisioning). The role of the instructor was also discussed.

The unit method of planning was introduced early in the course. This unit study began with the instructor's bringing into class many artifacts and household objects from the colonial period in American history. This realia was all arranged on a large table when the students entered the classroom. The instructor asked the students one question: "What do these things tell you about life in colonial days?" They were encouraged to examine, handle and discuss the realia among themselves. Then they came together for a class discussion of their ideas. They hypothesized about the life-style of people in colonial America. They worked out a list of questions about things they wanted

to find out. Their questions were written on a large sheet of paper by the teacher as they discussed them; this sheet was kept for further reference. Then they processed the activity--they talked about the instructor's modeling one way to introduce a study and setting the stage for their own interests to be investigated. This was an example of the first stage of a unit. Such procedures were related to learning theory, or Ideas About Children and the Process of Learning.

During the next few workshop classes, the teacher candidates worked on various interests in this colonial America unit. Working in small groups, they practiced several ways of collecting data and processing information (guided by their original questions). They made charts of colonial occupations, comparing them with today's occupations. Some students did surveys of who in the School of Education was currently pursuing a "colonial" craft such as weaving, quilting, basketry, etc. They did time lines and bulletin board displays. Some students set up a learning center for social studies in a corner of the college classroom. These activities were planned in class meetings at the beginning of each workshop. A process of shared decision making was done, and individuals and small groups would pursue their interests and report back to the class at a closing meeting. A profusion of books and children's literature on the colonial period was made available by the instructor, as well as the children's textbook series (for reference) that they had examined the first day. At the end of each workshop, they also had a discussion of the process of learning they were experiencing, and how this might be replicated with children. They recognized that they were learning the methods of teaching social studies by doing them

as children would. The role of the teacher was modeled by the instructor, and this was discussed too. They were aware that these activities were part of the second stage of a social studies unit--the Data Gathering and Processing Information Stage.

A part of this stage was the taking of a field trip to a restored colonial village. Having done some investigating of colonial life through the above projects in two or three workshops, the class then began to plan their own field trip. The instructor showed a film on planning and taking field trips in social studies. The students chose partners and worked together on the aspects of preparing for the field trip that interested them. (The Humaneness of the developmental-interaction approach to teaching was seen in the constant opportunity of choice and of following individual interests given them by the instructor.)

Two class workshop periods (entire mornings) were set aside for the teacher candidates to go on the field trip. They went twice because the teacher always should go twice. The first time, the teacher goes to look over the site and plan how to guide the children and what focus the trip should have. The second time, he or she takes the children on the trip. So the teacher candidates first went to "case" the site as though they were planning a trip for children. A guide at the colonial village took them through the town and talked about the history of the place. On the second trip, the teacher candidates had the added interest of a guided tour through a "please touch" house (museum) in the village.

After the first planning trip, the teacher candidates had even more questions to explore on the "official" trip. They worked in small groups to prepare materials for the trip as they might for a class of children. One group worked out a map of the route, with landmarks to look for and check off along the way. Another group worked out lists of questions that the class members wanted to find out when they went through the house. Another group realized that the teacher had better check as to where the bathrooms were before taking a class of children to such a place, and where they could sit down for a snack after going through the museum house. So they called the central office of the museum village and prepared such information. Another group decided they wanted to take a tape recorder to interview the guide and prepared for that. Another group thought that a good way for children to gather information was to provide materials for sketching and provided those materials. All this material was put together on clipboards so that each member of the class had one to check off things on the lists, make notes and do sketching on. The teacher candidates returned to the colonial village with a high interest in finding out more about the life of the people in those times. Indeed, they had decided that they wanted to go through two houses that morning, and such arrangements had been made. On the first "planning" trip, they had found out that the "please touch" house had been a Tory tavern during the Revolution; and the other house they wanted to see had been lived in from the earliest pioneer days, and its household furnishings spanned ways of life in two different centuries. Also, issues about the way the colonists dealt with the Native Americans (and the way they deal with them today) had arisen in their investigations and

discussions in class, and they wanted to find out more about that in the museum village they were to visit.

In the workshop class the week after the trip, the following activities were planned. As the teacher candidates discussed their own trip, they were asked what they would do with children after a trip. They had been given an assignment to research this phase of a social studies unit in the textbook and other resource material. They came to class full of ideas and enthusiasm. In a class meeting, they did shared decision-making with the instructor and each other. They decided to have an entire workshop in which they taught each other the colonial crafts. Then they chose two or three others to work with and chose which craft to investigate and teach. For the rest of that workshop, they planned in their small groups for this activity. They had decided to also set up learning centers about each craft. They had to plan and gather the materials needed and the teaching strategies they would use. As they planned in their small groups, the instructor walked around the room, helping each group as needed. The students realized that such follow-up activities would take place in an elementary classroom over a period of several weeks. They had to do a capsule version in one workshop, for the experience of learning how to plan and implement follow-up activities in the course.

The follow-up craft activities took place in the next week's two and one-half hour workshop. The student teachers brought their materials to the class and set up their learning centers as soon as the class began. Then one member of each team stayed in their learning center to teach their particular craft while the other members of the team walked around

the room to the other learning centers to do mini-lessons on the other crafts. In other words, they alternated the teaching and learning roles, so that all students did some peer teaching and some learning as children would in the different craft centers.

It was an exciting, busy workshop. One teaching team had set up a weaving center and was teaching the other students how to make belts the way the Native Americans did. Another team was teaching how to make butter, which they promptly ate on a piece of cornbread that had also been made in that center at the beginning of the class. (They brought their own oven to class--not very Early American.) Two students were teaching handwriting with real quill pens. Another team had a quilting and sewing center. There was another team teaching others how to make pottery out of clay. Two students had gathered artifacts and information sources about Native Americans and had investigative activities available. Another team was teaching how to make simple baskets. There was also a quiet corner where students could go and sketch Early American artifacts such as brass candlesticks or Betty lamps. In each learning center, there was a display of both artifacts and books illustrating that particular craft. All of the teacher candidates had the opportunity to visit each center and try each craft, as well as teach for a while in their own center.

After the crafts workshop was over, some students stayed to help the instructor put up displays of their work in a permanent learning center for social studies they had maintained in an ell of the college classroom. It so happened that they were still there when the students for the next class came in--the students from the high school teacher

preparation program. The next class was their course on how to teach social studies at the high school level. Several students came rushing over to the ell where we had been displaying our class work, eager to see what we had done that day. One said, "We're talking about that in our class--you're doing it."

At the next workshop, the teacher candidates discussed their own experience in the past few weeks of learning-by-doing in a social studies unit. They identified the first stage Building Readiness for a Unit, when the instructor had brought in the artifacts and they had begun to hypothesize and ask questions. Then they discussed other possible means of sparking children's interest in a new unit, such as showing a film, etc. Next, they processed their own experience in the second stage of the unit, Data Gathering and Processing Information. They discussed the teacher's role and the methods of direct and indirect Instruction. The importance of the teacher's Provisioning was noted. They also discussed a variety of possible ways for pulling information together into generalizations and evaluating information on other units. Also, possible ways of culminating units were discussed.

In the second part of that workshop, the instructor introduced the idea that an important learning resource could be people who are invited to the classroom to give information about their work to the children or teach a craft, etc. As an example of this kind of resource, the instructor had invited a classroom teacher to come and bring slides and children's paintings, etc., from a unit that her sixth grade class had done. They had studied the Western Movement in the United States by using the folk songs of the era as a basis for their investigations of

the history of the times. The visiting teacher told how she had gotten the idea for this and how she had used a variety of films and filmstrips, music and art activities, history books and children's literature in this interdisciplinary project.

Throughout the semester, the major Instruction and Provisioning strategies of the developmental-interaction approach to learning and teaching were employed in the social studies course. The prospective teachers had the opportunity to experience and analyze the role of the learner and to observe the model of the role to the teacher in these teaching strategies. These included individualized instruction, cooperative learning in small groups, self-pacing, shared decision-making, choices for children (college students in this case), building on strengths and interests, active learning, communication skills, questioning techniques, hypothesizing, generalizing, data gathering and classifying, analyzing data, problem solving, inquiry, class group meetings to plan and evaluate, scheduling large blocks of time, creating learning centers, using hands-on materials, and integrating curriculum around a theme.

The major culminating assignment for the course was that each teacher candidate was to plan a comprehensive social studies unit. They could choose a topic for a specific school level, using the scope and sequence materials presented at the first class as a guide. It should be a unit they could use later when teaching in an elementary school. The unit had to be interdisciplinary, i.e., integrating all curriculum areas around a theme. The students were given guidelines as to what should be included. After a statement of the topic or theme, they were

required to state the goals of the unit and the key concepts to be covered. They had to plan the use of community resources and at least one field trip related to the theme, with introductory activities, data gathering and processing activities. There had to be follow-up activities after the trip. The teacher candidates had to include both audio and visual presentations. They had to plan specific non-verbal systems of study, such as artifacts, maps, charts, graphs, etc., relative to the unit's theme. Also, there had to be plans for specific oral systems of study, such as group discussions, pupil planning and self direction, individual conferences, small group research and reports, and questions planned by the teacher to guide inquiry and thinking skills. The prospective teacher had to include in the unit plan the specific ways that he or she was going to integrate the curriculum area through activities--arts and crafts, music, language arts (reading and writing related to the theme), mathematics and science activities related to the theme.

The methods of classroom organization and group arrangements for different parts of the unit activities had to be pre-planned also. The prospective teacher was to include plans for space arrangements (learning centers) and time schedules, as well as special materials needed for the activities in the unit. The teacher's role in the various stages of the unit had to be defined, as well as the role of the children in their learning.

Each prospective teacher was expected to choose a unit topic that he or she hoped to teach in the future. For those interested in older children, themes such as "Life in Ancient Greece" were chosen. For

those interested in younger children, topics such as "Studying Our Town" or "The Dairy Farm" might be chosen. The students presented their units to the rest of the class during the final workshop classes. Then they were bound into the book, each having all the units. The books were given to the students at the end of the course. They took this, their own unit resource book, with them to their first teaching jobs.

(6) EDUC I 463: "Principles and Methods of Teaching Elementary Mathematics". The methods course in teaching elementary mathematics is designed for four purposes. It helps prospective teachers to know the scope and sequence of the mathematics curriculum in the elementary school. It helps them to understand and apply current ideas about how children learn. The course also encourages teacher candidates to focus on individual children's learning. And it gives them experience with a variety of learning materials and teaching techniques in order to meet the needs of individuals. Three textbooks are used in the course, and two professional journals are assigned reading.

The mathematics methods course is divided into eight modules. Three of these deal with the teacher's work: the mathematics content, the lesson plans, and the learning materials (or environment). This is the Instruction and Provisioning (Bussis & Chittenden, 1970). The other five modules deal with children as learners [Ideas About Children and the Process of Learning] (Bussis & Chittenden, 1970). Attention is given to specific learning styles, or modality strengths. These methods classes ". . . focus on the learner: How [sic] mathematics is constructed as personal knowledge, how children learn mathematics, and what methods or teaching approaches are most effective with which

learners" (Elliott, 1987, p. 1). The modules that deal with the learner and appropriate teaching approaches cover the following topics: "Mathematics as a Human Endeavor . . . Basic Set Approach . . . Arithmetic Approach . . . Geometric Approach . . . Object-Game vs. Symbolic-Game Approaches in Mathematics" (Elliott, 1987, pp. 1-2).

The classes on the teacher's works include a study of long-range planning, unit planning, and daily mathematics lesson planning. Models of teaching and learning are considered, including peer teaching and cooperative learning in small groups (Instruction). The teacher's role in Provisioning for mathematics learning is considered. Mathematics textbooks are evaluated. Also, the teacher candidates use a variety of concrete mathematics materials in the college classes, when learning the teaching techniques and mathematics content. They are helped to prepare a budget for a mathematics laboratory.

One of the major assignments in the course is for each teacher candidate to compile a box of file cards with 15 mathematics teaching activities, all to be taught with inexpensive concrete equipment (under \$5.00 for each one). In addition, the teacher candidates learn how to construct homemade mathematics equipment. They are expected to include some learning activities with teacher-made materials in each of their file boxes. Another assignment is that one homemade project from the file box be developed and brought into class.

After the mathematics content and children's learning experiences have been covered, there are three class sessions on lesson planning. One of the major assignments for the semester is that the teacher candidates must write a long-range plan for a school year, a unit plan and

daily lesson plans. The long-range plans are shared with the class. The daily lesson plans are used for peer teaching in the college class. Seven class sessions are reserved for this peer teaching at the end of the semester.

This experiential learning on how to teach is typical of the course's approach to learning. A description of a class early in the year will illustrate the professor's modeling of the teaching methods and the prospective teacher's learning first like children learn. At the beginning of the class, the mathematics instructor told the prospective teachers what the mathematical content of the lesson was. It was the connection between the surface area and the volume of rectangular shapes (within the content of geometry). She asked the students to choose their own groups of three and specified that they be people with whom they had not worked before. She later talked about why she put them in groups of three. She said she wanted them to realize that that is a responsibility that both they and children can take in schools. She also said that you get more conversation going, to discuss the mathematics. This makes the later whole class discussion more powerful because students are more likely to offer ideas that have already been validated by their peers. And another reason she puts them in groups of three is that you get better learning. Some students may not notice certain parts of the problem. "If they are working in groups of three, they have to discuss possibilities and decide which one to pursue. My reason for doing it (small grouping) is that people learn more mathematics this way."

She gave every group 64 cubes and told them to (1) build a building with all the cubes, and (2) count to find the surface area. While the students worked on this, the teacher's role was to walk around and observe them at work. The groups were working next to each other at long tables. Two of the groups had gotten to the point that they were writing down the values for the surface areas of their two buildings and they noticed that they had different numbers. One said, "Wait a minute. We must have done something wrong." Because they all had the same number of blocks--64--they expected the surface area to be the same. Another said, "How can our building have 80 and yours have 72?" Their immediate reaction was that one of them had calculated wrong, so they began counting out again to find the surface area of their building. Each verified that they were correct.

At that point, the instructor stepped in and asked a question. "Are you sure you're both right?" They both said "yes". Then the instructor asked, "How can you explain that--Why is it that you get different numbers in surface area for the same 64 blocks in each building?"

The students were quiet for a few minutes. They were intently looking at their buildings. Then three talked about differences they observed. One building had many cubes with three sides on the outside, the other building had lots of cubes inside and only two sides of other cubes showed. Therefore, the surface area of that building was smaller.

The teacher said, "I just stood there until that happened." Then she asked, "What would the buildings look like if it had the absolute largest surface area?" She asked the other group, "What would your

building look like if it had the absolute smallest surface area?" She asked them to imagine that in their heads first. Then, after they gave her an answer, she asked them to construct that shape to verify their ideas.

The professor modeled the teacher's role during that small group session. It was to walk around, answering routine questions and observing. Then she stepped in "when I saw something happening that could be pushed to a higher level". She made it clear later that she never made an effort to force that to happen. She said, "Not every group hit that point."

She explained, "It's one thing when they're answering my question and it's quite another thing when the question is theirs, and that doesn't happen every time." She said she designs mathematics exercises where that happens some of the time. She explained, "It's the teacher's role to make sure that moment isn't lost and something happens in it that formalizes an idea" (Instruction).

After the students had worked in their small group for about 15 minutes, she asked them to come back together for a whole class discussion. But before that, she had gone back to the two groups and asked them to share their experience with the total class when the discussion started. She explained later, "I always go over and say I was really excited, watching you work that out. Could you talk about that to the rest of the class?" She said she always does this with children, too. "It goes back to being respectful," she said. "So you send a signal that you think what they have done is good work and you would like them to share that with the large group." This is the Humaneness, or Respect

for Persons recognized by Bussis and Chittenden (1970). The students then processed the mathematics experience with their 64 building cubes by discussing it in the whole class group. The instructor said this gave everyone a chance to see what was the same and what was different about their own buildings, and what they had figured out.

At this point, the instructor talked about the objectives of the lesson. She asked, "What is it you were learning by doing this activity?" Some said they were surprised that the surface and the volume of the buildings were different. Others said that this was the first time they had seen the connection between the formula for surface area (which they already knew from mathematics books) and the actual act of counting. Others said it had never occurred to them that they could use the formula. The instructor said that by doing first the small group discussions and then the total class discussions, "You could take the thing that happens with one small group and make it accessible to more people in the room." In other words, the students were learning from each other.

After the instructor processed the mathematics content, then she processed the teacher education (methods). She asked the teacher candidates, "How was this different from the traditional mathematics classes that you've had?" They talked about the value of working in groups and having someone else to talk to when they got stuck. They said when they worked alone, they just could not do anymore if they got stuck. The instructor also asked them to identify what her role had been as teacher. Some said, "No--you stopped--you asked us a question at the right moment" and "You got us going." The instructor asked the prospective

teachers to examine the design of the lesson and the sequence of questions asked. They identified both direct and indirect Instruction. Then they discussed the advantages of working in small groups, large groups, and alone.

Many students said they could now understand what was explained in the whole class discussion (the connection between the counting of blocks and the building's surface and the formula) because they had just done the small group activity. They said it was based on experience. Without the activity first, they said, they would not have understood the whole class discussion. Also, many students said they liked being able to talk over the mathematics with a few people. They said they would not have gotten as much out of it if the instructor had done a demonstration or if they had read it in a book. The instructor said, "One never knows how many people really understand--that's one of the reasons for putting them in small groups, so they have more people to talk to."

The instructor made it clear that this kind of teaching could be done with any age. She said she had done this same building exercise with fourth graders, ninth graders, and eleventh graders. She said college students are often skeptical of this. They do not think you can have a sophisticated discussion with children until they see this modeled in a children's classroom, too. But the instructor said, "I wanted them to see that the style of teaching is appropriate to any age."

The instructor talked about integrating mathematics in interdisciplinary projects. She said, "It's hard to do mathematics without

talking about science because that's where the numbers come from that we are analyzing." When the class studies measurement or graphing, she always starts with some real situation. She gave, as an example, "taking a collection of leaves and making ratios of the wideness to the length". She said, "It provides an opportunity to teach a lot of mathematics and to apply mathematics, to make connections like that."

The prospective teachers in the course are helped to become knowledgeable about the available materials for mathematics teaching. They use a wide variety of concrete materials in the course. Also, there is an assignment to plan a lesson for which they use homemade material for teaching mathematics. They have a class session on evaluating publishers' textbooks. Another assignment is to read ten professional journal articles on mathematics teaching and hand in critiques of them. Some students have expressed gratitude for being introduced to professional journals in the course. Thus, the course gave attention to the Seeking Professional Growth by the Teacher (Bussis & Chittenden, 1970).

The instructor said she spends time exploring with the prospective teachers some ideas about Diagnosis and Evaluation. She says that the practicum (student teaching) is the proper place to learn record keeping. She cautions students to be sure that their record-keeping is in line with their philosophy. She says that many people say process is important and then grade problems right or wrong. "There's an inherent conflict in the message you're sending to the students." She says that teachers need to analyze what they are really doing. "In terms of modeling, I talk about the things I value and the way I determine my grading system." For example, she tells students, "These articles are very

important, therefore I have rated these as a certain number of points in the grade."

She talked about the importance of helping the teacher candidates see that "you need to start with the concrete materials". She said, "I really push on getting them to listen to the students and honoring what the students are doing." She said she tries to get the prospective teachers to "ask them the questions, provide them the materials, and don't tell them how to do it. Then try pushing at meeting the child where the child is." She says it is important "to work from there-- from the child's knowledge base, to where you want them to be." This is related to her helping the prospective teachers understand Diagnosis and Evaluation. "Basically," she said, "I work at really making them aware of listening to the child."

Data on the Follow-Up Study of Teacher/Graduates

The case studies of the ten teacher/graduates in the sample will now be presented. There are five in the sample who are teaching in traditional schools and five who are teaching in developmental-interaction schools. The methods of choosing the sample and collecting data have been given in Chapter 3. The rationale for the case study method is also given in that chapter.

The case studies are based on both the interviews with the sample of teachers and the observations that the researcher did in their respective elementary school classrooms. As the researcher describes each teacher's work, she will point out how each one expresses the eight

characteristics and roles identified by Bussis and Chittenden (1970) as typical of teachers with developmental-interaction approaches to teaching and learning.

Next, the researcher presents the more quantitative data. This is taken from the questionnaires and observation rating scales. The instruments used are described in Chapter 3. Samples of each instrument are included in the Appendix. By agreement with the teacher/graduates in the sample, they have been given other names in this study.

Qualitative Data: Case Studies of Ten Teacher/Graduates

Five Teachers in Traditional Schools.

(1) Mark Thomas. Mark Thomas was teaching in a small town in Massachusetts. Since graduating from the University of Massachusetts, he had been a classroom teacher in this school for three years. He characterized the school as traditional. He was teaching a sixth grade of 15 students. He had no teacher aide.

Mr. Thomas said that, in the Fall, he had found the room arranged with desks in rows, like all the other rooms in the school. He had "started like this," because this is what the children were used to. But within a month, he had arranged the desks into a U-shape, and later he put them in groups of three or four together. He decided on changes of desks often because he "believes in flexibility". This approach to classroom space is typical of the Provisioning of the developmental-interaction type of teacher.

Another aspect of Provisioning, the daily time schedule, was typical of the traditional approach to teaching. Each subject was taught

separately, in unrelated sequence, each day. Mr. Thomas began the day with a short meeting to discuss plans or tell any news the children might have. He always did a "Word-a-Day" calendar, in which a new vocabulary word was introduced every day. He said he got his idea from the Reading methods course at the University of Massachusetts, "and the parents like it when they take the word home to dinner".

Science class was first period each day. Mr. Thomas remarked that there was a new textbook. He later explained the school's policy on textbooks: "Our principal feels that once you have bought a textbook, you have bought a curriculum." By contrast, Mr. Thomas expressed his own Ideas About Children and the Process of Learning regarding curriculum: "She [the principal] doesn't seem to realize that a curriculum is the ideas you want to cover and the response of the students. . . It could be from any number of sources." This is the developmental-interaction teacher's approach to curriculum.

The principal was new that year. When Mr. Thomas had tried to explain his approach to building curriculum, quoted above, she had replied, "Never mind--finish the book." He said that the former principal had let the teachers develop the curriculum from several sources. But this year was Mr. Thomas' tenure year, and he was getting married in the Spring. He had to keep his job and this entailed getting a good evaluation from the principal. He felt the need to constantly reconcile the new principal's textbook emphasis and his own understanding of children's experiential learning. He remarked that this conflict "puts pressure on me".

He explained that the new textbook did include some materials, "but they don't have enough activities". He said, "Especially science, for me, has to be hands-on, play, find out" (Provisioning, Instruction). He had managed to do several integrated units in science. One was a unit on electricity. The textbook had said to allow one day for a particular experiment. "But it took three days because I let them explore," he said (an Instruction method of the developmental-interaction approach to learning). The students had written up a lab report at the end, "to bring in some language skills and organizational skills," said Mr. Thomas.

In the electricity unit, Mr. Thomas had paired the students for cooperative learning (another Instruction method of the developmental-interaction approach). Each pair was responsible for a different activity and reported back to the class on it. One group made an electric generator, another constructed a door alarm, another constructed a telegraph set and used it in the school, etc. Mr. Thomas said, "I let them go on their own with it." He had all the materials they would need in the classroom, but "they have to do the research and put it together" (Provisioning, Instruction). He also had other book sources, in addition to the textbook, available for their research. He remarked, "They'll have to look it up."

Mr. Thomas talked about his introducing independent studies, cooperative learning, and experiential learning to these sixth graders (developmental/interdisciplinary Instruction). "It was difficult because the students here aren't used to that kind of thing." He described their traditional schooling of the past: "They're used to

being told what to do. They did not know what to do on their own."

Mr. Thomas saw his role as enabler, guide, and facilitator in these indirect Instruction projects of the developmental-interaction approach to learning and teaching. He had introduced the project, planned with the students, and paired them up for their cooperative learning. Then he went to the students, moving from group to group, observing their work and helping as needs arose. He said, "I float around, sit down and help where needed. . . . I keep an eye on what they're doing."

He talked about other science projects they had done. When national attention was focused on a space shuttle trip, his students had pushed their desks to the "furthest corners of the room" and used the floorspace for a life-sized map of the interior of the shuttle. They measured and mapped the exact amount of space for the living quarters of the people, taping it on the floor. Then they invited the other classes to come in and hear how the astronauts lived in such a small space. This project integrated mathematics, reading, science and social studies.

There were several ecology projects that year. Mr. Thomas recalled, "In the Fall, in science class, we went out every Friday to the woods behind the school." They did many science activities about plants and trees there. Also, a major project had been established in the school before the new principal came. Every year the two sixth grades went together to a nature center in Maine and stayed a week. The students had started raising their own money for the trip the year before, in fifth grade (a spaghetti supper raised \$2,000--the students

cooked; and a car wash had raised \$200, etc.). Mr. Thomas had noticed a chart-keeping activity that his class had especially liked in Maine, so he had continued it in the classroom. On a bulletin board, there were three charts, one each for animals, plants and birds. Students filled in what they saw, where and when, and brief information they found in books available in the classroom (thus integrating reading and science).

Mr. Thomas requires the students to write a lab report on everything they do in science, and he usually assigns this as homework. He explained, "The parents want an hour of homework a night for the kids." He has found a good solution. "By the time we've finished playing all period" (exploring, hypothesizing, experimenting, learning by doing) "there's no time to write up the lab report in school." So they do this as homework, and "Every day, I check their lab books," he said.

After science comes mathematics period. The two sixth grades in the school "switch children" for both mathematics and reading periods. This grouping is set at the beginning of the year and does not change. The basis for grouping is that of the traditional school--standardized test scores. Opinions of the former teacher, as well as Mr. Thomas' "perceptions of the kids" are also considered. However, he said, "I don't like teaching reading so structured and in specific groups." But the new principal has insisted "always teach in their basal groups" for reading. This year, Mr. Thomas had been assigned the "lower reading group and the higher mathematics group" from the two sixth grade classes. He commented, "I don't think the School Committee [Board of Education] in the town should tell you how to group children."

Because he was required to "follow the mathematics textbook" by the principal this year, he had taught his mathematics students more as one group this year (a more traditional Instruction method). But he described the more developmental/interdisciplinary type of mathematics Instruction methods he had done for the past two years, under the old principal. "I had a completely individualized program and I would do almost no direct teaching to the whole class." He described the mathematics materials he had used: manipulative materials and "planned units and a series of packets". He helped individuals progress at their own rate. "In one day, I'd be helping with division, multiplication and decimals, addition." He grouped according to individual need, when and where it occurred. "If I saw that three were all stuck on division, I'd say, 'Come here and we'll do a lesson together'." He commented on the teacher's role in this developmental-interaction method of Instruction: "It takes a lot of teacher preparation at the beginning-- you have to have five units at once."

However, this year, the constraints placed on him by the new principal had narrowed his options for teaching methods to the traditional textbook-centered approach. Nonetheless, he had succeeded in doing a few projects that integrated mathematics with other subjects. There was a bulletin board display of a study of ratios. Mr. Thomas had asked the children to bring in cartoons and comic strips from newspapers and magazines. Then they had reproduced them in a larger size by figuring out ratios and scales. The children had also thought up original quips, saying the same thing in different words. This project integrated mathematics, art, language.

The class was engaged in an active-learning mathematics project on the day the researcher observed. The school had been given a grant to redesign the playground. Mr. Thomas had persuaded the principal that his class could learn a great deal from a mapping experience, as their contribution to this school program. They spent the mathematics period that day outdoors, pacing and measuring the extensive playing fields, with Mr. Thomas moving from small group to small group, to help where needed. He later commented on the project: "They'll use measuring, decimals, division and multiplication to develop a scale, to draw a map" of the playing fields area around the school.

After mathematics period, the children changed to their reading groups, some going to the other sixth grade class and others coming to Mr. Thomas' class. He had the "lowest group in reading" from the two classes. He had perceived that these children did not like to read and found the basal stories dull. So he had started them off in reading more interesting children's literature. He said, "They were reading novels--they loved it and wanted to finish it" (the activities associated with the novel reading). But the principal had come into the classroom and said, "You can't sacrifice the basal time to do that." Mr. Thomas repeated, "I was doing novels, but because of pressure from her, I stopped doing it."

The principal had insisted that he hold the teacher's manual in his lap and use the very words in it, while he taught a reading group. Also, he felt that he was prohibited from individualizing, because the principal often emphasized, "Always teach in the specific basal groups."

Nevertheless, in the reading class that was observed, Mr. Thomas encouraged discussions of the basal stories and kept asking for the children's ideas. Some responded, some did not. Later, he commented on that lesson. "They're very hesitant to say what they think. I keep changing the question." He talked about the traditional methods of Instruction that the students had been accustomed to, in the school. In all previous grades, they had had "a social studies workbook assignment, a reading workbook assignment, a mathematics workbook assignment." By the time these students got to Mr. Thomas' sixth grade class, "they were ingrained into that and didn't know how to do something on their own anymore."

Mr. Thomas had made his own large collection of children's literature, including many of the novels for upper elementary age children (ordered from a source he had learned about in the Reading course). These were in the library corner in the classroom. Prohibited from individualizing reading with these novels, he had found a modified use for them. He let the children in his class, as well as the fourth grade teacher's class, take them home and read them. Then he had several creative projects they could do as book reports. They could design a book jacket, do illustrations for the book, or make a diorama of a scene in the book. These projects integrated reading and art. The students could also do a "book review" for the class. Their book illustrations and book jackets were displayed on the bulletin board. The students could work on these book reports at home and in school after they finished the basal reader and workbook assignments.

Mr. Thomas talked about the conflict he felt in wanting to do creative, interesting projects in reading and social studies and science (developmental-interaction approaches to Instruction) and the principal's pressure to stick to the textbooks (traditional approaches to Instruction). He said, "It's tough, because you try to do a project, and you come up with something, and you're kind of looking over your shoulder--'Should I be doing this?'" He continued, "It's funny, because when I'm doing it, I feel guilty about it almost--because you're missing part of the textbook." He contrasted this feeling with his experience during the first two years of teaching in this school. The former principal had encouraged the teachers to individualize reading and all subjects. He accepted the integration of subjects in learning projects. Mr. Thomas had been able to use the textbooks as "a jumping-off place" and to do "whatever activity we wanted to do".

After lunch, there was a period in which the children went to special teachers for art or music on two days a week. On the other days, this period was given to creative writing. Mr. Thomas' approach was the "process writing" methodology of the developmental-interaction view of learning. Each child had his own "story folder". Mr. Thomas explained, "They can write about whatever they want to." They did peer conferencing and peer editing. Mr. Thomas commented, "Sometimes I edit with them--to teach them how to edit." When a student had finished his or her story, he or she could use the Bank Street writer/computer in a corner of the classroom. The students put their stories on discs and printed them out, making their own individual books. They often read each other's books. The students also wrote their own poetry.

Mr. Thomas said, "Each year, I've published a book of their poetry and writing, at the end of the year. I paid for the printing."

For the writing period and the social studies period in the afternoons, the whole class is together (no more "switching children" with other classes in the afternoon). Mr. Thomas said that he likes the "self-contained classroom" in the afternoon because he can be more flexible. He can continue the writing longer if it is going well, or he can give more time to social studies, as needed (Humaneness).

Social studies is usually the last hour of the school day, on four days. The exception is Wednesday afternoon, when five computers are brought into the class. While taking turns on the computers, others work in their language workbooks. These cover specific skills, such as using parts of speech, verbs, adverbs, etc.

There is a textbook for social studies, also (a traditional approach to teaching social studies). Mr. Thomas said, "Sometimes, we'll only do a page and a half in 45 minutes, because we'll get off talking about something else--some response of theirs." Thus, he is responsive to individual student's views of things, which is a developmental-interaction teaching attitude. He tries to take children's interests into his planning. He commented, "I think it's more personalized for kids." In their social studies textbook, this sixth grade was reading about other countries. However, Mr. Thomas took the time to relate the textbook information to the culture of their own home town. He said, "That has more meaning for them" (again, a developmental-interaction teaching concern). When the textbook covered foreign governments, he also "took the town governments in New England as an example". He had

asked the students to go to the local town meeting with their parents. Several had gone, and they were going to discuss this later in the week.

He said that he tries to keep the social studies period "relaxed and open, with small groups doing different things". His approach to social studies indicates the Humaneness (Respect for Persons) of the developmental-interaction type of teacher.

Mr. Thomas had done a few social studies projects that were not textbook related. One project had been a study of advertising, which integrated curriculum areas (a developmental-interaction approach to teaching). Children brought in objects from home or made up original products to advertise. For instance, one child designed jet-propelled water skis for which you did not need a boat. The children chose partners to work with. They had to plan and present original ads for radio, newspaper and television. The children could determine their own routine in this project, which integrated reading, art, language, science, and mathematics. This was one of three integrated projects on the bulletin board at the time of the observation. Others were related to writing and computer work.

The five computers were brought into the room on the day of the researcher's observation. Mr. Thomas organized the class for cooperative learning in small groups of three students each. Two groups worked together well, but the other three had difficulties cooperating. Mr. Thomas later commented that it had been hard for many children to learn how to work and learn together this year, as late as sixth grade, because they had not had that opportunity in the past. In this

traditional school, he said, "They're not used to original thinking, responsibility, sharing ideas."

Mr. Thomas discussed his methods of Diagnosis and Evaluation. He observes the students and keeps records. "I jot down things on what they've done," a descriptive, narrative kind of record keeping. Also, he keeps checklists: "How many papers did he really had in to me?" And Mr. Thomas keeps samples of the students' written work and mathematics papers. He explained, "It's half what I see them do and half what they write up." He diagnoses and evaluates each student according to his or her own needs and progress, then uses this information to plan for each student. He said, "My records are kind of informal--I individualize it." He said he does not compare children with their peers, but looks at the progress of each one. All these techniques are the Diagnosis and Evaluation methods of the developmental-interaction type of teacher.

The traditional school in which Mr. Thomas worked had a different view of Diagnosis and Evaluation. Standardized test scores were used for grouping children for reading and mathematics classes throughout the school. Mr. Thomas said that the grading practices had changed recently in the school. When he first came to teach here three years ago, only "Satisfactory" was given for students. But later the majority of the teachers had decided the school should have grades and report cards. So Mr. Thomas had done a private study. He used the evaluating procedures, informal observation and record keeping described above (his old methods) first. He said, "I made a list of the grades I thought they deserved, from what I had noticed about the kids." Then he "went

through their papers and did all the averages of all the grades that they'd gotten" on their tests and assignments. Mr. Thomas concluded, "And they were exactly the same as my opinions." He said he felt that the teacher's judgment was the best source for diagnosing and evaluating.

An important part of Instruction is the teacher's planning. Mr. Thomas said he usually spends two hours a night planning for the next day. Also, on the weekends, he gathers materials for projects and gets books from the local library. Then he "adapts as we go along," changing plans to meet children's needs. This flexibility within a plan is characteristic of the developmental-interaction approach to teaching. However, this year, the new principal had insisted that the teachers write their plans a week in advance and conform to the textbooks (a traditional approach to planning). Mr. Thomas said that, to meet the principal's demands, "I copy plans out of the teacher's manual, because that's what she wants." He continued, "It bothers me--she doesn't understand how teachers develop curriculum."

Mr. Thomas discussed his Provisioning of materials for the classroom. Since the new principal had come, there had been an emphasis on the traditional type of Provisioning--textbooks and basal readers. There were new textbooks in language and mathematics this year. All inservice workshops had been on how to use the textbooks "as written". All teachers had to comply with these demands.

In addition, Mr. Thomas had collected over the years the type of hands-on materials (Provisioning) typical of the developmental-interaction approach to teaching. He had made his own collection of

children's books, science materials, and manipulative materials for mathematics (such as Cuisenaire rods). He expressed his Ideas About Children and the Process of Learning regarding manipulative materials. With these, he said, children "can experiment and see concepts in a concrete mode". About the science materials he had given students, he said, "Kids can do it. . . . They can put the motor together . . . try it. . . . Will it work?" Then he said, "Hands-on takes you further than the textbook. The book isn't going to tell you if it works or not."

Mr. Thomas had made some materials for mathematics (Provisioning, Instruction). Among these were a set of fraction bars. "They like them," he said. He had brought his own collection of mathematics games and thinking-skills games. The children brought things to school also--one had brought in a physics kit recently. The class had studied ecology using natural materials found in the woods behind the school. When asked what materials he would buy if given a sum of money, Mr. Thomas said he would like to have more science materials. He said, "I think it's important to get kids doing things." He explained this Idea About Children and the Process of Learning of the developmental-interaction teacher: "It's the hands-on and observational things that you learn in science--the thinking skills--that relate to all subjects." This also illustrates his ideas about Provisioning and Instruction, a more developmental approach than traditional.

Mr. Thomas' methods of teaching in the classroom also revealed his Ideas About Children and the Process of Learning. He often divided the class into small groups for cooperative learning, to help each other and to plan and implement a project (Instruction). This organization

for learning is a method of the developmental-interaction approach. Also, Mr. Thomas believed in "grouping as needs arise" when two or more children had the same need for a mathematics skill. This is different from the set groups of the traditional or formal approach to teaching.

When asked if he thought the developmental-interaction or informal approach was suitable for all children, Mr. Thomas said it was and added, "That's one of the reasons I go into groups when I do a project." He said that, with this classroom management method, "The kids who can't handle it as much have some guidance" with peer help, in a small group. He encourages children with different abilities to work together on projects in science and social studies. "The quiet one is more likely to say something to the other two," he said. And Mr. Thomas builds on strengths in these small groups. He said, "They get to show their expertise."

Other Ideas About Children and the Process of Learning were evident in his teaching. He gave feedback and support with a positive approach to correcting mistakes. He commented, "I don't put them down for saying a wrong answer" (Humaneness). In discussions, he would accept all ideas and then say, "Does anyone else have an idea?" He said, "I try to pull them out and listen to their ideas." There were several children in his sixth grade class who "don't like talking". One quiet child had begun to offer ideas in small group activities. When Mr. Thomas had told her mother that she was now talking and "volunteering information on her own," her mother had replied, "This is the first year that's happened."

Mr. Thomas set up learning activities in which children could make choices and do shared decision making. These are Ideas About Children

and the Process of Learning that come from the developmental-interaction approach to teaching and learning. Mr. Thomas said, "In the small groups, they have a little more control--a little more responsibility--and they can bounce ideas off each other." He had planned a social studies project with the teacher of the other sixth grade, in which the students studied four different societies. The small groups of students had to find their own materials for research and decide what kind of presentation to do for the rest of the class. One group made a model of a Japanese house. Another group did weaving to illustrate their report on the clothing and textiles of a society (among other projects).

Mr. Thomas talked about having to lead the class gradually to this level of self-directed learning (important to the developmental-interaction approach). He said they had had no experience working independently before this year. He introduced this method gradually: "In the beginning, I gave them a little bit of leeway." He would give choices of specific things to do. He said that in their previous classes in this traditional school, "They haven't had much choice, so they're not sure what to do." Sometimes later in the year, still, he said, "It's a problem with our research projects."

Mr. Thomas tries to gear mini-projects to children's interests. He would say, "Well, what do you like?" "Horses." "Well, do that." He believes that children are capable of sharing in decisions about what they will study. But he did find that "some of them just need to hear direct teaching". He thought the reason might be that "it's possibly, in this school, what they have grown up with".

Mr. Thomas felt that the ideal in a classroom was a variety of teaching methods to meet individual children's needs. He said "there has to be a mix" between the direct teaching (traditional schools) and indirect teaching (interdisciplinary project methods). He was concerned with "matching learning styles," which he found difficult in a traditional classroom setting. But, he said, "By giving some projects and some direct teaching in each area, it should balance out, I think." He talked about the importance of the interdisciplinary project method of teaching, which gives attention to how a child expresses himself or herself, how he or she relates to people, as well as what he or she knows. Mr. Thomas said, "That's what life is about--they have to be prepared to deal with real life situations."

Mr. Thomas' Ideas About Children and the Process of Learning included a concern for the whole child's development. He gave attention to the emotional and social aspect of children's development, as well as their intellectual, academic side. He was aware of some children in the class who "have trouble relating to their peers". He mixes groups often, in everything but reading (where the principal prohibits it). His reason is so the children "can learn to work with others".

He thought that children's needs and feelings should definitely have a place in the classroom. He commented on the lack of expression of feelings in the traditional classroom, "when they sit in rows and you don't speak--you sit there and don't say anything until you're called on--you're more afraid than anything else". Then, for a teacher to encourage the beginning of the expression of children's needs and feelings as late as the sixth grade level, as Mr. Thomas had, could cause

some difficulties. His solution was described. He said, "I talk to them about 'my feelings and your feelings'. I'll have a session about 'What's wrong--you want to gripe about anything?'" He presented himself to the students as a real person. He said, "I kind of show there are times when we can be informal and personal and times when you have to respect people" (Humaneness: Honesty of Encounters, Warmth, Respect).

The special teachers for Art and Music had told Mr. Thomas that, throughout the school, there was a pattern of disrespect for adults among the children. He has tried to change this pattern in his class by discussing it and showing respect for the children as individuals. He said, "They've started cooperating more. It's that I expect it of them, wherever they are." He said, "In talking to some of the specialists, they like my class best." However, he was concerned about the class's reaction to substitute teachers. "I don't like being gone. I step out of the room--just in the hallway--and some start acting up."

There was evidence that Mr. Thomas was the kind of teacher who was Seeking Professional Growth. In the three years since graduation from the University of Massachusetts, he had taken two courses in a college nearby. There was little opportunity to build support systems among the faculty in his school. The planning was "almost totally individual". There were few faculty meetings because the new principal "doesn't believe in them". Yet Mr. Thomas had reached out to establish collegiality with the other sixth grade teacher. They had planned social studies projects for the two classes. Mr. Thomas' attitude was: "If you can team, there are advantages. You can bounce ideas around and get

a better program." However, he worked largely alone in this traditional school.

Another support system is the teacher's relationship to the parents of students in his class. Mr. Thomas said that other teachers in his school always sit behind their desks when having parent conferences. But, he said, "I pull out my chair and we sit down together," side by side. He thinks that the two parent conferences a year scheduled by the school are too limited--only ten minutes each. So he calls parents on the telephone when a need arises. He says it helps to understand the home situation for children, especially when they have problems. He said, "The new principal says it's her school, and that puts parents off." There had been many parent volunteers in the school under the old principal.

Mr. Thomas gave evidence of being the continual learner so typical of developmental-interaction oriented teachers (Seeking Professional Growth). Several times, when we discussed his teaching, he said, "I'm learning" or "You learn from that". As to his goals for the future, he wanted to "do some other things in teaching reading" and have more manipulative materials in the classroom for science and mathematics. He would like to "work toward an M.A. in computer education".

When talking about his teaching that year, Mr. Thomas showed a great deal of Self Perception. He said, "I'm too textbook oriented, but it's my tenure year." He had to get a good evaluation from the new principal. Because she was very traditional, Mr. Thomas felt some constrictions on his teaching. He said, "I originally wanted to do a lot more integrated programs and more hands-on type of activities." But he

had found that the "principal did not understand integrating things". He said, "I don't think I've really accomplished that goal."

Mr. Thomas was asked what advice he would give to a teacher wanting to begin a more developmental-interaction program. His reply was, "To start out with some structure set up in it and be very flexible." He thought that change should come gradually. He said, "You have to play it out a little at a time." And he added, "If it doesn't work, it's O.K.--to kind of roll with it and see what happens." He referred to a project that he was disappointed in, and said, "I see I have to give a little more structure to that project." He was learning from teaching. Seeking Professional Growth and Self Perception were evident in his attitude.

Mr. Thomas recalled his experiences as a student in the Interdisciplinary Program for teacher education at the University of Massachusetts. He said that, at the beginning, "I had no idea about styles of teaching. I went to more traditional schools." He found that the Interdisciplinary Program's approach to teaching was "very different from what I had been used to".

Mr. Thomas was asked what in the Interdisciplinary Program had enabled him to teach differently from the way he had been taught as a child. He replied, "I liked the whole way it was set up." He saw the way the program was organized as significant. He said, "It wasn't just lectures. It involved doing instead of just being told." Each class was a workshop for "two and a half hours, a long block of time". He said, "In Multi-Arts, there was time to do projects." In mathematics also, "there was enough time to use manipulatives. . . . Until you've

actually played with them, you don't know how it works". He continued, "It taught me that that's how children learn. We were taught, in the Interdisciplinary classes, that that's the same way we should teach kids." He contrasted this approach with the traditional approach. "It wasn't just 'Read this book', but 'Here, try this'."

He referred to the Curriculum course. The professor "would bring in a motivator--it got us motivated for our class". He said that in most of the courses, "we started off with an activity. Then we'd discuss what happened and how we felt about it." The discussion would include "ways we could use it". He said, "The philosophy behind the Program involved doing." But it wasn't just a theory. He said, "And even in the college classes, we did the science experiments . . . so we had to think it through as kids would" [emphasis his].

One of the outstanding experiences for Mr. Thomas was his participation in the Multi-Arts course. He said, "One of my biggest weaknesses was the arts. I was inhibited about it all. . . . That built confidence in myself, doing something with art." He talked about the method of teaching teachers. "We didn't just hear about making puppets--we made puppets. Going through the process, figuring out what you had to do--and using them." They had used them as children might. "We put on a little show for each other." He mentioned the workshop classes in dance and music, saying, "Most of us had never gotten involved with that."

One of the requirements of the Multi-Arts course was that each student develop his or her own appreciation of the arts on the adult level. He explained, "We had to go to five different events." He remembered going to an orchestra performance, an African dance group, and a string

quartet. He said, "You wouldn't think so much sound could come out of four little stringed instruments." Seeing his interest, the professor had arranged for him to explore some instruments. He recalled, "And then I did some messing around with music stuff on my own--making noises with different instruments."

Mr. Thomas had applied this learning in the arts to his teaching later. He said, "The process is important, and it's another way for kids to express themselves." He talked about why children need the opportunity to do art work. "A lot of kids aren't very verbal, but if they get a chance to draw, it's a way to let what they're feeling out" [emphasis his].

Mr. Thomas said that two results had come from the appreciation of the importance of art that he had gained in the Interdisciplinary Program. In his teaching since then, he has "tried using a lot more art than I ever would have," integrating the arts frequently in projects for his students. And, at the time of the interview, he was engaged to the art teacher in the school system where he taught!

Looking back at his experience as a student in the Interdisciplinary Program, Mr. Thomas said he also valued the two-day prepracticum while he took the courses. He said, "One of the biggest strengths was that we were in classes with kids a lot." He had an opportunity "to see classes and teachers right away. Then we'd come back and talk about what we did in the class that week, in the Curriculum course." It was valuable for him to hear what the other student teachers were doing. Also, he was able to try out the methods of teaching in the prepracticum class, after he had learned them in the workshop courses. "You see some idea and get

a chance to use it" in the prepracticum. He continued, "We were required to do a reading evaluation with kids, to do an art project with kids" [emphasis his].

He mentioned the "Integrated Day" Day, a part of the Curriculum course. He said, "It was planned ahead for a month, for what you're going to do on one day, and really integrating that." He said, "It was hard work, but very valuable. And it was a really good first taste of planning what you're going to do with a unit." He contrasted the Interdisciplinary Program with a more traditional teacher education program of lectures and book learning that some of his friends went through. He said, "I thought the experiential approach and spending time with kids was much more important."

He summarized his course experience in the Interdisciplinary Program: "It's learning through experience, activities. It really showed me that that's how kids put things together, how they learn." He related this to his own teaching now. "That's why I'm so activity oriented now. I want to do more projects."

Mr. Thomas had also gained a child-centered approach to teaching from the Interdisciplinary Program. He said, "It's not so much 'Can you deal with the subject matter?' It's 'Can you deal with kids and keep them interested and keep yourself going?'" From the prepracticum, he had begun to learn how to individualize instruction. He said, "And just spending time with kids--you can't understand how a kid is reacting to something, or whether he understands it, on paper." He had learned to go to the child, to move from child to small group, around the room (a teaching method of the developmentally oriented teacher). He said,

"You have to sit there and actually work with a child, or see how he reacts, and ask him a question" in order to find out whether "he really understands the concepts." He thought the two-day prepracticum each week, at the same time he took the workshop courses, was "one of the most important things".

Mr. Thomas talked about his perception of classroom teachers with the developmental-interaction approach. He said, "There's a certain type of teacher that fits there, and not everyone is going to be humanistic." He said that this type of teacher "is interested in a child's strengths, building on what they can do, and thinking of them as people--and a mutual trust". He thinks that not all teachers can do that--"They are more into the traditional way".

Mr. Thomas wondered whether anyone could actually be taught to be humanistic. He equated being humanistic with the developmental-interaction approach to teaching, and he contrasted this with the traditional approach: "In Interdisciplinary teaching, you have to be extremely patient and flexible and willing to change in the middle of the day. And some people can't deal with that. They have their set routine . . . and if something comes up, it blows them away. Maybe they shouldn't be teachers."

There were two other features of the Interdisciplinary teacher education program at the University of Massachusetts that Mr. Thomas thought were significant. He talked about the collegiality that was developed among the students, from the way the courses were organized. He said, "They were the only classes I've had where they got to know each other in the class, in college courses." Then he said that they

were the first courses that had demanded hard work of him. "They were the first classes in college when I had to work and keep up. In my other years at college, it was easy to get by."

When asked in what ways he thought the Interdisciplinary teacher education program at the University of Massachusetts should change, he gave one suggestion. "I think, possibly, deal with the fact that you might end up in a traditional school. Talk more about how to adapt." He said a lot of schools appear to be leaning toward traditional education today. He gave the example of his present school, contrasting the traditional and the interdisciplinary approaches. "In the traditional, it's almost the quantity of learning. Our principal wants us to finish the book." In the Interdisciplinary approach, he said, "It's the quality of learning. It's more laid back, relaxed." He said his new principal hears the teachers' input but says, "We're doing it my way." Therefore, he said, "It's not a happy school this year."

He talked about his own adjustment to this unhappy situation. "You have to stick to your values. You have to find a way to do it, if it's just short projects that expand what was in the textbook." Mr. Thomas planned to get his tenure that year, marry the art teacher in the Spring, and teach there one more year while looking for a job in another school.

(2) Emily Lawson. Emily Lawson was soon to complete her first year of teaching when she was observed and interviewed for this study. She was teaching a class of 20 fourth graders in a large elementary school. It was located in a suburban town near a major city in Massachusetts. She characterized the school as traditional. There was no teacher aide in the class.

At the beginning of the year, Miss Lawson had found the desks in rows, like the other classrooms in the school. She soon rearranged the desks into groups of two to five. Her reasons show the values of the developmental-interaction approach to teaching: "I arranged the desks this way so they can work in groups and help each other." This type of Provisioning and Instruction took place in the afternoons, when she taught two subjects, science and social studies. She planned activities for cooperative learning at that time. She said, "I pair them up so someone who is weak in reading will be next to someone who is strong."

The room arrangement also showed her concern that children be self directing. Open shelves held many supplies, readily available to children as needed. There was a library corner, with a bookcase full of children's novels. Miss Lawson said that this was her own collection, which she had made since the beginning of the year. When she first came in the Fall, there had been only textbooks in the classroom. Miss Lawson had set up a paperback book ordering scheme for the students.

There was a science learning center in one corner of the classroom. A table there held things that had been brought in by the children-- rocks, leaves, bark. There was also an aquarium containing fish and plants. On the bulletin board, there were beautiful paintings of undersea scenes. Miss Lawson said these had been done when the children went to art class, taught by a specialist once a week.

The bulletin boards were filled with children's work. One held drawings of different geometric shapes. Another had the heading "Magical Tales", which had original stories written by the children

posted under it. A large part of the blackboard was covered with assignments for groups of children, listing page numbers in the reading books, spelling books, vocabulary books, and mathematics books that the children were expected to cover that day.

Both the room arrangement and the time schedule are aspects of a teacher's Provisioning. The time schedule in Miss Lawson's class was typical of the traditional school, with separate subjects following one another in unrelated sequence. Her schedule was dominated by the school plan for exchanging children among different classes for grouping in reading and mathematics.

When students arrived in the morning, they did "early morning" assigned work at their desks. Students had the responsibility for taking the attendance and doing the lunch count each morning. Then half of the students left to have mathematics class in another room, and other students came in to Miss Lawson's room. From three fourth grades in the school, Miss Lawson was assigned 28 children for mathematics, whom she described by saying, "They are the top group in math." She started the class by saying, "Let's open our math books to page 23." After reviewing the information on angles, she asked the class to turn to page 320. Then she gave a lecture on angles, using the blackboard, to all 28 students. She later explained why she prefers to teach the class the same thing at the same time: "Within that 50 minutes, I don't really have the time to take five kids here and six kids over here." She says, "I present a lesson and we do more discussion and evaluation and analysis type things."

Miss Lawson felt pressure to cover the textbook. She said, "They are very competitive; the school is that way--competitive." Still, she felt the need to help individuals, so she had devised a way to do this. "I try to stop my lessons 15 minutes early, so I can help." Asked whether she had any manipulative materials for mathematics in the classroom, Miss Lawson said she did not. She stated, "We use the textbook." Her mathematics class shows the Instruction and Provisioning of the traditional school.

After mathematics class, there was recess, then Reading class. As her students took their books and left the room, others came in. She was assigned 10 children for reading class, whom she described as "the low group". Assigning children to low, middle, and high ability groups is a traditional type of Provisioning for Instruction.

Miss Lawson said that the school was reluctant to change children from one group to another, even if a child progressed beyond the level of the group. She said, "The groups are usually set in the Fall." Indeed, when she had felt that a new child was misplaced in the low group, "it took from September until April" for her to persuade the school authorities that the child needed a more challenging placement in a higher reading group.

When asked how the children felt about being called "the low group", Miss Lawson did not discuss their feelings. She replied, "They can tell, although we use a different series." She then discussed the basal series of reading books, repeating, "They know."

Miss Lawson made allowances for her reading group, based on her perception of their ability. She said, "It is the low group. They're

not so good verbally." She was then asked, "If their strengths are not verbal, what do you think their strengths are?" In reply, Miss Lawson talked about academic skills only. "They've gotten to the point that they can follow directions on the board," she added. Such a chiefly academic focus is typical of a teacher's Intruccion in a traditional school.

Yet, Miss Lawson wanted the children to like reading. After this formal, traditional reading group was over, Miss Lawson employed more informal methods of teaching. She let the children divide up into groups of two and read to each other from the basal reader. She later explained, "Some children don't benefit from a structured approach." She continued, "It's good to let children work in groups because they learn to work with each other." These Ideas About Children and the Process of Learning are more like the developmental-interaction approach to Instruction. For this informal, reading-together part of the period, Miss Lawson had designed two "nooks in the room". Two children crawled underneath a table to read together, and two others curled up under the teacher's desk. Some sat beside each other to read, and some stretched out on the rug to read together.

When asked how the children used the large collection of children's literature that she had assembled, Miss Lawson said, "That's just our open library. They can read them when they finish their work and take them home to read." When asked whether she later got children together to discuss the novels they had read in the library, she said, "There's no time to discuss them."

Then she emphasized, "We stick to the curriculum, we stick to the text, there's no deviation." This is a traditional approach to Instruction and Provisioning, as well as to curriculum. When asked how she felt about that, Miss Lawson replied, "It's very competitive. Three times a year, a sheet comes around and you have to tell what page you're on. It's very pressured." When asked who sees this sheet, she said, "The whole town--it's published. . . . It says your page and it compares you to all three other elementary schools." She said this information is compiled "in the central office" of the school system.

When asked again how she felt about that, Miss Lawson said she thought the children would be "finished with the textbook, and we're going to read . . ." a children's novel for the last week of school. "We're going to read it and we're going to have a good time." Furthermore, for the next year, she was planning to set aside the basal reader at the end of each term and have the children read a children's novel. Using children's literature as an integral part of the reading program is a more developmental-interaction approach.

Another aspect of Miss Lawson's reading program is her reading aloud to the class. She spent the last five minutes of every day reading to them. She often read poetry. Also, she included the writing of poetry in her teaching of writing.

After lunch, all 20 of Miss Lawson's original homeroom children stayed in her class for the afternoon. On two days, they went to gym after lunch. On the other three days, they had creative writing.

Miss Lawson said she had learned the techniques of "process writing" in her student teaching experience at the University of

Massachusetts. Also, she herself had done some creative writing in the methods courses in the Interdisciplinary Program. She told how she had observed her cooperating teacher do his writing classes. "I listened to his questioning techniques," she said, "then I did conferences myself" with the children. This kind of Instruction (known as process writing) is a developmental-interaction approach to teaching and learning, and it was not done by any other teacher in Miss Lawson's traditional school. Her own children had never done much writing before. She said, "It took forever for them to get five lines out" at the beginning of the year. Also, she said that "they had no confidence". But this had changed. "Now, some write three pages," she said.

She described the Instruction techniques of the "process writing" program, as a kind of cooperative learning in small groups. "I found it's easier for them to talk with a friend, bounce ideas off each other." Then they each write separately for 30 minutes. She continued, "Then we have conferences when two people are ready." At first, Miss Lawson met with two children at a time. She said, "I'm teaching them how to have conferences with each other." In this way, she had given them ideas, she said, and now most of them could do peer conferences without her. The group sharing time was an important part of this method of Instruction. "We all listen to each other's stories," Miss Lawson said. She had seen the children grow in confidence and self esteem through her writing program.

Every afternoon, there was an hour each for science and social studies. Miss Lawson had an integrated curriculum approach to these studies. She employed active, hands-on methods (Instruction typical of

the developmental-interaction orientation in teaching). She said, "There are days when I have different activities going on." In social studies, when they had studied community life in different countries, the children had planned and built a model of an Egyptian town. They had worked in small groups. When asked how she divided her time among the groups, Miss Lawson said, "Usually, I go from group to group. I get everyone started, then I just float."

Miss Lawson integrated reading, writing, and art with the social studies (Provisioning, Instruction). For instance, when there was a story about auctions in the basal reader, she had suggested that the children bring things from home and have an auction of their own. This had led to a study of advertising. Small groups of children made up their own product and made up ads to sell it. When reading from the social studies textbook, the children often referred to a large group map on the wall.

Miss Lawson used the environment of the school for science teaching. On the day of the observation of the class, they went outside to do a science activity. They chose partners to investigate the trees on the school grounds; then they came together to discuss their findings. They had also studied insects that year, as well as seeds and plants. They had studied skeletons and put together a set of rabbit bones.

A major science project that year had been the study of the solar system. Miss Lawson said, "We did the planets and painted them. They were beautiful." They were made of papier mache. She said, "They were all over the ceiling. They were superb." It had taken two weeks, in the afternoons, to construct and hang the solar system in the classroom.

"It was wonderful. They had such a good time," she said. This is the Provisioning and Instruction of hands-on learning activities that are typical of the developmental-interaction type of teaching.

Miss Lawson talked about the Provisioning of materials for her classroom. When she had come in the Fall, she had found that she was starting an entirely new fourth grade. There were 20 children's desks, a teacher's desk, and the textbooks in the classroom--that was all. "I couldn't believe it," she said. "I became a scrounger. There were no tables for group projects." She borrowed a round table from the kindergarten and found another table on the stage. A teacher gave her shelves. She began to collect materials. "The books were first," she said. She borrowed extra dictionaries from other classes and brought in library books. She bought 100 paperback children's books to start her own classroom library. She assembled a closet full of games, which the children used on some afternoons. She brought in many art materials and other supplies, which she kept on open shelves so that the children could get what they needed.

Miss Lawson said, "If I need an idea or materials, I go to the other teachers." She talked about how helpful the faculty was. "I never felt like an outsider," she said. Miss Lawson had built a collegial relationship with one of the fourth grade teachers. "She's been here a long time," she said. "They're shocked that I get along with her." But Miss Lawson admired her teaching ability. "The teacher that I work with is fantastic," she said. "Not only does she respect me, she listens to my ideas." She said that although this other teacher was more traditional than Miss Lawson, they often exchange ideas about teaching.

"She's very helpful and supportive," Miss Lawson said. "She's always looking out for my better welfare." Miss Lawson had also found the reading specialist helpful. This reaching out to build support systems and collegiality was identified by Bussis and Chittenden (1970) as a part of the teacher characteristic Seeking Professional Growth.

Miss Lawson had found the principal supportive, also. "If I have questions, I go to him." He visited her class informally, in addition to the evaluative visits. Miss Lawson said that there were no school policies that made her teaching difficult or interfered with it.

Another support system that a teacher builds is her relationship to parents. Miss Lawson said, "I call parents if a child has problems. . . . All feel free to call me." She sends weekly letters home to the parents of her 10 reading students. Parent conferences are held twice a year. She had invited parents to share information with the class when they did certain projects, such as the study of bones. A father who was an anthropologist had come to talk to the class.

Another aspect of Seeking Professional Growth is the teacher's ongoing desire to learn. Miss Lawson planned to begin taking courses toward her M.A. the next year. She was interested in studying the teaching of reading. She saw herself as a continual learner. "I've got a lot of learning to keep going . . . but it'll come; it takes time," she remarked.

Miss Lawson was asked how much time she spends outside of school in planning (a part of Instruction). She replied, "One hundred percent-- I come home, eat, and the papers are out." She corrects all the children's papers. She makes up reading packets for children to take home.

She plans for individual conferences with each child every Friday, about their work. And she scores the tests that the school requires. Every Friday, there is a spelling test, a vocabulary test, and an end-of-week reading test. She said, "The basal has a testing part, for reading." Mathematics tests go home and have to be signed by parents. Not only is there planning to do for class work, there also is planning for homework. She explained, "It's a school policy. They have to have homework Monday through Thursday nights." Miss Lawson gives the children the responsibility for filing their finished homework in a mathematics file box, a reading and language arts file box, etc. The emphasis on homework and testing is typical of a more traditional method of teaching.

When asked how she ascertained children's progress, Miss Lawson described her methods of Diagnosis and Evaluation. She began, "I have 60 children, with switching children" in reading and mathematics classes, plus her homeroom children in science and social studies. For each subject, she corrects and grades papers for both class work and homework. The grades go into her grade book, which she has divided into the same subject heading as the report card. She concluded, "All I have to do is look at each section, add up the points and test scores, divide, average--that's the grade." This is a Diagnosis and Evaluation system of a traditional approach. The report cards go home four times a year in her school.

Miss Lawson expressed her Ideas About Children and the Process of Learning in many ways. She said, "These kids, until fourth grade, have been made to sit in a seat" all day. This is the custom in a traditional school. But Miss Lawson had a more developmental-interaction view of

children's movement. She allowed them to get supplies or a kleenex spontaneously, without asking her. She said, "It doesn't bother me at all." She encouraged them to be self-reliant. She said, "They know where everything is." She had placed the supplies on open shelves, a part of the Provisioning typical of the developmental-interaction approach.

Another such value is giving attention to the development of the whole child. The developmental-interaction type of teacher believes that the emotional, social, and physical aspects of a child's development are as important in the classroom as his or her intellectual and academic progress. This is one of the major Ideas About Children and the Process of Learning in this approach to teaching and learning. Miss Lawson said that the children in her classroom do express their emotions, needs and feelings. She gave a reason for this: "I've shown them a lot of trust. I take all questions and listen to everyone." She continued, "I think it's important for kids to know they're respected." She also wanted them to know her as a person--"something that I personally can tell them about me". Also, she naturally expressed her own feelings in the classroom, as a real person. "When I'm angry with them, I let them know," she said, "And they let me know." This indicates the Humaneness (Honesty of Encounters, Respect for Persons, Warmth) of the developmental-interaction teacher.

Continuing her discussion of the whole child's learning, Miss Lawson said, "We talk about . . . a lot of social things, values and morals and how to treat other people." They also talked about responsibility. The children chose jobs for the care of the classroom,

changing each week. Also, she said, "They have the responsibility of keeping track of their homework."

Miss Lawson had additional Ideas About Children and the Process of Learning that were also more developmental-interaction than traditional. She said, "Not every child is the same type of learner." She explained that she had some children in the class who are "auditory learners, some are visual learners". She was mindful that "you have to meet everyone's needs--so you have to do everything in every spectrum". She wants to "be flexible, in order to meet everyone's needs". However, she said, "In math, it's very hard sometimes." She felt conflict because of time pressure to cover the mathematics textbook.

Miss Lawson felt that the children were pressured with intensive instruction in mathematics and reading in the mornings. Therefore, she gave them 20 minutes in the afternoons to play games. "I have a game shelf in the closet," she said. "It's all my stuff."

What about teaching in a traditional school? Miss Lawson was asked how she reconciled her developmental-interaction Ideas About Children and the Process of Learning and the more traditional approach in her present school. She replied, "You have to be very flexible and you have to abide by what they tell you." Then she described the lack of flexibility in the school: "There's not much leeway. They give you a set curriculum. You have to do it. You have to complete it. You have to get through it."

Asked how she reconciled this with her perception of children's individuality, she said, "I think every child is an individual. His needs are set in one way or another." But she could not meet these needs

all the time. "I have found, in my particular environment, that I cannot always be individual with every single kid in the room." Asked why, she replied, "Not enough hours in the day, not enough minutes in the hours, not enough time to do everything I'm expected to do--cover the textbooks." These remarks showed Miss Lawson's Self Perception.

She also evidenced Self Perception when she talked about the goals she had attained that year. She had "become more comfortable in sensing children's needs". Also, she had made progress in another of her goals: "to learn the materials". She added, "I'm very resourceful--I know where to go for things." She had perceived that "you have to learn from being with children".

When asked about her future goals, she said she hoped to learn more about teaching reading. And she thought she did not know enough about the skills. She added, "I will learn--it's going to take time." She understood and accepted a characteristic of teachers with the developmental-interaction approach--the attitude of a continual learner, identified as Seeking Professional Growth by Bussis and Chittenden (1970). Indeed, Miss Lawson showed much Self Perception when she said, "The greatest thing about teaching is that you're always learning." Miss Lawson understood that a teacher learns from teaching.

She also remembered well her experience of learning to teach in the Interdisciplinary Program for teacher education at the University of Massachusetts. When asked what highlights of the methods courses stood out to her, she replied, "The science and social studies courses were very effective . . . the hands-on activities." She spoke of science as being ". . . in the world, everything there is". She said that, in her

teaching this year, she had often taken her class outdoors for active science experiences.

At the University of Massachusetts, the Interdisciplinary Program's courses for social studies and multi-arts had been combined into one course the year she was there. Of this course, she said, "I learned so much. There's a lot more to social studies than reading." She talked about "brainstorming with kids . . . choosing their own topics and groups and working together". She had experienced the classroom organization of cooperative learning in small groups in these course workshops, and she had been able to organize children for learning this way in her first teaching job. She had also been able to integrate the arts with other subjects, such as reading: "We made a puppet show from one of the basal stories."

Continuing her discussion of the methods courses in the Interdisciplinary Program, she said, "Reading was helpful, too." She described how the professor of the Reading and Language Arts course had written on cards "little activities about a particular section of the book". Miss Lawson had done that for her reading class, but she said, "It's very hard when you have a set text to deal with--the basal." She talked about using ideas to stimulate children's creative writing, ideas she had gotten in the workshop courses. She had tried to do these in addition to the basal program, but she said, "You have to do things so quickly and short every day--you build on it."

She also mentioned the mathematics workshop course. She expressed regret that the school where she was teaching did not give her mathematics manipulative materials. She repeated, "We have to stick to the textbook."

One of the things that Miss Lawson had found most significant was the collegiality that the professors in the Interdisciplinary Program had developed among the college students. She said, "Talking to my peers in the courses was excellent." Asked why this was helpful for her later teaching, she replied, "Because teaching is not a loner job. You have to bounce ideas off other people." She described this collegial activity in the workshop courses. "So much went on. One person would mention one idea, another person would build on that idea." Then, she said, "Another person would say, 'I changed it this way'." She concluded, "I think planning together, bouncing ideas off someone else, is excellent." Miss Lawson had reached out to develop a collegial relationship with another fourth grade teacher in her first teaching job, in which they shared ideas about teaching.

For Miss Lawson, one of the most valuable things about her undergraduate teacher preparation in the Interdisciplinary Program was the large amount of time spent in a children's classroom at the same time she was taking the methods courses. She said the courses were made practical by the assignments to do activities with children, like things she was doing in the courses.

Miss Lawson had found her student teaching experience to be most valuable. She had "a cooperating teacher that was so supportive". He had given her a great deal of responsibility for actual teaching in the class. She said that he "backed me, trusted me, respected me and believed in me, that I could be a good teacher".

When asked if she would advise making any changes in the Interdisciplinary Program for teacher education at the University of

Massachusetts, Miss Lawson had two suggestions. She said that, in the traditional school where she taught, she had "felt deficient" in her knowledge of testing. "If you're going into the real teaching world, you need it." She said, "It wasn't taught anywhere, about any of the testing, in college." She felt that "you can't talk to a parent unless you know the test". She had found a solution by going to the guidance counselor in the school where she taught, to have the standardized tests explained to her.

She told why she had found it important to know the tests while she had taught in a traditional school that year. "The school bases a lot of its criteria about a child's development on those tests," she said. She had found that, especially when there was a problem with a child, the first remark would be "Go test him". She said, "Everything is based on those tests." She was asked whether she observed the children in her class. Did she find the same things that they found on the tests, from her own observations and daily life with the child in the classroom? She replied, "Oh yes--that supports what the test says." She again emphasized that teachers "need to know" about tests, "especially if the school has a strong basis in testing".

Miss Lawson made a second recommendation for the Interdisciplinary Program at the University of Massachusetts. She said, "It's important to know that organization is essential." She emphasized the need for a teacher to know how to keep detailed records: "As a teacher, if your records are not precise, you're out to lunch."

Miss Lawson talked about her own childhood experience as a student in elementary school. She had gone to private schools that were

traditional. "I remember sitting in rows, sometimes in quads," she said. Some of her teachers had integrated science and social studies, she said. But she had first seen a totally integrated daily curriculum when she was a college student. This was a film shown in the Introduction to Education class (called "Life in Classrooms") at the University of Massachusetts. In that course, she had visited some developmental-interaction types of schools in the vicinity of the University. Then she had sought out the teacher preparation program called the Interdisciplinary/Integrated Day Program. Near the end of her first year of teaching, she said, "More and more, I think that stuff can be integrated into this traditional school."

Miss Lawson discussed her adjustment to this traditional school. "It was very hard at first," she said. She had found that the "children become more enthusiastic if you don't just sit and read the text". She had worked out a compromise. "You should do some seat work, written work," she said, "do an activity . . . then come to a close. I think that's how everything should go."

Miss Lawson spoke of the pressure she had felt this year from the school's emphasis on textbooks. "You have to cover the written material in the texts," she said. "It is stressed." Then she said, "They don't care about integrated activities--but they love it, if you do it."

She mentioned again many of the learning activities she had added to the textbook program (described above). She commented, referring to the other teachers in her school, "I've done a lot of things that no one in the fourth grade does." Then she said, "I feel confident in what I do. I feel good about teaching." She added, "It's O.K. to make some

mistakes--that the only way I'm going to learn. You jot down things to remember, to make it easier."

(3) Mary Patterson. Mary Patterson had taught one year after graduating from the University of Massachusetts when the researcher visited her class in the Spring. The school was the only elementary school in a rural town in Massachusetts. There were three classes: a Kindergarten and first grade class, a second and third grade class, and a class of fourth, fifth and sixth graders which was taught by the principal. Miss Patterson characterized the school as traditional in its approach. She taught the second and third grade class of 15 children. She had no teacher aide.

Miss Patterson's classroom had several areas for different types of work. The space arrangement is an aspect of a teacher's Provisioning. There was a meeting area defined by a large rug, under the windows. On the opposite side of the room, there was an art center, with a large table and many supplies: paints, paste, paper, scissors and pencils, recycled materials. A nearby shelf held games and mathematics materials. One corner of the room was screened off for individual and small group work. It was also used by the Special Needs teacher, who came daily to work with two boys. In another corner, there was a table for reading groups. The center of the room was filled with children's desks, arranged in rows.

Miss Patterson said she had started off the year with the desks in groups of two to four together. But she had later put the desks in rows "because of the kinds of demands placed on me to be more traditional". She said the principal had insisted on the desks being in rows, "but I

have my questions about it". She believed that there could be "a certain amount of security" for children "by sitting next to each other, sharing ideas and thoughts and learning experiences--and also influencing each other". She said, "Basically, I feel there's a lot in children helping each other, and it could be a great source of learning." This was Miss Patterson's approach to space Provisioning in a classroom, a developmental-interaction approach. But she had been unable to implement her idea of space arrangements in this traditional school.

Miss Patterson began the school day with the required pledge of allegiance to the flag and a brief meeting in which the lunch count and attendance are taken. Then the children sang together. Miss Patterson is expected to teach both music and art, since there are no special teachers in this rural school. The time schedule, another aspect of Provisioning, was arranged for reading and language arts and mathematics in the morning and social studies and science in the afternoon. The arts were integrated with the social studies and language activities. Miss Patterson was allowed some flexibility in the time schedule. She often had an hour for creative writing after lunch. But, she said, "My afternoon block is limited in its time, so sometimes I do writing in the morning with reading." This, she said, enabled her to have a longer time for social studies and science in the afternoons. There was also 30 minutes for outdoor physical education every afternoon, which she also taught.

The first "morning block" was Reading and Language Arts, for an hour and a half. Miss Patterson said of this time, "I have several things going on at the same time." She reads with a small group for a

while, then (she said), "I walk around and circulate" among the children at their desks, to check on what each is doing and help them individually. This type of Instruction and teacher's role is typical of the developmental-interaction approach to teaching. On the day that the researcher observed the class, the students were doing a variety of things at their desks. Some were making song books of the songs they had learned this year. Some were practicing their handwriting skills. Others were reading from children's literature.

There was a tremendous number of very appealing children's books in the classroom. Miss Patterson said, "I went and got them at a library downtown" (in a large town nearby). She had integrated the reading and social studies programs. She said that some of the children at their desks were "reading books I brought in, about the planets". She said the class had discussed fact and fiction. "They are researchers now. They're writing a 'facts list' about the stars and planets. Then we're going to write fictional things. They really like it."

The children doing this research were reading and writing either alone or in groups of two. They could choose whom to work with, and they could talk quietly and move about the room to get things they needed. This type of cooperative learning in small groups is typical of the developmental-interaction approach to teaching. It also indicates Humaneness (Respect for Persons) found in the Instruction methods of developmentally oriented teachers.

Miss Patterson also spent part of the reading period in the reading corner, listening to small groups of children read from the basal readers. She later said, "The reason I have to do all this textbook stuff is that

the principal stresses what would happen if a substitute teacher came in." The result was, "I've been forced to write down all these page numbers of textbooks." However, she said, "I'm flexible about it-- I don't always follow them." She had three reading groups, which the principal said could not change until mid-year.

Miss Patterson spoke of being "stuck in the texts--we have to use them". She said, "It makes for havoc with the principal, if we change. It is very age-graded." Miss Patterson said that, if a child spurts ahead in reading, he or she still has to read the textbook with his or her group, but she supplements his or her reading with library books. She also tries to vary the way the students use the textbooks. Sometimes they read aloud, sometimes silently. They either discuss or write about the questions at the end of each story in the basal reader. At the beginning of each reading group, Miss Patterson encouraged individual conversation and self expression in talking about personal experiences related to the topic of the day's story.

Spelling was usually taught by Miss Patterson during the Reading and Language Arts block of time. She said they have a spelling textbook that "is not very interesting, but we are required to do it". She said that "the spelling words are unrelated to every single thing we do in school". At the beginning of the school year, she had been teaching spelling in a different way. She had given the children words for spelling "related to what we were studying" in science and social studies. But then the principal had told her to use the spelling text. Miss Patterson said, "I was required to use it. So I do." She said that she was learning from the text, about rules and patterns in

language, which she could use later in writing. She said, "For a while, we were making crossword puzzles of the words" in the spelling textbook. She continued, "But now, they just take the words home, study them, and I give a test."

After recess, there was mathematics period. It lasted 40 minutes, and the children worked in three groups. Miss Patterson said, "They all have textbooks, and I supplement that with manipulative materials." She had bought manipulatives herself and had made her own mathematics games. This type of Provisioning is typical of the developmental approach to teaching. Miss Patterson said, "I circulate from one group to the next." She spent a portion of the mathematics time in direct Instruction with each group. She also helped individuals with their mathematics when she "walked around and circulated" among the children at work. This method of Instruction--going to the individual children--is typical of the developmental-interaction oriented teacher.

After lunch, the class usually spends an hour doing creative writing. The teaching method known as process writing was introduced to these children by Miss Patterson. There was no such program in the rest of the school. She told how she started them in process writing. "At first, we worked on drawing pictures and writing stories." She held an "author's circle" every day. A few children would read their stories aloud, and then there would be "comments . . . and well thought-out questions by the children". In this way, "they learned give and take--constructive criticism--being gentle". Miss Patterson said, "We all have our strengths and weaknesses." This attitude showed warmth and respect for persons, aspects of Humaneness.

Eventually, the class held one "author's circle" a week. During writing time, they had peer conferences, when they helped each other with their writing. This is a form of cooperative learning in small groups, an Instruction strategy of the developmental-interaction approach to teaching. During the writing time, Miss Patterson herself also had individual conferences with the children, in addition to her circulating and helping where needed.

When the researcher observed the class, there was a good atmosphere for learning in the classroom during writing time, a busy hum, with children talking quietly to each other. They were deeply absorbed in their work. Several children came over and asked if they could read their original stories to me. They obviously had confidence about their writing, and they liked to write. Their stories were exceptionally good, beautifully written and illustrated. They had bound many of them into books and placed them on the shelf for others to read. Miss Patterson later said, "I taught reading with their own stories, too." These methods of teaching reading and writing, of Instruction and Provisioning, are characteristic of the developmental-interaction approach to teaching and learning.

After writing time, it was physical education period. Since there was no special teacher for this, Miss Patterson took the class outside and they played soccer. The rest of the afternoon was given to either science or social studies. Sometimes when there is a big project, more time is allowed by doing the writing in the morning.

There had been several integrated science projects that year. Miss Patterson said she had learned how to integrate curriculum this

year--"to use the theme of the sun and planets". The children had done writing and imagery activities, made solar collectors, hung on the ceiling their model of the solar system, read books and done research on this theme.

Another science project had been a study of pond life.

Miss Patterson said, "We did an environmental study." She often followed up on the children's interests, for mini-projects in science. The children brought in many things--there were bird nests and a wasps' nest on a shelf. Also, there were two white mice in a cage in the classroom. Miss Patterson often took the children on nature walks, and there were several small field guides to plants and animals on the science shelf.

There was a written curriculum guide for social studies in the school, which Miss Patterson said she followed sometimes. She added, "However, if I deviated from that, I got into trouble." She had done a unit on another culture--Egypt. The principal was displeased. "She asked me, 'Where in the curriculum guide does it tell you to do that?'"

There were many art projects in Miss Patterson's class. The children's paintings were hung on the walls. They also did printmaking. They had done a great deal of puppetry. They made puppets and wrote plays for them (integrating the language arts). Miss Patterson said, "We made a puppet theatre together." They also integrated science with art, when they made the papier mache model of the solar system. They also drew pictures of the pond life they studied in science. These pictures were on the bulletin board. Another type of art project was the illustration of their original stories when they "published" them, doing

their own bookbinding. All of these integrated art projects are typical of the indirect Instruction valued in the developmental-interaction approach to teaching and learning.

When asked about her Provisioning for Learning, Miss Patterson told how the learning materials in the classroom were procured. She said that, when she entered the classroom in the Fall, it was "severely deficient". There were very few materials. The school supplied only paste, paper, pencils, and, of course, textbooks. Miss Patterson herself had bought and brought in art materials--"recycled stuff", games and manipulative materials. This Provisioning of many hands-on materials is characteristic of developmental-interaction oriented teachers, although they seldom have to buy their own basic materials, as Miss Patterson did.

Miss Patterson talked about why she thought manipulative materials were good for children. She said, "They promote understanding--the children can see mathematical patterns." She also called this "whole learning".

When asked what material was essential to her teaching, she replied, "Shelves--so the materials are accessible to children." This promotion of self-initiated learning (and taking responsibility for one's own individual learning) is characteristic of the Instruction and Provisioning of the developmental-interaction oriented teacher.

The teacher's planning is an important part of Instruction. When asked about her planning, Miss Patterson said, "In the beginning, I was enthusiastic. I spent lots of time in preparation--three or four hours a day." But the time spent planning after school had "become less and

and less this year". When asked why, Miss Patterson replied, "I've gotten virtually no positive feedback. The principal's evaluations have never been constructive."

Miss Patterson talked about her methods of Diagnosis and Evaluation. She felt that she had gotten to know the children well through her individual conferences and her frequently going to their desks while they worked, to help individuals. She kept checklists of their work and sometimes she wrote anecdotal records. She also kept samples of each child's work, to show their progress. These are methods of the developmentally oriented teacher. In addition, she gave the tests required by the traditional school in which she taught. However, she found that the "judging" expected of her was difficult for her. She said that "despite the fact that I was required to be more formal, yet I was an informal teacher". Therefore, she said, there were "certain things that I was required to judge them on, that I had no inkling of how to-- or desire to--judge them on". She felt that she had had successful reporting conferences with parents, when they could dismiss the children (two conferences a year in this school).

Miss Patterson's Ideas About Children and the Process of Learning were evident in many ways. She believed in building on children's interests. She said, "So much of my curriculum came from children's interests." She found out their interests in their writing and from the environmental materials they brought in. She had the attitude, "I don't know--let's find out" (the honesty of encounters of Humaneness). She said, "They bring things in and I go to the library in town and get books on it and set up displays." This respect for persons, their

own interests, is also a characteristic of a teacher's Humaneness.

Miss Patterson's Ideas About Children and the Process of Learning are seen in both her Provisioning and her Instruction. She set the stage for their working in pairs in Writing and Reading times, so that they could "provide each other with ideas". She thought that there should be "balance--times to read aloud, too". She said that children "need a chance to talk". Their feelings were respected as much as their academic achievement; in other words, she was interested in the development of the whole child. This warmth and respect for persons is a part of Humaneness. Miss Patterson thought that children's fears, their ideas about sex, death, birth, have a place in the classroom. When these issues came up, she handled them in discussions and by finding children's books dealing with the issue. She handled discipline problems by giving a child some "time out" in the area for quiet study, in a corner of the room. She would tell a child to come back when he or she could function the way he or she should. She said, "I try to do it quietly"--again, Humaneness.

Miss Patterson's Ideas About Children and the Process of Learning could not always be carried out in practice in the school setting where she was working. She believed in giving children choices and letting them take responsibility. On one level, they were able to do this. There was a "job chart" on which their choices for weekly maintenance jobs were listed. One child would do the time keeping at sharing time in the morning, another would choose who spoke next. But Miss Patterson found that these children were often not able to make

choices on a higher level. She said, "It was difficult for me to provide a lot of choices for these kids because they couldn't handle it themselves." She said they had grown up in an environment where they were given no choices in school.

Also, Miss Patterson commented on another attitude among the students in the school. They lacked a sense of cooperation and community. She said, "It was an attitude of 'us against her'" (the teacher). She continued, "They came to me with that. I couldn't change that. It's in the whole school--it went on in the principal's classroom, too." She commented, "It's just wierd when that happens. They don't have a sense of responsibility towards each other or towards anyone."

Miss Patterson's Ideas About Children and the Process of Learning were also seen in the way she set limits and established rules for children. She said, "I had some children who couldn't work well in small groups." She helped them by "making special plans for each student, and personally giving them their own set of rules". She also frequently checked on them and sometimes had one other student work with each of them. The individualizing Instruction to meet children's varying needs is typical of the developmental-interaction teacher. This individualizing also indicates that Miss Patterson builds on children's strengths and expresses Humaneness in her relationships to students. Her going to the children while they worked, alone or in small groups, and helping where needed, was a way of giving continuous feedback and support to students.

Discussing her Ideas About Children and the Process of Learning, Miss Patterson said that, this year, she had realized how she felt about

balance in the curriculum. She called this her ideal: ". . . a classroom that does demand a certain amount of academic standards, yet, at the same time, values creative processes as an important means of learning."

The Self Perception of the Teacher was evident in Miss Patterson's discussion of her work. She saw her role as enabler, supporter, tailoring her methods to meet individual students' needs and interests. She varied the textbook reading, to keep it interesting to the students, and supplemented it with large amounts of library books from another town's library. When asked what goals she had reached this year, she said, "My writing program was a success. I saw the children grow as individuals through the writing program." she said, "I saw the philosophy of the reading-writing connection." She thought she had grown as a teacher in other areas, too. She commented on her "management skills improved this year". Also, she thought that being given the responsibility to teach art and music had "expanded that side of me--used my talents".

When asked what goals she still needed to work on, she said, "I would have liked to have done more work on conflict resolution and role playing with the children--group dynamics." Also, she thought her mathematics program could have been better. She said, "The problem was lack of materials, so I had to rely on the textbook." She had found it difficult to teach physical education without a curriculum guide for it.

Miss Patterson showed Self Perception when she talked about being a first-year teacher. "I felt that I had no goals until I actually started working with the children, so I made a lot of mistakes." She

talked about "learning the kinds of things you need to define for yourself as a first-year teacher". She said she had had no one to communicate with about her teaching. She had perceived that "the first year of teaching is a learning situation--a continuation of student teaching, really".

When asked what advice she would give a teacher who wanted to start a more developmental-interaction classroom, Miss Patterson replied, "To be, in the very beginning, very firm and structured." She thought that children should gradually be given the amount of responsibility that they can handle. Recalling her own experience, she said, "My biggest lesson--it doesn't hurt to have more structure at the beginning of a classroom--less freedom, less learning centers--and slowly ease into that." She said that, if the children have never had this kind of developmental classroom, "that's a whole learning in itself--learning how to work independently, learning how to work in small groups and to work one-on-one, in pairs". She herself had realized this later in the year. "It wasn't until three months after I started teaching that I realized I had to do this and this and this, to get this."

The teacher characteristic Seeking Opportunities to Promote Professional Growth was evident in Miss Patterson's experience. She saw herself as a continuous learner, referring to things she had learned about teaching that year. She had taken a theatre course and enrolled in a co-counseling group that year. She had sought resources outside the school for her students. She had brought to the classroom materials in mathematics, the arts, science, and children's literature.

Part of Seeking Professional Growth is establishing collegiality with other teachers. Miss Patterson had done this with two teachers in the school. She said that the Kindergarten and first grade class teacher had given her "positive encouragement and understanding". The Special Needs teacher gave her "constructive information and suggestions" and was "very helpful--she understands me". Miss Patterson was also pleased with her relationship with the parents. She had arranged for some to help in the class with nature walks and integrated art and science projects.

Miss Patterson discussed the difference the school setting had made in her teaching. She characterized the school as traditional. When asked if any school policies had interfered with her teaching, she said "yes". The principal had told her to change her methods, to follow the written curriculum guides and use the textbooks. She had been told she should not deviate from these to follow children's interests or to do different integrated projects or units.

When asked about her relationship with the principal, Miss Patterson described the principal's attitude in one word: "Critical". The principal had told her, "I am not here to help you." The principal taught the class of fourth, fifth and sixth graders in the school. Miss Patterson said, "She had no time to give me. And I needed support as a first-year teacher." Miss Patterson said that the principal had told her, after a while, "Your ideas are not going to work in this school. Put them aside altogether." But, Miss Patterson said, "They were me. I couldn't do this." Thinking about the year, Miss Patterson said, "I lived through it."

Seeking Professional Growth also includes how the teacher sees her future plans. Miss Patterson had been told by the principal that she would not be hired the following year. Miss Patterson did not think she wanted to do classroom teaching again. She talked about furthering her other talents--theatre, the arts, puppetry, weaving. She said, "The visual and expressive arts are my strength." Maybe she would combine them with teaching in some other setting than a school. Indeed, she said, ". . . not in a classroom." She had not looked for another teaching job for the coming year. The researcher later learned that she went to Maine and became a carpenter.

Miss Patterson recalled her experience as a teacher trainee in the Interdisciplinary Program for teacher education at the University of Massachusetts. She said that her understanding of the developmental-interaction approach to teaching had come entirely from her participation in that program. By contrast, her own schooling had not been interdisciplinary. She said, "I came from a traditional school background."

She told how the Interdisciplinary/Integrated Day Program at the University of Massachusetts had differed from her own traditional school background. "Basically, the Integrated Day Program taught a more creative emphasis in classrooms. It is the integrated curriculum." She continued, "It is project oriented, encouraging the interests of your students and building on their strengths." She saw how this focus related to curriculum: "You work your integrated curriculum out with their interests in mind." Miss Patterson had implemented this understanding of curriculum in her classroom teaching that year.

Miss Patterson talked about the things about the Interdisciplinary Program for teacher education that were most helpful to her in her classroom teaching. She said, "I liked the workshops. The writing program was great. I did a lot of writing." She felt she had been successful in teaching creative writing this year.

She thought that the Interdisciplinary Program for teacher education had taught her how to integrate curriculum. She said, "I also really liked the days when whole themes were developed, the Japan day. . . . I learned mostly how to integrate curriculum, to use a theme." She thought that learning by doing was an important part of the teacher education program. She explained, "We experienced what we could expect children to experience. The hands-on experience helped. It's how I approach it with children now." The active, hands-on, thematic learning in the teacher education program had changed her attitude toward education. She continued, "I realized that education is not stagnant, void of creativity and excitement."

Miss Patterson recalled her relationship to the professors and instructors in the Interdisciplinary Program. "I liked the people in the program. They were personable; their enthusiasm was great. The teachers had a really strong influence on me." She emphasized the modeling of teaching methods that the professors did. "They really practiced what they preached. That, to me, was very positive."

Miss Patterson talked about her growth as a person and as a teacher in the Interdisciplinary teacher education program. "It had a positive effect on me. I realized the kind of strengths I had that were suitable for teaching." She commented on the Humaneness in the program, the

warmth and respect for persons. "It gave me a positive sense of self--to recognize strengths and build on that. It was not at all like the authoritarian kind of teaching."

She emphasized the collegiality that the professors developed among the students. She said that the Interdisciplinary Program built "a real sense of togetherness and community. That's ideally what needs to be achieved in classrooms." She said that the teacher education program gave her "a total affirmation of who I was as a person. I really felt very supported."

Miss Patterson was asked how she thought the Interdisciplinary teacher education program should change. She said, "I think we need to be made aware of what is really going on in education now." She said that the Interdisciplinary Program ". . . is proposing . . . really the ideal". She thought that "we are never really made aware that that doesn't exist in three-quarters of the schools".

She talked about having to take a job in a traditional school after graduation. "And we go in so really unprepared--you know, so filled with so many ideas, so enthusiastic. But then, there's going to be a struggle" in a traditional school. She said that she now saw that the Interdisciplinary Program "is the alternative to the traditional". She continued, "But we are not all going to be able to get jobs in an alternative education setting. Therefore, how do we cope in a traditional public school system?" She thought that the preservice teachers needed information on how "to be accepted and progress and slowly make changes". She thought that she saw too late that "you have to work from

where they're at, start at their pace," if you want to work out an interdisciplinary classroom.

She recalled how she had approached her first job, in the traditional school, after graduation. "I think my attitude was that I was going to do it this way--this is the right way." She remembered "thinking that this is the way it should be" [emphasis hers]. Then she had found that "in a public school system, you have restrictions, and I think we have to know how to deal with those restrictions". She said that beginning teachers need to know how to "keep a perspective; that we're not giving in, or going back on our beliefs".

Miss Patterson thought that the Interdisciplinary Program could add this information to its courses. "We need more focus on classroom management skills." She said she had learned in her student teaching placement "the strategies the cooperating teacher used--working in small groups, then coming back together". She thought that there should be more concrete preparation for the first teaching job. While still in college, she said, "as a student teacher, we need to decide and define what goals to demand in the first month of school". She had needed to know "what kind of structure . . . to establish at the beginning of the school year, that will help meet those goals".

(4) Sarah Thorne. The school was in a small town in Massachusetts. Sarah Thorne had gone there as a beginning teacher the year before. She had taught sixth grade her first year, then she had changed to second grade. She characterized the school as traditional. There were 16 children in her class. There was no teacher aide.

Her classroom had a large meeting area on one side of the room, with chairs arranged around a rug. The children's desks were arranged in clusters of three or four. In a corner of the room, there was a listening area with a record player, earphones, accompanying records and books, and a tape recorder with earphones. There were no other areas for common use. There were, however, many open shelves with supplies readily available to children as needed. Mathematics manipulative equipment filled the shelves along one wall, and many kinds of supplies, including art materials, were on other shelves. Mrs. Thorne's arrangement of space and materials in the classroom was more characteristic of the Provisioning of a developmental-interaction teacher than a traditional one.

The time schedule is another aspect of Provisioning. Mrs. Thorne described the daily schedule as "rigid" and determined by other people in the school, to conform with their needs. This type of time schedule is the Provisioning of the traditional school. On two days a week, the children went off to art class the first thing in the morning. On the other days, they did a mathematics paper and journal writing for about 15 minutes. During this time, certain children do the daily routines--one takes the lunch count, others do the calendar and the attendance. The children rotate in their jobs, including Leader for the day. They take their jobs seriously, including clean-up at the end of the day.

After journal writing came a class meeting, called Sharing. Mrs. Thorne invited the researcher, as the visitor, to join the circle in the meeting corner. She suggested that the children introduce themselves and each tell the researcher one thing they had liked doing this

year. They talked about trips they had taken (science interests), stories they had read, and projects in social studies. They said they had done self-portraits twice. The children listened intently to what their classmates had to say; there was a warm and accepting feeling in the group. Mrs. Thorne was keenly interested in each individual's comments. The relationships between teacher and children evidence an important characteristic noted by Bussis and Chittenden (1970) as found in developmental-interaction approaches to teaching--the characteristic Humaneness (defined as Respect for Persons, Warmth, and Honesty of Encounters).

Next, the class went off for gym period. When they returned to the classroom, there was reading period. More than half the class picked up their books and left the room, to join a group for reading in another classroom. Then, children from other classes came into Mrs. Thorne's room for reading with those left in her class. She said she had been assigned the "advanced group". Other teachers taught "middle . . . or less capable" groups in their classrooms. These are the grouping patterns of a traditional school (Instruction, Provisioning).

Mrs. Thorne later explained that several grades in this school grouped and exchanged children in this way daily, not only for reading, but also for mathematics, science, and social studies. The groupings were set in the Fall and were not changed all year. Mrs. Thorne said, "Once we had made our groups, there we were--locked in the system of the groups." She said she had "reservations about that". She would have preferred to "have handled it somewhat differently--maybe totally differently".

Of the children assigned to her for reading, Mrs. Thorne said, "This group is really very advanced." She had used the basal readers in the first semester, and in the second semester she had given them a more individualized reading program. They were now reading children's novels and picture books from a wide selection of children's literature in the class and school library. Mrs. Thorne said that she gave them comprehension questions "to help them structure their reading". They still used the basal reader workbooks for practice in the skills. Mrs. Thorne said, "I want to do it more separated next year--maybe tear up the workbooks into separate skills." She said that she often did skills one day and reading aloud another day. She expressed her feelings of inadequacy about the skills. She said, "I have a long way to go."

Mrs. Thorne's Instruction in reading was a combination of direct and indirect teaching. There was a relaxed atmosphere in the classroom. Two children who were reading the same novel could work together on the comprehension questions. Mrs. Thorne accepted the children's soft talking, helping each other, and moving about the room spontaneously, to get things they needed from the open supply shelves (the Humaneness of the developmental-interaction approach to teaching).

After reading, there was lunch. Mathematics period followed lunch every day. Again, some children went off to other classes for mathematics, while other children came into Mrs. Thorne's room. On the day that she was observed, Mrs. Thorne used manipulative materials--wooden cubes--to teach borrowing and place value in subtraction (Instruction, Provisioning). About the many manipulative mathematics materials

filling the shelves, Mrs. Thorne said, "Children love them and they're very helpful."

For the first time that year, the school had adopted a special program designed to teach mathematics through activities and with hands-on materials (a developmental-interaction approach to teaching). However, school administration had insisted that the teachers combine the new program with the mathematics textbooks. This had made it difficult for Mrs. Thorne. She worried about the skills.

After an introductory session on place values for her entire mathematics group, Mrs. Thorne gave individual assignments. Then she moved about the room, helping individual children at their desks as needed. "That's the way I seem to work," she said. This is an Instruction method of the developmental-interaction approach to teaching. Other teachers in the school did not work this way, according to Mrs. Thorne. She said, "It always surprises me when I go into another teacher's room and there they are, behind the desk." She mentioned that the importance of individualizing was stressed in the Interdisciplinary Program for teacher education at the University of Massachusetts. But she added that, in this traditional school, "the reality for me is the curriculum and the books and going through the pages".

Mrs. Thorne felt a conflict between the school's demand regarding pages in the textbook and her own perception of individual children's needs. She explained, "It's just so clear to me that each child moves differently, and to demand that each child finishes a certain number of pages has been hard for me." When she had told another teacher that "everybody's on a different page," the other teacher had said, "That's

what you get when you individualize, and I just don't have the stomach for it." Mrs. Thorne had found a remedy. "I put two or three together who are at the same place--that's what I'm learning to do with more experience."

Mrs. Thorne talked about the advantages she had found in having children do cooperative learning in small groups. She said, "They can be independent, they support each other, they are happy together . . . it's comfortable, manageable." Having children learn individually, or providing for them to help each other learn in small groups, are methods of Instruction of the developmental-interaction type of teaching.

After mathematics each day, there were special projects, such as art, music and physical education. For these, the class went to other parts of the building, to be taught by specialists. Then, the last period of each day was given to either science or social studies. There was inter-class grouping for these subjects, too, in the same manner as the reading and mathematics grouping.

For social studies, there had been a whole-school project that year on different countries. Mrs. Thorne's group had studied France and Africa. She had integrated the arts with reading and language and social studies. Mrs. Thorne had brought in some records of African music, and this led to an interest in musical instruments. The children then brought from home several musical instruments--guitars, harmonicas, drums. They used these to accompany their singing.

The children had built a model of "an African village in a savannah land". First, they had read stories about Africa. After discussing

them, Mrs. Thorne said, "We repeated words that we got from what we read," words that reminded them of Africa. Mrs. Thorne had written their words down: "The jungle is dark, silent, mysterious, thick and tangled like being sisters here, with small plants and insects, hot, moist, steamy." She added, "And then they made it."

The large table-top model of the savannah land included African huts, a thick and tangled jungle, and many original and colorful birds and insects. Mrs. Thorne said, "I put out pictures, so they could copy the broad leaves and things." Then she had found "some Rousseau pictures of the jungle".

The Rousseau pictures had started them talking about the French Impressionist painters. Mrs. Thorne said, "I got some pictures from the museum," and this eventually led to a study of France. They studied two other French painters, Van Gogh and Manet. They learned French songs. They did a time line and found that Van Gogh was a contemporary of Lincoln's. They made maps "and put the countries where they belonged". Now, she said, "They have quite a bit of knowledge about geography, and I think that's important."

Mrs. Thorne said that she had "a real tie with the Integrated Day/ Interdisciplinary Program at the University of Massachusetts". She said, "We used to sing together in the workshops," so she had begun to take guitar lessons while at the University. Now, she sang every day with her class of second graders, using her guitar.

Several science projects were in evidence in Mrs. Thorne's classroom. The children had made two terraria (a small snake lived in one). They had done seed planting; there had been a trip to a nearby nature

center. They had done hands-on science activities with trees on the school grounds. Another trip had taken them two-hours distance to Boston's Science Museum. There was a science textbook, but Mrs. Thorne tried to bring in active exploring of the environment as much as possible.

Mrs. Thorne had collaborated this year with the other second grade teacher in planning for a whole day of integrated curriculum activities for the two classes. They had done this several times. Mrs. Thorne had patterned this after the "Integrated Day" Day that she and other student teachers had done in the Curriculum course while they were in the Interdisciplinary Program at the University of Massachusetts. Now, in her own class, Mrs. Thorne planned with the other second grade teacher for integrated curriculum planned around a theme for one day. They had done a Lincoln Day, a Johnny Appleseed Day, and a Spider Day (when they studied insects and spiders). This was Mrs. Thorne's compromise with the "fixed day" of the rigid schedules and set groupings that were the usual fare in this traditional school. Having many hands-on activities planned around a theme (in projects that integrate the curriculum areas) is an Instruction method and a Provisioning activity of the developmental-interaction type of teacher.

Mrs. Thorne talked about her planning (an important part of Instruction). She said she spends "hours, hours". She worked from seven in the morning to six-thirty every day. And she had given all her vacation to "preparation time".

Mrs. Thorne talked about the materials in the classroom. Providing for a variety of hands-on materials is an important part of Provisioning

for the developmental-interaction teacher. Mrs. Thorne had made manipulative materials and purchased others. She herself had made shelves so that the supplies could be available for children's independent use. She had also made a "mailbox" of cubbies for the children, so that they could be independent in passing in their work and getting it back. She had set up a learning center, the Listening Center, with both the school's cassettes and her own. She had a variety of art materials in the classroom. She mentioned wanting to have more books (children's literature) in the classroom. She said the school has textbooks in reading, science, mathematics and social studies, which she is expected to cover (a traditional approach to curriculum).

Mrs. Thorne discussed her ways of Diagnosing and Evaluating children's progress. She said, "It's very difficult, because you want to be accountable and you want to be aware of the different skills." She explained her feelings. "I mean, I see a child busy in reading and I want to say that child is progressing." But she worried about the skills, adding, "Yet, I think I've got to say specific things about that child's knowledge of contractions and compound words and long and short vowels and all those specifics." Then she said, "That's something I'm learning."

Mrs. Thorne had to fill in report cards several times a year. There was a parents' meeting, but Mrs. Thorne said, ". . . We don't really sit down with parents and say, 'This is what we're doing'." The emphasis on skills and report cards in this school was typical of the traditional approach to Evaluation.

Mrs. Thorne discussed her Ideas About Children and the Process of Learning. She said, "I think that community is the first priority." She explained, "Nothing learned is as important as being kind to each other and to allow people to learn and to make mistakes." She also stressed helping children gain self respect and confidence, and "how easily the bright ones could look down on everyone else" (Humaneness, Instruction). There was no rivalry observed among the students in Mrs. Thorne's class. Rather, there was a cooperative attitude and a relationship of trust. Mrs. Thorne obviously cared about the child's emotional and social growth, as well as his or her intellectual development and achievement. This concern for the whole child is an important aspect of the developmental-interaction approach to teaching and learning.

Her Ideas About Children and the Process of Learning were evident when she spoke of her positive approach to discipline. "Sometimes I have to regroup--say 'Sit over here'. I'd rather prevent, redirect" (Humaneness, Respect for Persons). Also, she said that children's feelings have a place in the classroom, and it is as important to recognize them as to give time to academics. Evidence that she was tuned in to the needs and feelings of her students is seen in her remark, "I seem to know everything that's on their minds."

Mrs. Thorne said that she tried to bring in children's interests as much as possible. In order to allow for times for children's individual self-expression, in the midst of a textbook-dominated curriculum, Mrs. Thorne had actually provided times in the schedule for more personal exchanges. She said, "One of my favorite times is on Friday. They

share. I sit back and listen." She talked about the things they brought from home to share. "Angie once brought in a piece of burnt toast--it set the toaster on fire that morning." The children appeared relaxed and confident in group meeting time, offering their ideas readily and listening to each other.

However, Mrs. Thorne expressed a conflict when asked about giving choices to children. She replied, "There are generally so many things we have to do that there isn't enough time for that." Sometimes, though, she gave a choice time on Thursday or Friday mornings. She said, "When we do, it's wonderful." The choices she mentioned were all academic--writing, working in their mathematics books, memory of mathematics facts. She added, "Sometimes I have extra language papers out." Of the children's reactions to these choice times, she said, "They loved it." Then she said, "We really have quite a fixed day, with reading specialists and other teachers."

The pressure of the time schedule also caused conflict in Mrs. Thorne's interest in the individual, as expressed above. She was asked whether the children not only had some choices, but also shared in making some decisions. She said that the children do not share in decisions, "because it is so time consuming". She further explained, "Many of the decisions I make are for important reasons and I should probably honor that for the time being." She added that the individual children can decide how many pages they get done each day.

Mrs. Thorne's Self Perception was evident when she talked about the goals she felt she had accomplished that year. In fact, these goals also tell something about her Ideas About Children and the Process

of Learning. As her first goal, she repeated that "The sense of community has been important to me," adding that "They listen to each other and they care about each other". Then she said, "I worry all the time about covering the things in the curriculum"--an important goal.

Discussing another goal for the year, she thought she had given the children "a real sense of the world and a real interest in the world--that's very important to me". But Mrs. Thorne did not think she had accomplished all her goals for the year. She was not pleased with her teaching of reading, although she had been able to use children's novels at the end of the year. Of reading, she said, "I give a lot of time to it, but I feel I've been over a barrel in terms of using the text."

Mrs. Thorne talked about the difficulties of working in a traditional school. She said, "I feel pressured by the textbooks on account of the parents." She explained, "Some of the parents are so workbook oriented." Mrs. Thorne blamed herself for the difficulties, commenting, "Probably it's my unfamiliarity with the curriculum, having to cover everything." She talked about the future--trying to have "more control over what I want to do" and telling the parents in advance, so that they know what to expect. She said again, "These very vocal parents who stress the workbook--it throws me off."

Although Mrs. Thorne had found it difficult to communicate with some parents, she had been able to build other support systems in her second year in the school. This is an aspect of Seeking Professional Growth. She had built collegiality with the other second grade teacher. She said, "We've had a wonderful time planning together." Both that teacher and the principal had given Mrs. Thorne support that year. She had also

been able to help the new teacher across the hall. Mrs. Thorne's Seeking Professional Growth had not extended beyond her own beginning teaching as yet, but she was resourceful in seeking out materials and field trips for her class.

Mrs. Thorne talked about her difficulties and achievements as a beginning teacher. She felt that in her second year she had achieved a balance that she strived for--between teaching the skills and allowing for the individual children's personal growth. Now, by the end of the year, she said, "They can share and talk to each other--there's real give and take and appreciation for each other." These are the values of the developmental-interaction approach to teaching and learning, and these values reveal Mrs. Thorne's Self Perception.

But her first year of teaching had been quite different. She had been given a sixth grade class in this school that had always been taught traditionally. Also, she was the first new teacher in the school in 10 years. She said, "I did things that I thought were wonderful." What things? "The creative writing--and we did a play at Christmas," she said. But she heard that the other teachers had complained to the principal that her sixth grade class "doesn't walk down the hall quiet enough. . . . She doesn't know how to manage children." Mrs. Thorne said, "That began to build against me" in the school. She said that in the second semester the principal "was very hard on me, to try to get me to change". He had told her that she had to "crack down on them". She said, "That meant I had to change the way I was, which I tried to do--but that didn't work."

She was asked how she finally gained the acceptance of the principal and the other teachers. She replied, "Hard work--I just work harder than anyone else. I have to." She had spent all summer studying the textbooks this year. She described her summer's preparation: ". . . knowing the texts and materials and setting up the room so I knew exactly the routines I was going to do" in the Fall. She spoke of "holding my own emotionally, and doing what I thought was right for my personality". She said again that in this year with second grade she had finally achieved a balance between teaching traditional skills/textbooks and developing individualized learning and good relationships among children. She said, "You can only be what you are. I'm not someone down the hall--I just am not" [emphasis hers].

Mrs. Thorne said that one thing "that has made a huge difference this year is the support of the other second grade teacher, and the collegiality she has developed with her. Also, the new principal has hired new types of teachers. She said that the new sixth grade teacher "is doing the things I did last year". There were several new teachers in the school this year, whereas she had been the only new teacher in 10 years when she first came to the school. She said, "They've also hired other people like me, so I'm not so much the odd man out" this year.

Mrs. Thorne spoke of her teacher preparation in the Interdisciplinary Program at the University of Massachusetts at Amherst. "I think about the things that I've had to learn from experience, that were not discussed in the program." She spoke of "coming into a new situation, being the new teacher, having to really earn your reputation,

almost by living through it." She talked about the need for "knowing what can go wrong, so you know why you set certain routines". She mentioned specifics--"things like jobs and scheduling and attendance and lunch count and lining up". She added, "My kids line up quietly now, because I've made a thing of it." She used the word "important" five times while talking about the needs for beginning teachers "knowing how to do the routines in a classroom". She said, "These things are important because it's a reality in a public school."

Mrs. Thorne said that the Interdisciplinary Program at the University of Massachusetts "had a great emphasis on creativity". However, she thought that there was a "serious omission" in the teacher education program. It did not cover "the practical difficulties of a first year of teaching". She said, "You have to know it's important in a public school, to do this," the routines mentioned above. She said that moving quietly through the halls "is not regimentation. It's respect for the other classes, and it's control."

Again, Mrs. Thorne asserted that the Interdisciplinary Program's workshop courses were "creative and wonderful". But something was lacking, for her. To illustrate this, she compared the teacher education program to a parent. She said, "You draw on a parent's values. If your parent doesn't value this, then it's a conflict." She had seen learning centers "spread out" in the workshop classes, but she did not see this approach implemented in her student teaching assignments by the cooperating teachers.

When she got a job in a traditional school, she had felt a need to know more. She had needed more information about the basal reader,

classroom management, handwriting. She said, "Even if the parent teacher education program says it comes with a sense of experience, confidence, time--then I think it's easier to achieve." It would not be a conflict for a beginning teacher, she thought, if the parent program would just speak about "the importance of the routines".

Mrs. Thorne said that the Interdisciplinary Program at the University of Massachusetts needs to "make it real for students".

Mrs. Thorne also suggested that the Interdisciplinary Program be more explicit in helping beginning teachers know how to "fit into a traditional school program". She said, "I must have had the hardest experience of any of them. I felt I was such a failure; I should just hide." She spoke of the need for an advisory system for first-year teachers. She thought, "It would be really good if there were someone to call upon that's outside the school." And she felt good about her second year of teaching. She said, "I have had difficult situations and have come through them." She also recognized that she had been able to implement more of the methods learned in the Interdisciplinary teacher education program, during her second year of teaching.

(5) Louise Brown. Louise Brown taught in the only elementary school in a rural town in Massachusetts. It was located in the country, far away from any town center. Louise Brown had come to this school for her first job, after graduating from the University of Massachusetts. She described the school as traditional. There were 17 children in her second grade class. She had no teacher aide.

Her class was observed for this study near the end of the school year in her first year of teaching. However, to understand what she had

accomplished that year, it is appropriate to describe her introduction to the school. She said, "I was a new teacher, and the principal was new, too. We learned that every subject had a workbook." Miss Brown tried to conform. "I thought I had to do it that way." The principal also described the traditional curriculum that she found throughout the school: ". . . Ditto sheets, workbooks, and filling in little blanks that only asked simple, recall questions, was a way of life."

But Miss Brown had the attitudes of a teacher attuned to the developmental-interaction approach to teaching and learning. First, she observed the children, as they worked with the textbooks and workbooks: "I saw the children just going through it, and not caring--struggling with it." And she listened to the children: "I let children say what's on their minds. I think they are people, too." She told them that she "knew it wasn't exciting, but they had to do it". She attempted to comply with this school's traditional textbook/workbook curriculum for several weeks.

Then Miss Brown talked to the new principal about her perception of these children's needs. "We needed to make it more active for them. They needed the opportunity to move around, to have more hands-on things like Integrated Day," referring to the Interdisciplinary/Integrated Day Program for teacher education at the University of Massachusetts. The new principal supported Miss Brown's ideas for change in her classroom, to meet her student's needs as she saw them.

She changed the time schedule, the room arrangement, and the materials for learning. Her changes were typical of the developmental-interaction approach to Provisioning. She set up the day in large

blocks of time, when several learning activities could go on at once. She pushed the children's desks together in bunches of three to five, which left plenty of space for six Learning Centers all around the edges of the room. And she brought in more manipulative materials, library books, art materials. These were arranged on open shelves, readily available to the children as needed. She began to use more individualized and small group approaches to learning and teaching (Instruction of the developmental-interaction methodology). The principal later approved wholeheartedly, saying that "The children have responded beautifully."

Miss Brown started every day with a class meeting. She called it "Sharing Time" and provided a large chart listing which children have a time to talk each day. They can bring in one thing to discuss with the class. Miss Brown said that this was a new activity at this school; at the beginning of the year, many children did not want to "share", since they had had no experience with it. "But," she said, "soon all did."

Miss Brown considered this daily "sharing" activity important for two reasons. "It's a time for them to gain confidence in front of a group," she said. Also, she placed a high priority on their learning respect--for both others and themselves. She explained, "People respect them when they talk. They have to listen, look at them, and acknowledge what they're saying." She established a procedure: Two children could ask questions or make comments to the child whose turn it was to "share" his or her interests with the group. Miss Brown said, "I had to set a strict pattern because they were chaotic in the beginning." She

remarked, "It took a lot of patience. I felt really stressed in the beginning of the year."

Now, at the end of the year when the class was observed, it was quite evident to the observer that these children had a warm, personable feeling toward each other. They obviously had so much self-respect and respect for each other. When the observer commented on this, Miss Brown replied, "I tried to achieve that." This is an important aspect of the teacher characteristic Humaneness, defined by Bussis and Chittenden (1970) as Respect for Persons, Warmth, and Honesty of Encounters, and identified with teachers having a developmental-interaction approach to teaching and learning.

Miss Brown had recognized that the emotional and social need of the children had to be provided for, as well as their academic needs. These Ideas About Children and the Process of Learning are typical of the developmental-interaction type of teacher. Miss Brown said, "I learned that I needed to set a strict pattern but not let it seem strict, because they rebel." She continued, "They do rebel against authority." She talked about the kinds of homes they come from, saying, "If you drive around, you'll see it's a poor area." She mentioned child abuse, wife abuse, violence and divorce. "These children come from very difficult homes." Miss Brown had set about to teach these children a whole new way of behaving. She wanted them to learn to take responsibility for themselves in the Learning Centers and have a new attitude of respect for themselves, their peers, their teachers, and their learning. The way she achieved this can be seen in her methods of Instruction

and Provisioning, as well as her Humaneness (Respect for Persons, Warmth, Honesty of Encounters).

After the sharing meeting, there was a large block of time--about an hour and a half--for Reading and Language Arts every morning. The children did a variety of activities in five of the Learning Centers in the classroom, which Miss Brown called "stations". Both direct and indirect Instruction went on during this time. The children worked in small groups of two to five, which Miss Brown changed as children's needs change. These groups rotated every 15 minutes among the five Learning Centers during the reading time.

Having a variety of learning activities going on at the same time is an Instruction method of the developmental/interdisciplinary approach to teaching and learning. On the morning that Miss Brown's classroom was observed, the following small groups were working in different parts of the classroom at one time: (1) Four children were at a table with the teacher in the Instruction Station, where direct teaching of reading and appropriate skills were going on; (2) Three children were at the Activity Station, painting a rural related to a current social studies theme; (3) Two children were at the Listening Station, with earphones on; after following the story in the books at hand, they would work together on question-and-answer sheets about the story; (4) Four children were at the Skillpack Station; two were doing designated pages in a workbook, and the other two were doing a spelling game together; (5) Four children were sitting on the rug in the classroom library corner, which had shelves filled with children's literature (which Miss Brown had brought in from a public library as well as the

school's library); this was the Silent Reading Station--two of the children were reading books of their choice alone, and two of them were sharing a picture book.

All of the children appeared to know just where they should go and in what order for their rotation in the "stations" every 15 minutes. They took responsibility for their work. There was a relaxed, warm, accepting atmosphere in the classroom. The children would spontaneously talk to each other, share ideas, help each other. They worked together well. They could move freely about the room to get materials as needed. The tone for this cooperation and respect for each other was obviously set by the teacher, in the way she treated the children--her warmth, consideration for individuals as they expressed their own ideas, and her trust in them as they worked independently. Another aspect of the Humaneness noted in teachers with a developmental-interaction approach was a deep sense of trust in children (Bussis & Chittenden, 1970; Walberg & Thomas, 1971). The sense of trust was evident in Miss Brown's classroom.

There were many specific ways that Miss Brown adapted the academic work to show the Respect for Persons of the Humaneness characteristic of developmental-interaction teachers. For instance, Miss Brown took the spelling words from the children's own writing and interests in science and social studies. She also used the children's own writing as material for their learning to read, both their individual original stories bound into small books, and their class stories written together.

Miss Brown discussed her reading program as a "children's literature-based program," which also included ". . . using their own

writing, to read and to spell". Such a program is sometimes called an Individualized Reading Program, and it is a method of the developmental-interaction approach to teaching and learning. Miss Brown had needed a larger collection of children's books to implement this program, having found very few children's books ("picture books and story books") in the school library when she first came to the school. Therefore, she had borrowed a great many children's books from libraries in larger towns nearby, and the principal had secured funds to buy more children's literature.

To support the purchase of more children's literature for the school, the new principal had conducted a survey among the children themselves throughout the school. The majority of the children rated the basal readers as "boring" and said they wanted more literature to read. In her class, Miss Brown used the basal readers "only to teach skills", she said, to small groups of children. She provided time each day for them to read children's literature in one of the Learning Centers, or stations. Also, the workbooks were used for a short time as skill practice at one of the stations during the reading period. Miss Brown also read aloud to her class every day from good children's literature. After a few months of reading lots of literature, plus doing their own creative writing and having peer conferences about improving their writing, these children had developed an objective attitude toward the basal readers. They began to make suggestions about how the author of the basal could improve his or her own writing. They would say such things as, "Why did he do that?"

After the large block of time for reading and related activities, as described above, there was snack and recess for the children in Miss Brown's class. Then it was Writing Time, every morning for 30 to 45 minutes. Miss Brown's class was one of two classes in the school that had a "process writing" program. During writing time, Miss Brown held individual conferences with children while the others wrote original stories at their desks. After a period of time for writing, there was a time for peer conferencing, when pairs of children would discuss each other's stories. The children worked well together. They spontaneously helped each other. A boy heard someone else talking about his snake story and said, "I have a snake book--right here in my desk." A child asked the visitor, who was observing the class that day, "May I read my story to you?" Then three others brought over their stories for the visitor to read. Miss Brown later said that the children had done their own publishing of many booklets of their stories that year. Some of these were on the class library shelf for others to read. Sometimes the children had put their stories on tape, also, for use at the Listening Station. There were also several large books that the class had written and illustrated together, on their interests studied in science and social studies. Some of the titles of these books were Pilgrims, Bus Safety Rules, Our Science Center Trip, Love You!, I'm a Little Angel (Christmas stories), Valentines. A large collection of individual stories had been gathered together in a class anthology called Our Story Book.

Some children were ready, on the day that Writing Time was observed, to read their individual stories to the class. A discussion

followed the reading of each story. Other children gave helpful suggestions and appreciation to the writer. The teacher's role was to guide their discussion and draw out ideas, with questions such as, "Why don't you think that's a good thing for the hippopotamus to do?" The writing program was an example of the indirect Instruction of the developmental-interaction approach. Also, the writing program was another vehicle for teaching respect. Miss Brown showed deep respect for each child's own interests and ideas, and the children expressed this respect to each other (Humaneness). Miss Brown also did direct Instruction (a more traditional method of teaching) when she saw that two or three children needed help with the same skill. For instance, she might see from their writing that a few children were confused about the use of capital letters or commas. She would gather these few children together for a small group lesson on that particular skill.

After lunch, when Miss Brown always read aloud to the class, she varied this important activity at times. Sometimes one of the children read aloud, from a book of his or her choice, to the class. This was a more realistic way to improve their oral reading ability than reading one page from a basal reader, she thought. And it was more interesting reading when the children chose a book from the classroom library.

Just before lunch, there was Mathematics Time. Miss Brown's Ideas About Children and the Process of Learning can be seen in her mathematics program. She said that her teaching was "adapted to their style". She perceived that the children have "a lot of different abilities" and she had individualized the mathematics program accordingly. She also set up temporary small groups for direct Instruction

when a few children had the same help with a particular skill. The way she organized the mathematics class was to give some initial introductory information, then to give individual assignments, then she circulated among the children at their desks, helping them where needed. This role of the teacher--going to the children while they work and helping individuals--is a method of the developmental-interaction approach to teaching and learning. Another method of this approach is the use of manipulative materials to give a concrete way to understand abstract concepts. Miss Brown said that she had added Cuisenaire rods and other hands-on materials to the class mathematics program this year, but she would like to have more manipulative materials next year (Provisioning, Instruction). She used manipulatives for exploring mathematics concepts on days when there was a large block of time for mathematics. Then she used reinforcements and more written work on days when the mathematics period was shortened by the need to schedule gym and music periods with special teachers.

There was a large block of time every afternoon (an hour and a half) which Miss Brown reserved for "Project Time". This was when she provided integrated curriculum studies typical of the developmental-interaction approach to teaching and learning. These projects were designed around themes in science and social studies; they always integrated other disciplines (Provisioning, Instruction).

Miss Brown said that she taught "process science". Her approach was one of inquiry, "let's find out", exploring. She said, "We use a lot of environmental things--plants, bird nests, rocks." The children brought in things and she would start with their interests sometimes.

Miss Brown said that she tried to get the children outside as much as possible for science study. "We went on a bird hunt and found one crow that day." The class had studied birds, fish, and mammals that year. They integrated the arts, reading, and language with their science studies. "We also write about them," Miss Brown said of the science interests. While Miss Brown had brought in many hands-on materials, the children sometimes asked, "Can't we use our science books?" The rest of the school studied science with textbooks and workbooks. Miss Brown said that she used the textbook sometimes as an ideas source, and "I take off from there" to plan "process science" projects. She had also taken the class on a day's trip to a nature center.

In social studies that year, the entire school had a Multicultural Studies project. The new principal and the teachers had planned this for the community. Miss Brown explained, "In this town, people do not come in contact with other cultures." The principal thought that this would bring the parents closer to the school, since very few had come to parents' meetings. The multicultural projects would result in programs put on by the children for the parents.

Each class had chosen the countries they wanted to study. They had planned interdisciplinary curriculum projects on their countries. Then each class had culminated their studies with an afternoon or evening assembly to which many parents did come.

Miss Brown had chosen China and India for their countries. There were many integrated activities; again, a developmental-interaction method of Instruction and Provisioning. For their final presentation of what they had learned for their parents, the children prepared Chinese

and Indian food and made typical costumes to wear. They did dances from those countries and read aloud their original stories and reports about the countries. Miss Brown said that she did not use the textbook or workbook of the traditional school in her social studies program. Instead, she valued the hands-on learning that the children could have from integrated curriculum activities, plus their research and reports using more interesting resource books that she had borrowed from libraries, or from the school library.

There were many ways that Miss Brown had integrated the arts, reading and writing in the social studies program. For instance, in their study of Asian countries, the children had done Indian floral designs, and they had a harvest festival in the classroom. They also made Chinese dragon banners and wrote dragon stories. They made robes and turbans like the ones worn in Tibet. Also, the arts were integrated in other ways in the curriculum. They did frequent mural paintings about other themes and interests. There were displays in the classroom of individual art work in paint, finger paint, and clay.

After school, Miss Brown talked about her work with the children. She discussed her methods of Diagnosis and Evaluation. "I think the children show you what they can do and how much they've progressed, without tests," she said. "They freeze up as soon as you mention tests--they're scared." There had been much testing in this traditional school before the new principal came, but now only one test was required. This was at the beginning of the year, for diagnostic purposes. Miss Brown said that the upper grades had more tests, but in the lower grades, "we are more relaxed".

Miss Brown employed many Diagnosis and Evaluation methods typical of the developmental-interaction teacher. She kept several types of checklists. For each student, she had a reading card and a mathematics card, on which she recorded ". . . what I have covered for each child". She said that she can also see a lot of progress in each child's writing. She said, "It's my observation" with which she evaluates. "I don't find it difficult. In some ways, I think it's an instinct." She continued, "If I see a problem, there's a team of specialists that come--a psychologist, a special needs teacher." Miss Brown thinks it is better to rely on a teacher's observation and personal record keeping in the lower grades. She thinks that "it allows a teacher to be more relaxed, to go with the flow".

Miss Brown's Ideas About Children and the Process of Learning were evident in her teaching. She gave attention to the development of the whole child. She explained, "I think the social skills are just as important as the academic skills." This is an attitude characteristic of the developmentally-oriented teacher. She talked about the children's need for love and attention--and how they "get yelled at, at home". Therefore, she said, "I tell them right off--I'm not going to yell." She expressed her concern with the classroom atmosphere, which she called "the mood, the environment". She thinks children's feelings and fears should be expressed in the classroom. She builds respect and confidence in many ways. She listens to children's ideas and gives them a share in the planning of activities. She says, "I try to give them a lot of choices." Also, she said, "I set limits." She thought that the children needed guidance in school as to behavior, because there were no limits at

home. In her classroom, she said, "They know what's required of them." For instance, they know that they must go to each "station" (learning center) every day. They also know that they should respect and help each other.

Miss Brown's Ideas About Children and the Process of Learning are seen in the way she plans the curriculum with children's participation and shared decision-making. She said, "I build on children's ideas and what they're interested in." She said that their interests often come out in their writing, and she picks up on that for class discussions and planning learning activities. "We talk things over," she said, "and we vote on everything." An example was the making of a class book. They had voted on the name for it that day. Miss Brown understood the importance of active involvement for children's learning. She thought that their academic achievement was tied in with their having good relationships in the class and cooperative learning in small groups. More than simply teaching groups, she valued the children's interacting with each other as a way to learn.

Miss Brown showed a great deal of Self Perception, a characteristic of teachers in developmental-interaction classrooms, as identified by Bussis and Chittenden (1970). In discussing the goals she felt she had achieved that year, she said she had been able "to establish the kind of classroom environment that is caring and nurturing, and that children can learn in". She added, "That's what I wanted to do." In discussing her relationship with the children, she expressed Humaneness (Honesty of Encounters, Respect for Persons, Warmth), another characteristic of teachers in developmental-interaction classrooms, as noted by Bussis and

Chittenden (1970). She said, "They know they can talk to me and I can talk to them. If I have a problem, they can help me solve it." She emphasized, "I show them how I feel. And they do, with me, too."

Miss Brown's Self Perception was seen when she talked about her respect for the children as individuals. She expressed delight in how they had learned to cooperate and help each other and have "team spirit" this year. She said she had seen older children in the school working against each other, and one of her goals was to help her children become a team. She said of her Instruction, "It's all broken up into small groups. They needed to be with people they could interact well with-- two or three working together." Her focus was on meeting children's needs, on all levels, cognitive and affective. She saw her role as facilitator, guide. During the study times and project times, she circulated around the room and helped children where needed. These are the attitudes and actions of a developmental-interaction approach to teaching and learning.

When asked what she perceived as her goals for her future teaching, what she still needed to work on, she talked about understanding children better. "I wish I could have more knowledge about each individual child's needs and how to teach to that need." She said it takes time to know each individual.

Miss Brown herself had gone to traditional schools as a youngster. It was in the early "Introduction to Education" course at the University of Massachusetts that she had first begun to think about different approaches to teaching and learning. In that course, she visited different types of schools and the underlying rationales were discussed in

the course. That was when Miss Brown first saw a nontraditional classroom run along developmental-interaction lines. She described that classroom as "a process curriculum drawn from many sources, with many manipulative materials". Then she sought and found a teacher education program that teaches this methodology--the Interdisciplinary/Integrated Day Program at the University of Massachusetts.

Miss Brown talked about her experience as a college student and teacher trainee in the Interdisciplinary Program. "It was outstanding--very valuable to me." Especially valuable, she said, was the "hands-on way the classes were done". Now that she has a classroom of her own, she said, "All I could really draw on was what I had done, not what I had listened to." She spoke of the science course and the multi-arts course as being "all hands-on. . . . We had the opportunity to take the materials and use them." She added, "We did small lessons and taught each other." She described the science methods course, saying, "I learned science teaching techniques by doing them." She spoke of the value of the reading course, in which she had to construct a lesson plan over and over. "At the time, I was frustrated, but now I see the value of it." She often remembers that the professor insisted that she know and state why a lesson was needed. She said, "We teamed in the curriculum course," in preparing for the "Integrated Day" Day in the prepracticum site. Now, Miss Brown said, she had her children "working together in two's and three's, in reading, in writing and science and social studies projects". She said, "Children learn this way." She contrasted this understanding of learning with the attitude of the

traditional teachers in her school: "They think they [children] are cheating if they help each other."

Miss Brown said of the professors in the Interdisciplinary Program at the University of Massachusetts, "They gave us the opportunity to learn what kind of teacher we wanted to be--what style we had--to be individuals." She said that the professors modeled how to build on the strengths of students. They would "tell us our strengths and what to work on. . . . They gave us confidence."

She was asked whether she thought there were any ways in which the workshop courses in the Interdisciplinary Program could be improved. She said that, perhaps, teacher/graduates could come back and talk about teaching. "You don't have any idea--my first day of teaching was awful," she said. "You're on your own for the first time." And what made it so awful? "The mechanics--the little things that were never your responsibility--the transitions, the seating plan, the schedule."

Miss Brown attributed to the Interdisciplinary Program her understanding that each child is an individual and that the teacher could see his or her strengths. She said, "I got my style in the Integrated Day [Interdisciplinary] Program--being more relaxed, allowing children to be more confident." She also spoke of the two and one-half day pre-practicum done in an elementary classroom at the same time she took the courses. She valued the assignments to do small lessons with children, saying, "In the prepracticum, we were doing the kinds of things we did in the courses." Also, she taught in several different types of schools while she was a preservice teacher at the University. The most valuable to her was the student teaching experience in a school designed along

developmental-interaction lines. She said she could see how the theory of the Integrated Day could be put into action with children. She concluded, "Now, I let each child be an individual, and see his strengths."

Five Teachers in Developmental-Interaction Schools.

(1) Katherine Bennett. Katherine Bennett taught in the only elementary school in a small town in Massachusetts. The entire faculty was committed to the developmental-interaction approach to teaching. This was Katherine Bennett's second year of teaching. She had taught in another school, a traditional school, for her first year of teaching. Then she had come to this school, which she characterized as "informal, child centered, a warm supportive environment". There were 20 children in her fifth grade class. She had no teacher aide.

Miss Bennett's classroom was arranged with several areas for common use. The children's desks were pushed together in groups of two to six. This left room for several learning centers around the room. This space arrangement is an important aspect of Provisioning in the developmental-interaction approach to teaching.

The mathematics learning center, in one corner, had open shelves with many manipulative materials on them, as well as "Math Activity Cards" written by the teacher. There was also an art center on one side of the room, with a wide variety of art materials in open trays on the shelves. Each tray was labeled: "Bookbinding Materials", "Fabric", "Scissors", etc. Displays of children's art work were on the walls. There was a long library shelf along the window wall. It was filled with a great many books, both children's novels and information books. There were also cloth-bound books that had been written by the children

and "published" by them. On the opposite wall, there was a computer center with two computers. There were displays on the bulletin boards of past science and social studies projects done by the class.

Miss Bennett began the school day with a "morning meeting . . . to plan the day and tell any news they have," she said. She later said, "They can share something about themselves." The children could bring in things to talk about, but not toys. This class discussion, centering around the children's interests and news, was a warm, accepting way to start the day, showing Humaneness (Respect for Persons, Warmth, Honesty of Encounters).

After this meeting, the class had reading time. Miss Bennett explained, "Everyone reads from a book of their choice." This is a plan of Instruction called Individualized Reading. They were reading children's novels, many different ones. The children could also choose where they sat for reading. Some sat at their desks, some stretched out on the rug. Others sat cross-legged in cozy corners of the room. There was a relaxed atmosphere. Miss Bennett later commented, "They can pile up in any corner of the classroom. I want them to feel comfortable while they read" (Humaneness). The children became deeply absorbed in the novels they were reading silently. Miss Bennett said, "There is Sustained Silent Reading throughout the school once a week, but I do it every day for 35 minutes." While the children read, Miss Bennett had individual conferences with one child at a time, at her desk. She is able to do two or three conferences a day lasting 10 to 15 minutes each. She said, "I cover each child twice a month." In these conferences, she is able to give direct Instruction in reading to individuals. They

discuss the book the child is reading, the characters, plot, etc. Emphasis is put on comprehension, reading with expression, and individual interests. Each child reads aloud to the teacher, ". . . and I read aloud to them," she said. Miss Bennett stressed ". . . enjoyment of reading, success--that's the best way to teach reading".

When asked whether this Instruction method, called an Individualized Reading Program, was done throughout the school, Miss Bennett said, "No. Individualized Reading is my program; I introduced it to these children. Last year, they had reading groups and read from the same book." Asked how she had changed them to an individualized reading program, she said that some children had problems at first. They could not be self directive and choose their own books. Also, in the past, reading had been "something they had to do and never would have chosen to do". And there were social distractions, too, when placed on their own.

However, there were several teaching strategies that Miss Bennett had used in her Individualized Reading Program; these helped the children to function independently. First, she had the individual reading conferences, described above. Second, if a child had difficulty choosing his or her own book to read, she would assign one that was suitable to his or her abilities and interests. Third, she began right away to give part of the reading time to "Sharing" sessions. She said, "At Sharing, they talk about the books they're reading. Their friends would say, 'This is a good book--you should read it'."

The fourth teaching strategy was a form of indirect Instruction, as well as Provisioning. Instead of book reports, Miss Bennett assigned

a monthly Reading Project. These integrated the arts with reading and writing. For one month, the children made book advertisements for the books they had read. During another month, they made cartoons as reports on their books. Another Reading Project was to make dioramas, choosing a scene from a book to illustrate and write about. For the current month, the Reading Project was to read a book with a friend (one or more), then choose a scene to dramatize for the rest of the class.

These creative, individualized approaches to reading and reporting had a positive effect on all of the children. Miss Bennett said that, in the Fall, "Some children came in identifying themselves as readers." But some came to her class initially with a different attitude. "Their natural tendency was to get out of it" (reading). However, she said, "That wore off quickly. Now they all enjoy reading."

Miss Bennett spoke of "the almost unexplainable success for children who had reading problems," when they were in her Individualized Reading Program that year. She said that this Instruction method had been ". . . a low pressure approach. They do not have to read aloud in front of people. They are not singled out in groups of high and low achievers." Miss Bennett also said that the other children's perception of these children had changed. Now, she said, "They are not seen as being in a 'dumb' or low reading group." Now, they discuss books with their friends and recommend books to each other. "They all enjoy reading," says Miss Bennett. Of the children who tend to have reading problems, Miss Bennett said, "I've had more success with those kids than anyone else."

When asked how she had obtained such a large collection of books for her classroom shelves, Miss Bennett said, "It was my priority; I built it up." She said, "There are quite a few hundred books in my classroom." Such Provisioning is typical of the developmental-interaction approach to teaching and learning. Miss Bennett's profusion of good children's literature had come from three sources. Some were from the school library, some were brought from home by the children. And every month, Miss Bennett went to large libraries in nearby towns to borrow books for her class. When asked where she got so many beautiful books on birds (for an integrated science project), Miss Bennett replied, "I wiped out two libraries."

Miss Bennett talked about the advantages of teaching reading as an Individualized Reading Program, with children's literature instead of basal readers. "I think that reading is something that children like to do naturally," she said. "It should not be a chore--not a negative thing." She said that these children had never been given the responsibility for their reading before. Now they choose all the books they read. "I don't direct it," she said. "Sometimes, I recommend; I'll say, 'Why don't you read this book'." The children also keep their own reading records in Miss Bennett's class. This giving of responsibility for their own learning, this planning of choices for children, are important aspects of Provisioning and Instruction in the developmentally oriented teacher's classroom.

Some children in Miss Bennett's class were reading ten books a month by the second semester. She was pleased that "now, kids sometimes read during choice times". She stressed, "They enjoy reading." The

observer of the class noted that the children had been deeply absorbed and interested in the books they were reading. Miss Bennett replied that other visitors have remarked, "You mean they'll still read if you walk out of the room?" She said, "That deep concentration is real reading."

Another important aspect of Miss Bennett's program is her reading aloud to the entire class every day, usually after lunch. She said, also, "We discuss the books we read in this class, more than in the other class I taught last year" (in another, more traditional school).

After reading time, there was writing time. The hour-long writing period was divided into three parts: individual writing for 25 minutes, then peer conferencing (when children help each other with their writing) for 25 minutes, and then a 10-minute Reading Circle, in which some children read their finished stories to the class.

When writing time began, the children took out their writing folders and became deeply absorbed in their writing. The teacher held individual writing conferences during this time. She later described these conferences. "I focus on their strengths," she said, "then I give them one skill to work on." This is a Humane approach.

The school had had a process writing program (as described above) in all classes for three years. Therefore, Miss Bennett said, "There had been a lot of 'me' writing." She perceived that these fifth graders needed other themes than biography to write about. Every month, therefore, a theme was chosen through shared decision-making ("... their ideas or mine," she said). They had already written adventure stories and survival stories, and now the theme was mystery stories.

Miss Bennett said, "We discuss what makes a good mystery, what works and what doesn't. We read mysteries, and then write books like that." This activity integrated the reading program with the writing program. Art was also integrated when they did illustrations for their stories and bound them into books. Art was integrated in the monthly reading projects, also. There had been writing projects in which the children did research on a topic, wrote it up, and then made an object as a model. Examples were hot air balloons and puppet shows.

The children also had writing projects in which they wrote non-fiction. Children chose topics of individual interest, did research on them, then wrote about them. Many illustrated these pieces and bound them into "published" books, also. The children's fiction and non-fiction was available on the shelf for others to read; some of the titles were The History of Horses, The Salmon Story, Being a Twin/ Having a Twin, Are There UFOs?, Koala Bears.

Miss Bennett later said that the children in this class had "published" (written, illustrated, and bound) over 70 original books that year. Many had put their books in the school library, with library cards, so that others could take them home and read them. (This was the only class in the school that did this.)

There had been another interdisciplinary project in Miss Bennett's writing program. Her children had written, illustrated, and bound many picture books for the younger children in the school. First, Miss Bennett's students had read picture books and "discussed patterns, characters, and how to write them". They had also gone to the kindergarten and first grade to read picture books to the children. Then

these fifth graders had spent weeks writing stories and binding them into picture books, with beautiful illustrations. Miss Bennett said, "They left their picture books in the Kindergarten for some time, and the younger children liked them."

Miss Bennett commented, "This fifth grade has elaborate celebrations of their writing." They had had several author's parties that year. They invited the fourth and third grades and served refreshments. Since their stories and "published" books were often 10 to 30 pages in length, each would tell what their story was about and then read a passage from it. Sometimes they got into small groups and read one of their books aloud. There were also school-wide writing assemblies, in which children read their own writing to others.

Every day in Miss Bennett's class, children read their original stories to each other, sitting in a circle on the rug, in a class meeting. They called this the Author's Circle. They invited comments from their classmates--what they liked and how it could be better. Also, Miss Bennett said, "We read each other's writing a lot." This activity was cited by Bussis and Chittenden (1970) as evidence of Humaneness (Respect for Persons, Honesty of Encounters, Warmth), one of the teacher characteristics identified by those researchers as typical of the developmental-interaction type of teacher.

Miss Bennett said that some of her children had developed "sophisticated styles" of writing, and that others "get inspired by it". She spoke of some whose "writing voice was very well developed".

After writing time, there was a special time every day that Miss Bennett called "choice time". This was about half an hour, in the

middle of the morning at 10:30. She explained, "I think it's necessary to create times when kids have the opportunity to explore." She said, "I try to get kids to experiment with different materials," and she sees "constant problem solving" going on at "choice time". Also, she said that "if a kid needs to get something finished--some are slower than others--he can finish it at 'choice time'." These reasons indicate Miss Bennett's Ideas About Children and the Process of Learning, as well as her Humaneness. Also, there is the Provisioning of choice for children and of fostering good relationships among children. Her providing of a "choice time" every day also indicates her allowance for difference rates and styles of learning, and her provisioning of a wide variety of hands-on materials for learning. All of this characterizes the developmental-interaction approach to learning and teaching.

During "choice time", the children could move freely about the room, to work in different learning centers. They worked either alone or with others of their choice. On the day the class was observed, one child was working on an art construction project, three were working at the computers, two were playing a mathematics game, one was writing a story, one was reading a book, and eight were working at a group game where the teacher had joined in.

Miss Bennett later said that "choice time" is when they often work on their current reading project, such as making dioramas or writing plays together. The children make use of the well-stocked art center in the room, at this time. Miss Bennett said that she had observed that children "choose the things they are good at". She said that this builds their confidence. Also, she observed that "it makes kids more

willing; it gives them more room to take risks in other areas".

Miss Bennett had provided a chart on the bulletin board, both to give suggestions for activities and to provide for children to sign up for the most popular "choice time" things.

Next came mathematics time, in a period just before lunch. This class and several others in the school exchange their students for mathematics. Some children left for other classes, others came into Miss Bennett's room. Both a mathematics textbook and manipulative materials are used. There are also mathematics games. Miss Bennett did direct Instruction at the blackboard for the first half of the class, then she gave out packets for individuals and partners to work with. Then she moved about among the children's desks, to help where and when needed. She said to one child, "These are all right--check the top one," and to another, "Look again." This was a positive, Humane way to correct mistakes.

Miss Bennett used a variety of approaches to teaching mathematics. She said she often introduces a concept with games and "group-problem solving things". Sometimes she arranges for the children to work "with partners and help each other". During the mathematics time that was observed, some children spontaneously went to the mathematics learning center to get things they needed. This corner of the classroom was well stocked with manipulative materials and games for mathematics. On the bulletin board above the shelves, there were colorful symmetrical designs, showing the integration of art and mathematics in a project. This variety of direct and indirect Instruction, with both hands-on and print materials, is typical of the developmental-interaction type of

teaching. (By contrast, in a traditional classroom, only print materials--textbooks and work sheets--and direct instruction would typically be given the children.)

After lunch, Miss Bennett provided large blocks of time for the children to do interdisciplinary units based on science and social studies themes. In science, at the time of the observation, they were doing a study of fish. Miss Bennett said that they would do research and write on the fish of the river, the lake, the coral reef, etc. They had done beautiful paintings of fish, which were displayed in the classroom. Miss Bennett said that lots of mini-projects were also done from time to time, centered around the natural science interests of individual children. She also used packaged programs and kits for hands-on science experiences. A winter study of birds in their locality was evidenced by a mobile hanging in the corner, containing children's drawings of birds they had seen. Also, there had been a pond study in the Fall, when lots of natural materials had been brought into the classroom. The children chose individual research topics after a trip to explore a pond.

In social studies, there had been a school-wide project in the Fall on the Middle Ages. This had resulted in a pageant and drama/dance production in which every child in the school had a part. The teachers had the help of a visiting artistic director, funded by a state grant. Miss Bennett's fifth grade had done an integrated unit on the Middle Ages at that time. They read children's novels about the Middle Ages, did research and wrote stories, constructed castles and dragons. They also discussed the values of the Middle Ages, comparing them to modern times.

Miss Bennett's class had also done an interdisciplinary social studies unit on Early New England, later in the year. They had done weaving and other crafts of the times. They had made Early American toys; then they helped the second grade in the school to make their own toys.

Another mobile in the room evidenced an earlier unit on the states in our country. The mobile had topographical map-pieces of each state, with other pieces depicting the state birds, trees and flowers. The children had chosen the state they wanted to do research on. They had reported to the class in several ways. They had written stories about their states. They had also made up games, with questions and clues, to help others learn about their states.

Art was integrated with all other subjects in Miss Bennett's class, as noted above. The art learning center was obviously well-used. There was a wide variety of art materials, including recycled things, on the open shelves. A shelf also held a wide variety of art work: a papier mache cat, a wire sculptured horse, several pieces of paper origami animals. The children's drawings and paintings, hung on the walls, were in a variety of media--pen ink, water color, pencil, poster paints. The books that the children had written and bound were well illustrated. There was a poster in the art learning center, entitled "Where to Get Ideas for Art Projects", with many suggestions on it. This is an example of the Provisioning and Instruction in a developmental-interaction classroom.

Miss Bennett talked about her planning, a part of Instruction. She said she works 14 or 15 hours a day. She spends time getting materials

ready. She also spends a lot of time thinking about individual children's needs, asking, "If something is not working well, how can I make it work better?" Miss Bennett showed Self Perception when she talked about an Instruction strategy she uses. She first introduces some concept to the class, then gives them opportunities to explore it in projects and activities, with hands-on materials and a variety of resource books. She sees her role as guide and facilitator in the initial discussion; then she circulates among the children as they work, helping where needed.

She said that she had the autonomy to plan the program content in this school. "It's wonderful to be able to do my own curriculum," she said. There are special kits of materials for science and social studies projects, done around themes, and collected by the teachers in this school--"built over the years," Miss Bennett said. These take the place of a written curriculum guide. She said, "There is no set curriculum guide in the school." Continuing her discussion of her planning, Miss Bennett commented, "I spend more time thinking about planning than writing it down." However, she spends a great deal of time after school and on weekends, gathering and preparing materials for the projects. She also goes to several town libraries to borrow good children's books and resource books for her children (Provisioning).

Miss Bennett discussed her methods of Diagnosis and Evaluation of children's progress. She observed the children at work and kept anecdotal records. She said, "I make notes to myself" about children's work. She said, "You intuitively have a feeling" about a child's progress and needs. She explained, "I work it out with the child; I ask

different questions" to find out what he or she knows, and to ascertain needs and next steps. The children kept their records of books they had read, which had a place for Miss Bennett to initial when she had individual conferences with them.

Continuing her discussion of Diagnosis and Evaluation, Miss Bennett said that there are two times when she does this: during individual conferences and when she moves around the room to help children at work on their projects. She said, "I don't want to focus on weaknesses." She gave the individual reading conference as an example. Her emphasis is on "having good experiences in reading, enjoying reading, understanding what they read". She tries to concentrate her attention on the student's "getting a thought or idea from a book, enjoying a good book". In teaching mathematics, there is a structured textbook program combined with manipulative materials for understanding the concepts. Miss Bennett says, of the mathematics program, "I'm interested in their thinking skills."

There are four Evaluation reports to parents a year in this school--two written narratives and two conferences. Miss Bennett says, "I discuss the children with a wholistic view--their strengths, goals, progress." Also, she says, "I usually go over the curriculum areas and say how they're doing."

Miss Bennett's Ideas About Children and the Process of Learning were evident in her teaching methods. She gave attention to the development of the whole child--the emotional/social as well as the intellectual development. She focused on strengths in her teaching, as seen in the way she taught mathematics and reading. Of her writing

conferences, she said, "I talk about strengths, and give them one skill to work on."

Her Ideas about Children and the Process of Learning were evident in her provision for shared decision-making and in her giving choices to children. In planning the monthly reading themes, she said, "I take ideas kids have; it's my ideas and theirs. They share in ideas for reading projects." Miss Bennett thinks that self-initiated learning and self-directed learning are so important that she provides a special choice time for half an hour every morning. These are important aspects of a teacher's role in Provisioning for the developmental-interaction classroom.

Miss Bennett's Instruction is planned so that children learn from each other. There is cooperative learning in small groups in many aspects of her program. This was seen in the science and social studies projects described above. She said of her writing program, "They meet together for peer conferencing. They help each other when they're stuck." Two or three children could choose to work together on the reading projects.

One could see that Miss Bennett's Ideas About Children and the Process of Learning include a high value placed on individuality. Immediately on entering the classroom, one notices a chart with each child's picture and name on it. Much of her teaching is to individuals, in conferences and at their desks while they work. Her planning is based on her observations of individual children's needs and progress.

Her concern for individuality led her to place a high priority on children's creativity and originality. When asked why she thought

such a variety of recycled materials were desirable in the art center, she replied, "To stimulate the individual, original application of art." She said that she tells the children, of the materials, "It's there--use it your way." She encourages children to bring in natural materials, such as bird nests, "to follow children's interests" in the science program. She encourages them to add their own books to the classroom library, to "make children feel like it's their room". These Ideas About Children also evidence Humaneness (Respect for Persons, Warmth).

Miss Bennett also gave attention to meeting children's needs for security and belonging. She said she builds "a nurturing community" in the classroom. "I am committed to having kids feel good about themselves," she said. This concern also indicates the Humaneness of the developmental-interaction classroom. She talked about the progress she had seen in the children's relationships this year. When they had first come to her class in the Fall, they were competitive among themselves. "Now," she said, "there's real give and take." She valued most the fact that her students had learned this year to be "cooperative and positive with each other".

Miss Bennett's Self Perception was revealed in her discussion of her role in the classroom. She said, "I am a sort of facilitator." She talked about how she started children off on a learning project or assignment, and then they work it out themselves. Her role is to move about the classroom, from child to child, meeting individual's needs while they work. She said, "I like to think they learn a lot about how to solve problems." She said she accomplishes this in two ways:

- (1) "I do direct teaching," and
- (2) then she sets the stage for a child's

own problem solving in projects. She said, "I feel like I facilitate problem solving."

Miss Bennett talked about the difference that the type of school setting made in her classroom teaching. She had taught one year in a traditional school before coming to this developmental-interaction school. She had not been able to do an individualized reading program in the traditional school. She said, "I had to have reading groups there and use the basal readers." Referring to the individualized and interdisciplinary projects she had done this year, she said, "I couldn't teach this way in that school" (the traditional school).

She talked about what meant the most to her in this present developmentally-oriented school. There was "a supportive, cooperative staff" with the same views on learning and teaching. There was a great deal of exchanging of ideas about teaching among the staff. Miss Bennett thought that the chief influence on her development as a teacher, since she graduated, had been the autonomy and support she had been given in this developmental-interaction school (in her second year of teaching). Here, she had been given the support to use the teaching strategies and kind of Instruction and Provisioning that she believed in.

Miss Bennett gave evidence of being the kind of teacher who Seeks Professional Growth. She had given her whole time to planning for her first teaching positions, so she had not taken any further courses since graduating. However, she had sought out community resources for her students, especially the resources offered by the local libraries. She collaborated with fellow teachers in joint projects for their children. She had built collegiality and support systems with the other teachers in

her school. She said, "There are a lot of teachers here that I work closely with." She had a good relationship with the principal, whom she found "always supportive". Miss Bennett said that there was a "warm, supportive environment" in the school, for teachers as well as children. The school, she said, was "informal, child-centered". She characterized her own teaching as "child-centered--that's my emphasis".

When asked what kind of school she herself had attended as a child, she replied that her own schooling had been traditional. She said, "Everything was completely teacher-centered." But there was one teacher that had made a difference to her. That was a sixth grade teacher, a young man who went into teaching to avoid the draft. "He encouraged us to think," she said. "We had ownership over our classroom." He gave them challenges: "We had to figure out the answers." She glimpsed a new way of teaching there.

She said, "I went into teaching because mine was too traditional." She wanted to help children learn in the more interesting and satisfying way she had been taught in sixth grade. She said, "I had very clear ideas, based on my reaction to the education I had had."

Miss Bennett talked about her experiences as a preservice teacher in the Interdisciplinary Program at the University of Massachusetts. She said that she had heard so many negative things about teacher education in general, that "I never expected to learn anything". But then, she says, "I was surprised by the attitudes, and pleased to see that I had an active role in my learning," in the Interdisciplinary Program. She said that she was also "pleased to see that I was supported by the

Integrated Day [Interdisciplinary Program]--it reinforced my ideas". Her Self Perception is seen in these remarks.

Miss Bennett said of the methods courses, "I remember bits and pieces," and techniques come back to her as she teaches. "It was not really until I was in an elementary classroom," she said, "that I started to sort out all that stuff." She mentioned how the professors modeled the teacher's role and teaching methods. She said that she had been able to use, in her own teaching, several specific things from the workshop methods courses. In the science course, the professor "gives challenges, problems to solve, then let's us do our own thinking". She had tried to do that with her students. She said that, in the mathematics course, the professor "gave us a problem to solve, then walked around while everyone does it," helping individuals when needed. "I do that a lot," said Miss Bennett. She remembered how, in the reading and language arts course, the professor had put a copy of a child's handwritten story on the overhead projector. Then the professor "modeled how to bring out his strengths". Miss Bennett said, "I thought that was helpful." She also saw the model of the teacher holding individual conferences, in both the reading course and in her student teaching classroom. At another time, an instructor had shown slides about "how he helped kids read individually". Miss Bennett thought that all this had helped her learn methods of Instruction that she had been able to use in her own classroom.

Miss Bennett said that one of the most helpful and practical experiences was that "we all had to do a social studies unit" and put it into action in their internship classrooms, "for those specific children" for

two weeks. She said, "I had to think, rethink, revise," working with her cooperating teacher. "I did mine on the Hopi Indians. It was one of the most practical experiences," she thought.

There was a type of Instruction that Miss Bennett thought was important in the workshop methods courses. She said, "We learned by doing, in the arts, science, and social studies courses. They were more practical." She said that she had learned how to teach process writing in her student teaching classroom. But an instructor in the Interdisciplinary Program workshops "got me back into writing and enjoying it". From this workshop writing experience of her own, she saw what it was like to be an author. This, she thought, had been important for her later teaching of writing.

When asked how she thought the Interdisciplinary Program might be improved, she said that she had, indeed, "done a lot of thinking about teacher education". She thought that there was not enough in the methods courses about how to build on textbooks. She had taught in a traditional school her first year, and she thought that most schools today do require the use of textbooks. Also, Miss Bennett said, "We need more about how to set up the day, the week, and how to organize the classroom physically." This is the Provisioning of the developmental-interaction approach.

Miss Bennett thought that the courses should give more on children's literature, and how to set up an individualized reading program. She said that "one day was not enough to spend on individualized reading programs". She suggested that the preservice teachers bring children's books to the workshop course, have sustained silent reading for

20 minutes, then work together to design projects around the books they have read. They could also do peer conferencing, to practice doing reading conferences, she said.

Miss Bennett talked about the "Integrated Day" Day, a part of the Curriculum workshop course. That project had been "challenging . . . to take a theme and touch on different disciplines". She said that it "made you think". However, she thought that "Integrated Day" Day should be "spread out more, like it is in a real school". She said that having it all "crammed into one day--that took away a lot of its' credibility. I would never do a day like that." Again, she said, "I only remember bits and pieces, like the play we put on."

When asked whether there was any one thing that stood out to her, as the most valuable thing about her experience in the Interdisciplinary Program for teacher education, she readily replied: "The community building." She had, in turn, worked to establish a sense of community among her own students, and had cited this as one of the achievements she most valued in her teaching. She had also valued the relationship of collegiality that she had been able to establish with other teachers in the school where she now taught.

Repeatedly, in discussing her teaching, Miss Bennett said, "I don't believe in education; I believe in learning. I think it's the most natural thing there is."

(2) Betsy Simmons. Betsy Simmons taught in a small private school located in a townhouse in downtown Boston. It was near the Public Garden and the main Boston Public Library. The entire school was committed to the developmental-interaction approach to teaching and learning.

Betsy Simmons had taught there in the two years since she had graduated from the University of Massachusetts. The year before, she had been a floating teacher, so this was actually the first year she had had her own class--a second grade of 14 children. She had a teacher aide for one-half day.

The classroom was on an upper floor, with two large rooms and a large hallway. The other room was homeroom for the first grade. But Miss Simmons said, "We don't call them first and second grade classrooms--we mix the classes for a lot of activities," such as art projects and sports. They also do "quiet reading time" together every day in the front room, which is carpeted and has a profusion of library books on shelves under the windows (Provisioning). Miss Simmons said, "They can sit with their friends here, for quiet reading time and for snack time." The front room had several large tables, while the back room had little tables. Miss Simmons said, "Two or three can sit at a little table, and they can work with partners. I do a lot of instruction in there."

The small rooms did not allow space for separate learning centers. But the children had done several integrated curriculum projects that year. They had done a social studies project on China. They had made fish prints. The children said they liked the Chinese stories about dragons. They had written their own original dragon stories. Miss Simmons said, "We integrate art and creative writing in every unit we do." This is evidence of the kind of Provisioning and Instruction that allows for active, experiential learning typical of the developmental-interaction approach to teaching and learning.

Miss Simmons later said that they had studied China from the standpoint of another culture. There was also parent involvement in the project; a father of one of the children had brought many Chinese things to the class and had talked with the children about his visits to China.

There was also evidence of Miss Simmons' methods of Instruction and her Provisioning in the interdisciplinary projects they had done in their study of science. There was a unit on water, in which the children had done science experiments on evaporation and steam. They had taken a trip to the aquarium to study what lives in the water. They had also gone to the Science Museum.

There was a "Sharing Shelf" in the classroom, for things the children brought in, such as bird nests, shells, and books. "Anything but toys," Miss Simmons said. "The children bring in things all the time," she said. They talk about these things to the class, and then Miss Simmons helps them extend their interests by finding a book about them at the Public Library.

There was a year-long unit on trees. Each child adopted a tree in the Public Garden. Miss Simmons arranged for a Park Ranger to meet the class there and tell them about trees. The class went back to the Public Garden once a month, to see how their trees had changed with the seasons. They did many outdoor science experiments there, to learn about trees, leaves, seeds, etc. Miss Simmons described these activities as process science activities. She also integrated other subjects with the science study of trees. The children wrote about their particular trees and sketched them. Since paper is made from trees, they made some new paper in their classroom. Then they wrote poetry about their trees and

copied the poems on their homemade paper. They learned about recycling newspaper. The children grew quite attached to their individual trees and gave them names, like "Thunderbird", "Big Boy", "Eighteen Branches".

Throughout the school, each class begins the day with a meeting. Thirty minutes are allowed for this, and the children can tell about anything they want to. Miss Simmons said, "Everyone has a chance to be heard. This develops a sense of community." They can bring in something to talk about, or they can tell their news--"what they're excited about; what they're thinking about". Miss Simmons said that the daily meeting builds children's confidence, too. The Humaneness (Respect for Persons, Honesty of Encounters, Warmth) that allows time for children's own interests and feelings to be expressed is typical of the developmental-interaction approach to teaching.

After meeting time, there is a large block of time called "Work Time". It lasts an hour; indeed, there are two other long "Work Times" in the day, interspersed with lunch and snack. This kind of time schedule, that allows large blocks of time for integrated curriculum projects, is typical of the Provisioning of the developmental-interaction classroom.

Miss Simmons had the flexibility in scheduling to plan learning activities for the "Work Times" according to the children's needs at the time (Humaneness). She said, "If they're excited about something, I can continue it--to meet their needs." Her Instruction methods are seen in the way she organized the Math Work Time, so that a variety of activities took place. At first, she gave a brief mathematics lesson to the whole class (direct Instruction). Then she gave assignments to

individuals and small groups. They used both work sheets and manipulative mathematics materials (indirect Instruction). Miss Simmons moved around the room, from group to group, observing them at work, asking questions and helping individuals as needed (direct Instruction).

For the Reading and Writing Work Time, Miss Simmons grouped the children, but she said, "I don't have the same reading groups all the time. I split the children up in different ways." She does not want the feeling that some are ahead of others and some slower (Humaneness). She has individual conferences with children during the "Work Times". The children were deeply absorbed in what they were doing. Some were reading silently from library books. Some were writing in small booklets. Miss Simmons later explained, "They have News Notebooks. They write about what's going on in their lives. Sometimes I type it up." The children also write original stories and made books of them. She said that "they read their own writing" as part of the reading program. Also, there were several books the class had written together. They had written a cookbook when they had done a science unit on food. It included recipes they had cooked themselves, such as Apple Oatmeal Crunch and a stew like the Native Americans had. Older children in the school often came to the class to help the younger children with their cooking projects.

Miss Simmons commented on the use of the basal reader. "I don't like it, but it's necessary for children of this age." She supplemented the basal with their own writing (they read each other's original stories), and "lots of library books in the classroom". Every two weeks, the class walked over to the Children's Room at the main Boston Public

Library to bring back to their classroom the books they chose. "The kids consider it their library," Miss Simmons said. An aide came in to help at Reading Time.

There is a Quiet Reading Time every day throughout the school. Everyone reads children's literature at this time. It lasts 20 minutes and is right after snack in the morning. The first and second grade children come together for this time, sitting on the rug or at tables, alone or in pairs. The ones who can read will often read to the ones who cannot yet read.

The afternoon Work Time is an hour and a half long. Miss Simmons said this is when she does science and social studies. Several integrated curriculum projects were described above. She talked about her way of organizing the Work Periods. At the beginning, she sets up the organization for the activity. She gives clear guidelines and allows for choices by children. "Sometimes, I make a list on the board, and children choose," she said. "Each has different reasons for picking what they do," she explained. "It is important for them to learn how to make decisions." These methods of Instruction reveal Miss Simmons' Ideas About Children and the Process of Learning.

Miss Simmons continued, "They can help each other. There's no rule that says I am the only teacher in the classroom. They are all teachers." This indicates Humaneness (Respect for Persons, Honesty of Encounters, Warmth). Miss Simmons enabled children to take responsibility for their own learning. "I set it up so the kids do a lot of things without me," she said. "This enables me to help those who need it." She often had individual conferences with children during the Work

Times. She also individualized by moving around the room and giving help where needed. These organizational techniques and individualized teaching methods are typical of the Instruction of the developmental-interaction teaching approaches.

Miss Simmons' Diagnosis and Evaluation were done during the individual conferences she held with children in the Work Times. She said, "I sense where they are by their work." Achievement tests are not given in this school until the upper elementary grades. Miss Simmons said, "I really know each child and where they are and what they know." She talked about watching children change this year, and how three or four of them "just took off". She said, "It's beautiful to see the excitement of children in their learning."

The Evaluation and reporting to parents is done in two formal conferences a year in this school. In addition, there is much informal communication with parents. "There is a school-wide function once a month" for parents, Miss Simmons said. Also, she commented that "parents can call me about anything they want to talk about".

The Provisioning of materials for learning is an important part of the developmental-interaction teacher's work. When asked if any one type of material was essential to her teaching, Miss Simmons said, "I'm used to having a wide variety of materials." She mentioned the importance of hands-on materials--manipulatives in mathematics, natural materials in science, and objects related to social studies interests. "The children bring in things all the time," she said. Also, she thought that "one very special thing about this school is that I have leeway in what I order." She thought that manipulative materials "help with conceptual

learning". And she thought that it was essential to have a wide variety of children's books in the classroom (both children's literature and information books). The school has children's literature in every classroom, and "I can add lots of books from the library," she said.

Miss Simmons used science kits of materials borrowed from the Science Museum, and she had ordered four kits from the Children's Museum for social studies projects for the next year.

Teacher planning is an important part of Instruction. Miss Simmons said she does her planning at home and she goes into the school one day each weekend to prepare materials. She said there are free times when the children are at music, recess, and sports, when she plans with the first grade teacher, with whom she shares the two classrooms on the floor. She commented, "I try to plan and be organized a week ahead, but it varies with what's happening in the classroom."

Miss Simmons' Ideas About Children and the Process of Learning were apparent in the way she taught. She individualized her Instruction. She provided for active, hands-on learning. She integrated the curriculum in learning projects. Also, she gave attention to children's interests. She said, "I pick up on their interests at meeting time, in their creative writing, in the science and social studies units." She encouraged children to pursue their individual interests. "I make sure we have lots of books in the room about those things," she said. "I set up mini-research topics" on children's interests. "I let them work in small groups to find information" about their own interests. She said that, at present, "one kid is engrossed with bugs". Others, at the moment, were interested in computers. She talked about how excited the children get

when pursuing their own interests. "One group just took off--they were learning so much, they were all bubbly with it." She thought it was important to give children the opportunity for self-directed learning, building on their interests and strengths. This attitude indicates the Humaneness (Respect for Persons), Provisioning and Instruction of the developmental-interaction approach to teaching and learning.

Another important Idea About Children and the Process of Learning in this approach is the belief that the child learns as a whole person--that both his or her thinking and his or her feelings are important. Miss Simmons provided for the child's emotional and social growth as well as his or her intellectual and academic growth. She understood the child development basis for this kind of teaching. She said that the children could express their feelings and needs freely in her classroom, "because of the atmosphere I try to set for kids". She said that was "one of my wishes--that they would be able to talk to me". She felt that she had achieved this. "They can just come and say, 'I have a problem--I want to talk'." Miss Simmons said that she has helped children with problems with friends, or with "something that happened at home". She would sometimes say to a child, "Something is bothering you--do you want to talk about it?"

She was concerned about their relationships with each other. "I try to help them be sensitive to others' feelings," she said. In her Provisioning and Instruction, she provides for good relationships when she plans for them to work together. They are encouraged to help each other in their projects. This is evidence of Humaneness. Miss Simmons spoke of "the sense of community we've been trying to develop. They

feel a part of that community. They feel valued," she said. She was aware of trying to meet children's needs for security and belongingness.

Indeed, all aspects of Humaneness--Respect for Persons, Honesty of Encounters, Warmth--were evident in her teaching. She redirected children who needed help with behavior. She said, "We call the hall the quiet work area." When children are disruptive, "We tell them to take some time there, and when you're ready, come back." She said, "It's not a punishment." Sometimes she would go out and talk with them in the hall.

There were several ways that the children took responsibility in Miss Simmons' classroom. They had a job chart, rotating jobs every two weeks. They were responsible for lunch, snack, and cleaning up the room. And, Miss Simmons says, they were responsible for "the common courtesy things".

The Self Perception of the Teacher was evident in many ways. I asked which of her goals she had achieved this year. She replied, "My relationship with my kids--they come and talk to me." She said that her greatest personal satisfactions in teaching had been "definitely, the excitement of children in what they are learning, and how close I was with them and their families". She spoke of having had one "difficult child. He was testing me. He'd talk back. I was exasperated." But she had finally been able to reach him, and she was pleased with her success. She said, "By now, he is cooperative, he contributes, he is very involved in the class work. He even holds my hand sometimes."

She talked about her feelings as a beginning teacher. "I was so obsessed with covering everything. I worried about the skills. But then, I saw that they did learn them through the things we did." She had seen how children learn the skills in the context of activities. Next year, she planned to do more interdisciplinary science and social studies units.

The characteristic Seeking Professional Growth was expressed by Miss Simmons. Since graduating two years before, she had taken a workshop on writing. She had attended the Independent Schools Association conferences twice. She talked about doing background research on China for the social studies unit on it, earlier in the year. First, she had to expand her own knowledge of China. "I hit the books--to find out--did library research." She had come to the realization that, as a teacher, "you sort of learn as you go along".

One aspect of Seeking Professional Growth is the teacher's reaching out to build support systems. Miss Simmons spoke of her having a good relationship with the parents of her children. There was also a high degree of collegiality among the staff of the school. She worked closely with one teacher. "I share with the other teacher on the floor--we plan together, she said. She also found a great deal of support from the other teachers in the school. "Every morning, we meet in the kitchen and have coffee," she said. "We discuss what we're doing, give each other ideas. The next day, someone will give you a book to help you." She said there were six teachers in the school, and "everyone is able to use the knowledge of everyone else. There's lots of loyalty." There is a staff meeting once a week. At recent staff

meetings, the staff had been planning "how to do staff development."

Miss Simmons said that the principal is very supportive. At recess, he comes out and chats with her. She considers him "informative and helpful". If she has a problem, "I know I can go to him and get advice." She wished he would come to visit her class more often. The researcher and Miss Simmons discussed what differences the school setting made in her teaching. She said that all school policies were helpful and supportive. None interfered with her teaching along developmental-interaction lines.

Miss Simmons talked about how she became interested in doing her teacher preparation in the Interdisciplinary Program for teacher education at the University of Massachusetts. She referred to the elementary school she herself had attended as a child. She said, "It had a lot of the qualities of open education." She remembered doing "hands-on things in science and social studies" as a student. She said that this is "the best way for them to learn at this age". Later, as a college student in the "Introduction to Education" course, she heard about different approaches to teaching. There was a presentation in the class of three kinds of programs for Education majors. Miss Simmons said, "I only applied to Integrated Day" (that is, the Interdisciplinary Program for undergraduates, as explained in Chapter 1).

She recalled the workshop courses in the Interdisciplinary Program. "I valued the experience I got in the classes," she said. "We were learning from projects we did in the classes." The most valuable things for her were the "hands-on methods and learning-by-doing". She said

that the Science and Social Studies/Multi-Arts courses had "the most hands-on methods".

She spoke of the professors' modeling the methods and making the workshop courses "experiential". She said, "We were treated as though we were the elementary students." She explained, "I did things, and I could see as a child's point of view. I learned and thought as children do." The experience of learning-by-doing herself gave her insight. "It helped me understand how kids could get excited in learning that way."

Miss Simmons referred to the two and one-half days a week of prepracticum experience in an elementary classroom that accompanied the methods workshop courses. "It was so valuable. The things we were learning and thinking about, we could turn around and do." As an example, she mentioned the reading methods. "You could see it happening, as you talked and were thinking about it" in the courses. But it was not just observing children. She emphasized, "We were given the opportunity to do things in a classroom with children--what we did and talked about" in the methods courses [emphasis hers]. This stood out as being very significant to her.

Miss Simmons said that she had learned, from the methods workshop courses, "how to go about it, how to organize it and individualize it". Again, she mentioned the professors' modeling of the methods. "I saw the teachers organize it in different ways." She said that she uses the classroom management and organization techniques taught in the courses now, in her teaching--"what I was taught in how to handle things with kids". She said she was aware of the professors' modeling these techniques, although some students were not. She said she now feels

comfortable having kids move around and do hands-on things in her class, and "the structure is there".

She spoke of the curriculum course's "Integrated Day" Day, saying, "I was dying to do that"--have whole days of integrated days in her own classroom. But there were some afternoons given to sports classes, and "I couldn't do science and social studies every day". Also, she had to cover "reading, writing, language, grammar, phonics". She had learned from teaching that the interdisciplinary projects had to be done over time; "It was spread out." She had gotten the impression from the course that she should do many whole integrated days. She said that "some of the other teachers in the school did their own 'Integrated Day' days". She gave as an example the sixth grade's project on the Medieval period. One day a week the students did active projects in which they lived the life of Medieval people, taking the parts of serfs, noblemen, etc. Miss Simmons said they did integrated days "similar to our program" (the Interdisciplinary Program).

In discussing curriculum with her colleagues, Miss Simmons often referred to her experiences in the Interdisciplinary/Integrated Day Program at the University of Massachusetts. She said, "The teachers I teach with now--they listen to me talk about what we did in the Integrated Day Program, and they're jealous."

She mentioned the activities that had built a sense of community among the teacher candidates in the college program. An example she gave was "the whole trip to Petersham--it was great". This was a two-day overnight trip to an Audubon nature reserve. Working together in small groups, the teacher candidates had planned and carried out the

ecology studies and activities, the food planning, purchase and preparation, and the entertainment. The collegiality developed through many shared learning activities, and, fostered by the professors, had carried over into Miss Simmons' cooperative, sharing relationship with her present fellow teachers.

She said she was able to do now the methods she was taught in the workshop courses of the Interdisciplinary Program. She thought it was "helpful to have the basic philosophy in the school" where she now taught. She said that she had learned that the teacher "doesn't have to be a strict disciplinarian, with kids sitting there and listening only". She had found out that learning could be fun--"that's what Integrated Day is conveying to everyone".

When she was asked whether there were any ways she would recommend that the Interdisciplinary Program should change, she said, "No. I liked how it was done." She was then asked what was the most valuable thing for her, about the Interdisciplinary Program. She readily replied, "It was experiential--and the emphasis that learning is fun."

(3) Jane Hilton. Jane Hilton was teaching in the only elementary school in a small town in Maine. The entire school was developmental-interdisciplinary in its program. This was her fourth year of teaching (her second in this school). Her class consisted of 19 children, a multiage group of first and second grades. She had a teacher's aide for half a day.

When the researcher walked into the room at 8:45 a.m., the children were busy at their tables. Miss Hilton explained, "We just had a

meeting. When I told them you were coming, they said, 'She won't know who we are.' Then someone said that we could make name tags." She suggested that the researcher go to each child and say "Hello". As the researcher moved about the room, chatting with them, each child's feelings of self worth was obvious. There was a peaceful self confidence about them. Then a child asked the teacher how everyone would know who the visitor was. That child then made a name tag for the researcher.

After school, the researcher discussed this episode with Miss Hilton--their concern for "She won't know who we are". The researcher said, "I saw that they feel valued as individuals." She replied, "And, in turn, they value someone else's individuality." This attitude characterizes the Humaneness (Respect for Persons) of the developmental-interaction classroom.

This same attitude of Humaneness was seen in Miss Hilton's Instruction and Provisioning for learning. For instance, she involved the children in the arrangement of the classroom space (Provisioning). There was a large meeting area with benches circling a rug (and a shelf of blocks nearby). There were art and science Learning Centers and many mathematics materials on shelves. There were cubbies for the children's books and papers. Their desks and tables were spotted about the room in twos and threes, some alone.

When the researcher asked how the room came to be arranged this way, Miss Hilton said, "We have a meeting." About every two months, they take time for a process of shared decision-making. They decide who will sit together and where to put the desks. "We draw it on a chart and we discuss room arrangement."

The researcher asked why she took so much time to give choices to children in the space arrangement. She replied, "It makes them feel it's their room, not mine. When everyone has ownership . . . they're more involved." She thought the time spent was worthwhile because the process is a good learning experience--they have to cooperate, they have to listen to each other. They learn how to be tactful.

This shows that Miss Hilton was concerned with children's relationships, their social and emotional growth, as well as their academic achievement. This concern for the whole child's development is one of the basic Ideas About Children and the Process of Learning of developmentally-oriented teachers.

Miss Hilton's methods, Instruction, showed the same Humaneness and Ideas About Children. She valued each child's interests, accepted his or her ideas, respected his or her own style of learning, thinking, expressing ideas. The day started with a five-minute "Social Time", then came "Writing Time" (20 to 30 minutes every day). The children wrote in small booklets made by the teacher. She explained, "They can put in personal experiences, stories, words. Some will work in pairs, write a story together." Some were illustrating their stories. Miss Hilton said, "Sometimes a child will draw one day and not write. And they work with their Word Banks."

The Word Bank is a method of teaching beginning reading that uses words chosen by the child. Each child thought of words he or she wanted in his or her Word Bank. The teacher wrote the words on the blackboard; the child copied them on 3 x 5 cards and illustrated them. He or she kept his or her own words in a small card file box, or Word Bank. The

children did various activities with their words: traced them on sandpaper, made up sentences with them, used them in writing stories. "They just love it--they are their own words," said Miss Hilton. They also used the Word Bank like a dictionary (helping each other when someone needed to spell a word for a story they were writing).

Miss Hilton's acceptance of children's different styles of learning was seen in her description of how some learned to read from using their Word Banks. "I've watched a wonderful process," she said. "Making pictures, writing words, then making lists upon lists of their Word Bank words. Then taking one Word Bank word and making a picture of it." She described how this led to writing stories. "Then beginning to categorize them--taking words that have something in common and putting them on a page. Then making a book of them that meant something."

"And then, finally," she said, "beginning to write stories of their Word Bank words. And for some of them, first the stories would go in a row, like a list--down the page, down the next page, down the next page." She added, "And when they really got excited about the story, the pictures disappeared."

Now these first and second graders were writing their own books. "We type their stories," said Miss Hilton. "We have several 'published' books." About 15 of these original, hand-bound books were on the classroom library shelf, for others to read.

After Writing Time, there was a class meeting. The children gathered together in the Meeting Corner. Each one was asked if he or she had anything to "share" with the group--even the visitor. Miss Hilton said, "One rule I give them--that they should listen to everything

someone has to say. Then they can ask questions." One boy went on and on about a family outing. The teacher let him go on until he finished (patience . . . Humaneness). Again, a distinct feeling of self respect was evident, as well as respect for each other.

Sometimes, at Meeting Time, the teacher writes the children's news on a chart. "We find compound words," she said. Some would then read their own talk, written down. "They love to read what they say and write themselves." Miss Hilton integrates the science and social studies into reading and writing. "When we go on a trip," she said, "we write group stories" at Meeting Time. Also, plans for the day are discussed at Meeting Time.

Next, there is Reading and Language Arts, which lasts about an hour each day. Miss Hilton's Instruction focuses on individuals. Asked how she would describe her reading program, she said, "We use both the Language Experience approach and textbooks, and a lot of trade books" (children's literature).

On the day of the observation, several activities were going on simultaneously in Reading Time. Four children were reading from basal readers with the teacher in one corner of the room. Four more were reading from basals with the Aide. At their desks, three children were writing stories. One was organizing pictures for a wildlife display. (He said to the researcher, "I'm doing Science.") One boy was reading an advanced book and writing a report. Three children did workbook pages first, then made crossword puzzles with a Scrabble Game. As their turns came, certain children would go over to the corner to read with the teacher in groups of two to four.

Miss Hilton later said that seven of the more fluent readers "do contracts" daily, except for one who was doing a weekly contract. She said, "These seven work independently." All of the children had gone right to work and appeared to be clear on what they were expected to do. She said, "They're used to being given assignments and working independently."

Asked how she planned for her Instruction, she said, "I plan individually." Therefore, during the reading period, "their activities vary because their abilities vary, and also their interests vary". She relates their reading to their individual interests in science and social studies. She explained, "Being interested in reading and writing is very important."

Miss Hilton was clear on how basal readers can fit into a Language Experience and children's literature program. She said the faculty had a meeting and decided to use a predominantly Language Experience approach. But they had added some use of the basal because "it's an easy measure for the community, who often worry about things that aren't traditional. They want to see levels and texts."

She then described how she supplements the basal reader. "So we are using it in a creative way--with lots of creative writing, our Word Banks, and lots of library books--bins full." She herself brings in children's literature by the "bin" from a Public Library in a nearby town.

Miss Hilton described how she includes children's literature in the reading program: (1) She reads aloud to the class every day; (2) There is a "sustained silent reading" time every day. Everyone chooses a

children's book to read. "They read with a partner or by themselves . . . and the ones who can read, read to the ones who can't yet." Also, the children frequently read the original "books" that they and their friends have written. Miss Hilton said, "We do a lot of poetry. Sometimes at Meetings we say it."

The researcher observed none of the feeling of "high groups" and "low groups" that one sees in traditional classrooms that use basal readers. Miss Hilton replied that she plans for individuals. Four or five children had changed reading groups this year. Also, she gives different assignments to children for the reading period. She said, "There's very little of that--high and low. In fact, one of the boys who works alone is very advanced. . . . They know to go to him for help if they can't read something, or if they need a word." But the teacher does not use labels for groups of children; she individualizes. Therefore, she said, "They do not say things like 'smartest', or 'best', or 'fast group', 'low group', 'high group'. Rather, they know what each other's strengths are." And, she said, "They share those strengths." This is certainly clear evidence that the teacher "builds on strengths", an important Idea About Children and the Process of Learning of developmental-interaction teachers.

Sometimes, if the children are deeply absorbed in their reading and writing activities, Miss Hilton extends the reading period to lunch time. "It's good to have that flexibility," she said. This Provisioning of a daily schedule with large blocks of time is typical of the developmental-interaction approach to teaching and learning. It permits time for individualized learning and interdisciplinary or integrated

curriculum activities. Flexibility of time is an advantage.

After lunch, there was another class meeting to plan the afternoon's activities. Again, there was some shared decision-making, and the children were given choices of activities (Provisioning, Humaneness).

First, there was Math Time. The children went to the shelves for their choice of many manipulative materials. They worked together in twos, threes, some alone. Miss Hilton commented, "Math is noisy. I like it to be noisy because they are discussing things." The children were deeply absorbed in what they were doing.

The role of the teacher in Instruction in the developmental-interaction classroom was evident. Miss Hilton would work with a small group for a while, then she would circulate among the others working at their tables or on the rug. She said, "I go around and check, ask questions, see how they're doing." She worked with individuals as they needed help.

Science, social studies and the arts were taught in integrated projects. These studies took place at the end of the morning and in the afternoon. There was evidence of many such projects in the classroom. There was a rabbit in a cage that the children had built, with a job chart for his feeding and watering. On the walls, there were displays of original drawings of birds and dinosaurs, their paintings, and some weaving they had done. There were written observations of their experiments in growing crystals. Miss Hilton said, "Art is integrated in the curriculum, as are reading and writing." They had also written books on a study of food and good eating habits.

She discussed her Instruction in science: "Our science is observing, discussing, recording. We do a lot of observing outdoors. We also follow children's interests." They had brought in bird nests, stones, shells, flowers, books. She said, "They're becoming very good observers." They also take science and social studies field trips. They were planning a study trip to the ocean and beach with the seventh and eighth grade class. The older and younger children would be partners and find specimens of salt water life together. In social studies, they had studied their town that year. They had taken walking trips and later made maps.

Miss Hilton discussed her methods of Diagnosis and Evaluation. "I get around and observe. I learn something about their learning." She emphasized her questioning, observing, and listening to children. "I've learned how to ask questions--to find out what they know and how they're thinking." This is the "diagnostic evaluation" of the developmentally-oriented teacher.

Regarding her Evaluation, Miss Hilton said she does spend some time correcting papers, "but curriculum isn't just papers". She said, "One of the best ways for me to find out what a child knows is by watching him do something. I will often meet with them individually and do something" [emphasis hers].

Then she jots down her ongoing diagnosis and evaluation of a child's work. And later, "I sit down and write records every day, at the end of the day." This is the typical record-keeping of a developmental-interaction approach to teaching and learning (as distinguished for the grading of the traditional approach). Miss Hilton finds her written

descriptions of children helpful at the three parent conferences a year, held for reporting and Evaluation of children's progress. There is also one general parent's meeting in the school each year. And parents may come in and chat informally with Miss Hilton--she feels that her communication with parents is good.

When asked if there were any materials she considered essential to her teaching, Miss Hilton said, "Objects--things they can see and touch." She explained, "Even if they didn't have books, we could talk and write about things--and then read this way, read their own writing." She said that children learn through doing and activities--from "hands-on things". She valued active involvement as a way of learning and teaching. This is another important Idea About Children and the Process of Learning in the developmental-interaction approach.

Another such idea relates to children helping each other--cooperative learning. She said, "I think that small group learning promotes a different kind of interaction-discussion and sharing." Also, Miss Hilton believed that each child should be allowed to "start at whatever starting point the child is, in learning, and . . . work at their own pace". She tried to find and include children's interests in her curriculum planning. "First of all, you need to get to know the children, from their talking, their writing."

She also plans for giving children choices in learning activities. She says that they are more motivated when they can choose. If a child cannot make a choice at something, she gives him or her more direction.

Miss Hilton was asked whether she thought an informal classroom was suitable for all children. She replied, "I think the environment is

suitable for all children, in that the teacher can set the limits for different children." She says a teacher can ". . . hopefully, teach the child how to set his own limits and understand himself". She had done this with three boys in her class, who had eventually come to choose placing their desks in corners alone, because they were distractable when they wanted to work. Miss Hilton commented, "They are all different personalities and all have different ways of learning, and they all learn. It's wonderfully natural." (She was referring to the developmental-interaction way of learning and teaching.)

The Self Perception of the Teacher was evident in many ways. Miss Hilton's own interests in nature, plants and animals, carried over into her classroom. "And," she said, "my interest in writing--and I love to read, and the children see it." And she said she likes being a learner. "At least every year, I do something I've never done before. So I am familiar with the process all the time." She commented on the process of learning. "I know what it feels like at first--to have a difficulty, the joy of succeeding, the trial-and-error of it. So I'm familiar, as they learn, and I know how they feel." She related this to the beginning reading of the children in her class: "Though I can't remember what it was like to learn to read, I know what learning is like."

Seeing herself as a continual learner is part of the characteristic of Seeking Professional Growth by the Teacher. She had taken summer workshops in art, children's literature, and computers. She had sought out community resources for her social studies and science programs. And she enjoyed a great degree of collegiality among the teachers and

principal in the school. The teachers talked informally every afternoon. "We talk a lot about things we're excited about. We talk about things that we've learned . . . and just how children learn, and how this could be better. And we ask each other."

The principal was very supporting. Miss Hilton said, "The principal has a child-centered approach." She said that the principal came to the classroom nearly every day. "If I have an issue, I'll tell her and she'll come and watch a while. She knows what goes on."

Miss Hilton had talked about the difference that the school setting made in her teaching. Her first job, for two years after graduation from the Interdisciplinary Program at the University of Massachusetts, had been in a traditional school. She said, "I couldn't teach this way" in that school. "I was dissatisfied and I left teaching." For the next two years, she had worked in a ski shop. Then she had found this small school in Maine where the principal understood and wanted the developmental-interaction approach to teaching and learning, and Miss Hilton's two years here had been very successful.

She was asked what advice she would give another teacher who wanted to have a developmental-interaction classroom. She said, "First, I'd tell them not to call it an open classroom--that is so misunderstood. Child-centered is what I call it." Next, she thinks a teacher should be convinced about it and articulate--"know why they are doing it and believe in what they are doing". She said there is a great need today for teachers "to be able to explain it--and to communicate with parents".

Miss Hilton talked about her own early schooling. "I went to traditional schools." She said the methods of the Interdisciplinary

Program "were new to me" in college. "I had always wanted to teach," she said. "As a child, I would watch my teachers and say, 'I would do it like this'." She had gotten interested in the Interdisciplinary Program after taking a general philosophy course as an elective in college. The ideas of John Dewey and other educational philosophers were included in that course. That gave her "what I think about children". She said, "The Integrated Day/Interdisciplinary Program taught me how to apply what I think about children" [emphasis hers].

She recalled the workshop courses in the Interdisciplinary Program. "We worked mostly in small groups, doing hands-on work." This experiential learning had made her "comfortable with materials I can use" with children in "hands-on ways to teach". She commented on how the professors modeled the methods and she appreciated their "allowing discussion time, valuing our opinions". She recalled being given "a wealth of information in the language arts course" and "doing a lot in the arts course". She valued the collegiality in the program, "sharing what we did".

She recalled being given assignments to do things with children in the prepracticum classroom while she took the courses. And she had found her student teaching most valuable. She said the cooperating teacher "spent a lot of time with us, explaining that, as a child, you learn best by doing". And she recalled that the Supervisor of student teaching from the Interdisciplinary Program "was very good and came often to the classroom".

Miss Hilton was asked whether there were any ways she thought the Interdisciplinary Program should change. She said that teachers need

help with "how to compromise . . . if they go into a traditional school". She said that she had started her first job thinking that "this is the way--I'd been taught that way--and I believed in it and still do". She continued, "But in that place, I couldn't teach that way." Her solution, after two years in a traditional school, was to leave teaching for a while. She said, "It's a very difficult thing to know how to compromise and not be consumed by the system. That was difficult."

When discussing what was valuable to her about the methods course, Miss Hilton emphasized the fact that in the workshops she had worked with materials and "used things". She said that this "gave me what I needed, in order to work it out, before I gave it to kids". She valued the experience of learning by doing, with materials, in order to understand how children learn this way. Then, she said, she could teach this way.

(4) Mary Stevens. Mary Stevens had taught six years since her graduation from the University of Massachusetts, where she had done her teacher preparation in the Interdisciplinary Program. All of her teaching experience had been in a school committed to the developmental-interaction approach to teaching and learning. Indeed, she had been a student teacher at this same school before she was hired to teach a multiage fifth and sixth grade there. The school was located in a small town in Massachusetts.

Team teaching was practiced throughout the school. The fifth and sixth grades were called a level, comprised of 54 children. Three classroom teachers, a special education teacher, and an aide formed

the team. The children in this school stayed in this level for two years.

The fifth and sixth grade level occupied an area of the modern school building that was comprised of two large, irregularly-shaped classrooms. There were eills in the rooms with large tables. "A spot for 10 or 12, for reading and math groups," Miss Stevens said. There were designated "areas for doing independent work," she said, but there were no individual desks. Each child had a cubbie in which to keep his or her books and belongings. There was an area between the two classrooms where supplies were kept on open shelves, so that children could get what they needed, independently.

One of the classrooms had small learning centers furnished with aquaria and other specimens of pond life, at the time of the observation of the class. Several small groups of children could work on the different activities about pond life at the same time in these learning centers. There was a large, well-stocked art room nearby, which this class shared with other classes. Each of the two classrooms had a large meeting area. These were each called the "home area" for half of the level--27 children and two teachers. They had their initial morning meeting there. They also came together later in the day for "home" meetings. This Provisioning of space for common use, with tables and work areas or learning centers for all to use as needed, was typical of the developmental-interaction type of teaching and learning.

The team of four teachers and an aide met once a week to plan the curriculum. Although the school did not use textbooks, they did have curriculum guides. These had been developed by the faculty in the past.

From the 54 children in the level, the teachers formed smaller groups according to the students' current needs. Miss Stevens said, "We decided week to week--who would teach what." Miss Stevens would then spend time planning on her own. Asked how much time went into planning, she replied, "Too much--every day after school and in the evenings."

The teachers were flexible in the grouping of children, according to their progress and the differing abilities and needs of individuals at the moment. Miss Stevens said, "The groups were always changing, large and small. We decided together on the changes." This is grouping which focuses on the individual learner, typical of the Provisioning and Instruction of the developmental-interaction approach to teaching and learning. On the day that the class was observed, Miss Stevens was responsible for the work of 21 children in Reading Time, 10 children in Math class, and 23 children during Science time.

Miss Stevens emphasized the fact that there was both flexibility and structure in the grouping and in the way the groups were taught. She said that a developmental-interaction classroom "needs a lot of structure, but it's not the same kind of structure as a traditional classroom". She described an "essential structure" for all activity-based learning. "The child needs to understand what the expectations are-- what the parameters are," she said. She mentioned two areas in which the teacher must give clear guidance to students about their role in an activity: ". . . in terms of behavior; in terms of what their actual work output and input needs to be." She said, "I have no qualms about saying, 'You're going to be working on your project but you need to do A, B, and C before it's finished'." This illustrates Miss Stevens'

Ideas About Children and the Process of Learning, as well as the Instruction methods in the developmental-interaction classroom.

The time schedule established by Miss Stevens and her team of teachers was also typical of the Instruction and Provisioning of the developmental-interaction approach. Large blocks of time were provided, within which a variety of learning activities could take place. Reading and language arts activities, as well as related and integrated projects, were done in a two-hour block of time in the morning. Mathematics classes were just before lunch. The entire afternoon was given to interdisciplinary projects organized around social studies and science themes. Depending on the units they were studying, the children might do science activities for two whole afternoons, then do their social studies projects for the next two afternoons. Or, Miss Stevens said, they might do science investigations every afternoon for a month, around a certain theme. She explained, "It was flexible enough so that, if we needed more time for something, we could shorten anything else. It depended on how things moved."

The school day always began with a "morning meeting" in the two home areas. There was a discussion of any news the children wanted to share. Also, the business items, such as attendance and lunch count, were taken care of. On Fridays, there was a longer morning meeting when the entire level of 54 students and four teachers came together to plan and share ideas.

Then, an exceptionally large block of time was given to reading and related activities--from two to three hours every morning. Miss Stevens named five different types of study that might take place during this

time: reading in groups, independent silent reading, whole language lessons for small groups, integrated curriculum projects associated with reading, and individual creative writing.

The writing program included three approaches to writing, for all the students: (1) Each one wrote in his or her own journal frequently. (2) They did "process writing" every day. This is the method in which children choose their own topics for writing stories, then gave peer conferences for developing and revising their work. There were "sharing" sessions when they read finished stories to the class. They published their own books and read each other's writing as part of the reading program. And, (3) Miss Stevens said there were writing activities developed around the children's novels they were reading.

The material for teaching reading was children's literature, especially the children's novels suitable for this age child. (Text-books, or basal readers, were not used.) Teaching reading with children's literature is a developmental-interaction method of teaching. There was a structure to teaching reading with novels, which Miss Stevens explained. "The reading groups ranged from four or five children to ten or twelve, all reading the same book." The children would read both individually and aloud, at times. Miss Stevens said, "I build units around a particular novel." Writing and other language arts activities were "tied into the novel they were reading". Also, Miss Stevens had individual conferences with the students about their reading and language arts work. These are the Instruction methods of the developmental-interaction approach.

Sometimes, major units were planned which integrated social studies and the arts with the reading program. The unit on the Middle Ages was an example of this kind of interdisciplinary Instruction and Provisioning. During the reading period, the students read two series of children's novels about the Middle Ages. These books gave them a real-life picture of the people and the times. These novels also raised issues that inspired lively discussions and further research by the students in the reading period. In the art classes taught by a special teacher, the children made Medieval shields and family crests and coats of arms. One of the classroom teachers in the team taught the class Medieval songs and dances in the afternoons.

Miss Stevens described the culminating event for this unit. "We had a Medieval feast and each child ended up playing a part--they were either a peasant or whatever." The children had made their own costumes. One of the classrooms became a Medieval great hall. Miss Stevens said, "From their research, they know what a great hall looked like; all the shields they had made adorned the walls." The students planned the menu for the feast and went to the store to buy the food.

Miss Stevens told about the children's background reading, planning and shared decision-making for the feast. "We had done a lot of research about what a feast was like--all the kinds of foods that they served. The kids did the cooking." She mentioned two particularly Medieval types of food that they had figured out how to provide: "We made an ale type of thing," she said. "We served the food on what they called trenchers--that's just slabs of hardened bread." The children decided that they had to have an authentic feast, "so we made this bread,"

Miss Stevens said, "and everyone was eating off the trenchers and eating with their hands." The students served, and they were also the entertainers. Miss Stevens said, "We had different groups perform as they would at a Medieval feast. It was wonderful."

Miss Stevens described how the team of teachers would plan an interdisciplinary unit around a social studies, reading, or science theme. "We would choose a topic for a unit," she said, "then we'd find visual material, slide shows and movies." After the children saw these, the teachers would have meetings with the children to do shared decision-making about their investigation of the topic. Miss Stevens said there would be "lots of children doing research" and many hands-on activities. Together, the teachers and children evolved a culminating activity, toward which all planned and worked. The children could work both individually and in small groups on their investigations and projects. When they studied Rome, for example, Miss Stevens said, "We had a Roman parade at the end, and we put on a play." Miss Stevens explained, "It was not just reading about something and answering questions about it. They would need to read about it in order to develop a script for the play they were doing." This is the "learning by doing" of the developmental-interaction type of teaching and learning.

Miss Stevens said that the teachers gave attention to the skills within the context of the need for skills in the activities the children did. "Whenever possible, we would look to a project to give them the skills," she said, "rather than just the rote book learning." She pointed out that there was no textbook for social studies or science, as

there was none for reading. However, a great deal of library and literature source material was read by the children.

After the long block of time for reading activities, on the day of the observation of the class, Miss Stevens taught a mathematics class. A group of 10 children gathered around a large table near a blackboard. Miss Stevens discussed decimals, using the blackboard and asking questions. Then she gave them some sheets to work on and she moved from child to child, to help individuals. She later said that she uses manipulative materials as much as possible in mathematics. She also said that there are times when direct teaching, such as found in traditional teaching, is appropriate to teach a particular skill. But she thought that this should always be individualized, or taught to a small group that needs that skill at that time.

After lunch, the afternoon block of time was given to either science or social studies. There were also special teachers to whom the children went at certain times during the week--art, music, and physical education. The classroom time, however, was organized in long stretches of time when various aspects of a project could be undertaken by small groups of children simultaneously.

Miss Stevens said, "Science was also project-oriented and integrated." There were "a lot of hands-on kinds of things . . . units, pond life, batteries and bulbs." She said, "It was wonderful--we'd go out to a pond, do a lot of observation, a lot of note-taking." Then individual children could decide to do "a research project on what particular creature they chose. That was fun." On the day that the classroom was observed, the afternoon was given to their pond study. Small

groups of children were examining flora and fauna brought back from their pond trip. On the science table, there were activity cards written by the teachers, guiding the children's investigations. Some children were doing research and taking notes from books about pond life. Miss Stevens had shown the class a film about ponds before the individuals and small groups went off to work on their particular aspect of the pond study.

A major science project that year had been a trip to a "Nature's Classroom" on Cape Cod. The children had done all the fund raising, all year long. They had done can and bottle collections, a bowl-a-thon, newspaper drives, a silent auction for the entire school, and a spaghetti supper (the children did the cooking). The week at the nature center had included classes morning and afternoon, and "lots of community-building activities," Miss Stevens said.

Miss Stevens discussed her own role during the times when the children worked in small groups or individually, on the projects. "There might be a group of children who were at a particular stage in a project," she said. "I might . . . help them figure out how to do the next step." Also, she said that some children are less independent than others and might need more guidance. She would be sure to check on those. "I tended to move from group to group, and watch and see," she said. This observation of children at work is an important Diagnosis method of the developmental-interaction approach to teaching. Miss Stevens added, "There were some kids who could work very well on their own, and that was fine."

There were many manipulative materials of all kinds in the school. Miss Stevens discussed the value of these materials, such as Cuisenaire rods in mathematics teaching. She said, "I have to be adaptive for whatever group was working with the material." She gave her reasons: "Because the kids are at different levels . . . both in their intellectual and their personality development." She said, "I don't think there's any one thing that works for everybody."

Miss Stevens provided a variety of materials for the children's learning. They brought in natural materials (such as in the pond study). She also provided many "junk" materials--scraps of cloth, boxes, wood--as well as art materials. She said that "there were things that children would be making--models of things" in the projects. "The more materials you have around," she said, "the more you can do."

She talked about the value of making models of things, such as Roman villas in the interdisciplinary social studies project, or making a puppet and putting on a puppet show. She said, "Not everybody can write well. Not everybody can speak well. But there are some children who are just so creative in that kind of sense--constructing something." She continued, "You need a real understanding of the material in order to create something." Giving a child the opportunity to build or create something is an important kind of learning, she thought. "It pulls together so many different skills and so many pieces of knowledge," she said. "It's another way for children to show that they're understanding something." The making of models has not been emphasized in most American schools, she thought.

Miss Stevens had made some materials herself for the class, such as games for mathematics. She also developed slide-tape shows for the social studies projects. One of the series of children's novels that they read was set in Wales. She said, "I was fascinated with Celtic history, so I went to Wales and put together a slide show of the places in our books." Several teachers in the school had travelled to the places the children studied and had brought back slides and artifacts from such places as Greece and India.

The providing of a great variety of hands-on materials and interesting resources in books is characteristic of the Provisioning of the developmental-interaction type of teacher. When asked whether there was any one material that she would consider essential to her teaching, Miss Stevens said, "I can't imagine teaching reading without using a novel." She also thought that having a variety of materials was important. In fact, she said, "The variety is essential, in the types of books the children can read."

Miss Stevens discussed her way of Diagnosis and Evaluation of children's progress. She said that this is not harder than in a traditional classroom. "It takes other skills," she said. "In a traditional classroom, you might be governed by a test guide." She thought, "That's definitely easier, but not necessarily the best way." She explained her methods of diagnosing and evaluation in a developmental-interaction classroom. "You have to be looking for different things," she said. She used a variety of methods to diagnose and evaluate: (1) Tests; (2) Discussion with children; (3) Students' daily written work; (4) A folder for each child, with collected materials; and (5) Her own

written records, comments and checklists. At the parent conferences, Miss Stevens would go over these materials. She also provided these records with each child in a conference.

Miss Stevens' Ideas About Children and the Process of Learning were evident in many ways. Much of her Instruction and project work was done in small, cooperative learning groups, either teacher-formed or formed spontaneously by the children. "The advantage," she said, "is that they began to learn from each other--to use each other as resources" in small group work. Such class organization, she said, also "gives a teacher more of a chance to work with individual students". Another advantage is that "children learn how to deal with other people," she thought. Sometimes, she set up groups "to have certain kids working together". She thought that most of her children were self-reliant, and would go on working if the teacher stepped out of the room. "But not everybody," she said.

Miss Stevens' Ideas About Children and the Process of Learning were seen in her attitude toward children's needs and feelings. She was concerned about the whole child, both intellectual development and emotional-social development (typical of the developmental-interaction teacher). She said, "We always encouraged children to speak about their feelings." This helped the teacher "to get to know the children," and this often "brought up other issues that needed to be dealt with". She felt that sensitive issues, such as death, fears, birth and sex, definitely had a place in the classroom. Miss Stevens said that this was one of the great values of using children's novels as reading material in the classroom, rather than the basal textbooks of the traditional

school. The children's novels brought up issues that children were concerned with in their own lives. She commented, "We had some very moving discussions." She remembered a girl who had been adopted--a "sensitive issue" that came up "in a book we were reading". They had a long discussion about "What is a real parent?" For a child, ". . . who raised him and loved him?" After a while, one child said, "I feel like I'm on the Phil Donahue Show."

Miss Stevens talked about her building on children's interests and giving them choices. "I think it's important," she said, but she pointed out that there has to be a balance with required subjects. Some things, she said, "are necessary--things related to grammar and math". She continued, "Sometimes, I even say that to kids. . . . I'm sorry, but we have to do this." She says that children can understand this, "but sometimes, I get 'This is boring'". She tried to "cover spelling and grammar as much as possible through the novel work, sometimes in lessons".

Miss Stevens thought that providing choices for children was important for several reasons. "The more you can give kids choices," she said, "the more projects that are built into certain units . . . the more motivated kids are." The great value of this is that "when you're motivated, you want to learn". She also observed that children's ability to make choices is "a skill that needs to be developed", with the teacher's guidance over time. If a child has some difficulty deciding, the teacher could help by "breaking it down into small steps". Miss Stevens said that a child "might need help on organization". The personalities of children might influence their ability to share in decisions and make choices. Things might have to be "offered in

different ways to different people". All these insights into choices for children and shared decision-making indicate Miss Stevens' Ideas About Children and the Process of Learning, which are those of a developmental-interaction approach to teaching and learning.

Miss Stevens showed the characteristic Self Perception when she talked about her goals in teaching and the things that most satisfied her. "To me, the biggest reward was seeing a child get excited about what they were learning." Also, she felt rewarded from "seeing somebody just feel good about who they are". She said she appraised her work by "looking at the individual students". She said, "I tended to look a lot at behavior and growth and maturity." She cared about "children learning how to deal with each other". She often compared "where they started at the beginning of the year and how they developed". She tried to "see how we had an influence on that". She also cared a great deal about children's enjoying school. She said, "That's something I think you take on past school--enjoying learning." She thought that her knowledge of curriculum content had "built as I taught". She thought that "the qualities of a good teacher are innate. . . . They are more important than content knowledge".

Miss Stevens gave evidence of being the kind of teacher who is always Seeking Professional Growth. She often took courses during the school year. These were "Continuing Education courses on a wide variety of subjects". She travelled in the summers. One of her summer trips took her to Europe to visit schools. She had also done science field research expeditions in the summer. She said she was "thinking of a graduate program in school psychology in the future". She is interested

in investigating "ways of dealing with children's problems through curriculum".

One aspect of Seeking Professional Growth is the teacher's building support system. Miss Stevens said that the collegiality and support of her fellow team teachers had meant a great deal to her. Also, she had found the principal very supportive. "He was pretty trusting of what we did," she said. There were no school policies that conflicted with her teaching.

She also built a support system among the parents. She had parent volunteers who "helped with project things, the school play, fund-raising" for the science trip to Cape Cod. There were three parent conferences a year. She said, "Most parents accepted the philosophy of the school, some did not." But as school boards changed from time to time, she said, "We did a lot of justifying to School Committees (i.e., School Boards)." She said the principal was good at explaining that "the basics can be done--we teach them in a different way".

Miss Stevens talked about the differences in the developmental-interaction approach to teaching and the traditional approach. She said that the traditional teacher's attitude is that there are "set things to be taught," perhaps saying, "This is the way we teach it, and it doesn't matter about individuals." There is "not enough leeway" in this attitude, says Miss Stevens. By contrast, she sees the developmental-interaction teacher as looking at "individuals and ways to teach individuals". There is "flexibility and variety" in the methods used by teachers with a developmental-interaction orientation.

Miss Stevens was asked what advice she would give to a teacher who wanted to move toward a more developmental-interaction classroom. She said that, if the teacher had worked in a traditional way, they could "start with a subject area". They might try "different kinds of materials, different kinds of styles, different ways of presenting materials to a child". After doing that, the teacher could "eventually move into starting with a topic" and integrating several curriculum areas around a theme--"developing a unit". She said, however, "many people would see taking a theme and developing it as too much--it's a different method" from the traditional approach to teaching separate subjects.

Miss Stevens was asked how she would characterize the developmental-interaction school in which she taught. "I think it is a very creative environment," she replied. "I think of it as more process oriented." She said that "developmental" was a good description of the school. "There is concern, a real caring for children" in the school.

Miss Stevens talked about her teacher preparation in the Interdisciplinary Program for teacher education at the University of Massachusetts. It was a different approach to elementary education from that of her own early schooling. She said that, as a child, "I had a successful experience in traditional elementary schools." Why, then, did she choose a different approach, the developmental-interaction way, for her study of teaching?

Miss Stevens replied that her interest in developmental approaches to teaching had first been sparked when in college, while doing volunteer work in a day care center. She had found the Interdisciplinary Program for teacher education through a friend, who was enrolled in the

program at the time. "I loved the program from the moment I started," she said.

Once in the workshop courses of the Interdisciplinary Program, Miss Stevens had found that she herself "learned best by doing". She realized, "In order to teach someone, you need to go through the process yourself as a learner." She said that a teacher needs to experience learning with hands-on materials "to be able to see the parts that are difficult for you. It just gives you more insight into how children learn". Indeed, she said that the most important ways that the methods courses were useful to her were (1) the professors' modeling of the methods, and (2) her own active experiencing of being a learner with these methods. She said that the modeling by professors meant to her: "This is what should be happening in a classroom."

Miss Stevens talked about her experience in the workshop courses of the Interdisciplinary Program at the University of Massachusetts. "In science, we were doing hands-on discovery methods." She praised the reading and language arts course, which she said "was wonderful". She had used many things she learned in that course. She said, "I wish we could have done more with actual novels . . . to be able to develop group projects around novels." She added, "But there wasn't enough time." She thought that the curriculum course "tied things together nicely". She said that she had learned the thematic approach and integrated curriculum planning when she had planned and carried out the "Integrated Day" day in the curriculum course.

However, there was one problem after that course. She said, "I think you do get that feeling, that we should be doing 'Integrated Day'

Day all the time." She said this happens to the student teachers because "everything is geared toward this great day". Therefore, she said, "When I left INTEP [the Interdisciplinary Program], I felt I should integrate all the time." She had found out on the job, however, that "math doesn't integrate with the Middle Ages, and that's O.K. It took me a while to not feel guilty." She said that she had expected, as a new teacher, "to be individualizing everything and using 15 different methods. I think I felt guilty at the beginning." Then she had realized that "there's more of a balance when you come to real-life teaching".

Miss Stevens thought that this could be remedied for future students in the Interdisciplinary Program. She said, "Somehow, the Program should say there's a happy medium--that it's O.K. not to integrate all the time."

Miss Stevens remarked that the workshop courses "tied in nicely with the prepracticum". She had done the learning activities in the workshops, and "then you got to see how it worked out in reality, as you had to try it out" in the prepracticum classroom, "with real children". Miss Stevens said that both her prepracticum and her student teaching experiences were in classrooms that had a developmental-interaction approach to teaching and learning. She said, "That made a big difference." She said that it's "when you are actually in the classroom" that you learn the most. Her cooperating teacher had "pulled together the theory and the real life." She said that in her student teaching, her cooperating teacher was "trusting of my abilities. He gave me responsibilities for my own groups from day one. He was there if I needed help."

Miss Stevens talked about the collegiality that she had found in the Interdisciplinary Program at the University of Massachusetts. She said that the "interaction with other students was a real plus in the program". She spoke of how the professors promoted this: "There was a lot of energy that went into building that community group--doing a lot of projects together in small groups." She said that this "modeled how to teach". The collegiality that she had experienced in the Interdisciplinary Program for teacher education had "helped me later in a team teacher situation", in her present teaching job.

Miss Stevens said that when she was new on the job, she had thought that she should have learned more about classroom management as an undergraduate in the Interdisciplinary Program. But she had come to see that there are two things that have to be learned on the job: content and classroom management. She said you could have theories, but "until you deal with the kids, it doesn't quite make sense". Take discipline, for instance. "You can have a whole range of how it can be done, but you have to find the ways that feel most right for you." She spoke of finding "your particular style of teaching". And she thinks that "you can only do that with actual experience". Also, Miss Stevens said that a lot of time management things have to be on-the-job training. She gave us examples: ". . . Correcting eight million papers . . . at the same time you're having to start a new unit and having to write report cards and having parent conferences." Again, she spoke of having to find a balance, "once you come to real-life teaching".

Miss Stevens commented on her first year of teaching. She was in "a very accepting situation"--the same school where she had completed her

student teaching and one that approved of developmental-interaction methods. Yet, she said that "the first year was a struggle". She spoke of "sleepless nights and long hours". She had "the feeling I had to develop everything". It took her some time to realize that she "could pull material from other sources". However, the "advice of the teammates" helped her through that year.

Miss Stevens thought that a teacher has to learn curriculum content on the job. At first, as a new teacher, she thought that the Interdisciplinary Program had been lacking--she "needed more information--content". But she said that, after six years of teaching, "Now, looking back, there would be too much content to learn and you wouldn't remember it." She now thinks it is better to "get involved in content" when you are actually teaching children. Again, she said, "Now, looking back, I'm glad it [the Interdisciplinary Program] had the focus it did--more process than content oriented."

Also, when Miss Stevens had first started teaching, she had thought that "there were some things that were idealistic" about the "things we had done" in the Interdisciplinary Program at the University of Massachusetts. She said, "I thought the actual realities in a classroom were different." However, her perception changed over time. "As I got into teaching," she said, "I could put those things into action." Speaking of the things that seemed "idealistic" to a new teacher, she said, "But obviously, over time, I used a lot of the ideas; so yes, they were workable."

Miss Stevens had come to see, as an experienced teacher, that "the teacher education program had made more of an impact than I realized.

I was taught process--it made sense." She said, "I think all the things we learned about choices, individualizing learning--all these things that make up good teaching"--this process was the right focus for a teacher education program, she said. "It took time to appreciate the Program."

In summary, Miss Stevens said that there were three things about the Interdisciplinary Program that had proven to be the most valuable to her over her six years of teaching: "The community building, the hands-on and process learning, and the experiences of learning this way--to understand how to teach this way."

(5) Virginia VanDorn. Virginia VanDorn had taught in the public schools of a large city in Maine for nine years. For the first seven years, she taught in a traditional school. Then she had been asked to start the first "school of choice" (or optional nontraditional school) in the city. A group of parents had gone to the Board of Education and requested that they set up a more developmental-interaction and interdisciplinary type of school for their children. The result was a "school-within-a-school" comprised of two developmental-interaction classrooms located in the middle of a large traditional school. Parents from all over the school system were given the choice of entering their children in this new program. The demand was so great that, in the second year, it was expanded to four classes.

The principal of the large traditional school in which this school-within-a-school was located had been Miss VanDorn's principal in another traditional school in the same school system. He had hired her right out of college, when she had just completed the Interdisciplinary/Integrated Day Program at the University of Massachusetts. In her

former school, she had had to adapt to the demands of a traditional school system. Yet, seven years later, when the School Board was faced with a group of demanding parents, this same principal responded. He said to the researcher when she visited, "I saw right away that Virginia had something different." So when the parents and the School Board wanted classrooms with a developmental-interaction approach, he had told them, "There's someone right here in our school system who knows how to do that." He had offered to have the school-within-a-school located in his present school. He gave his full support to the teachers in the new program, which was different from the traditional school within which it operated. It was in the Spring of the second year of the school-within-a-school that Miss VanDorn's class was observed for this study. It was a third grade class of 20 children. She had no teacher aide.

On stepping into this classroom, one was immediately aware that this is a place where lively, exciting learning is going on. The teacher's Provisioning for learning was evident everywhere. Beyond the meeting area to the right, there was a science learning center crowded with materials for exploring and experimenting. The shelves held pine cones, tree bark and seeds, lobster claws, shells and a book on shells, bird nests, and animal bones. Several magnifying glasses were nearby, for closer examination. Another shelf held children's individual rock collections, with their handwritten descriptions of their rocks. Beside the rock books, there was a stack of mimeographed worksheets, entitled "Geological Homework". The worksheet began with "Find two rocks . . ." and it told how to compare them and record the findings. This indicated Instruction methods that allowed for self-directed learning, typical of

the developmental-interaction approach to teaching and learning. Above the rock shelf, there was a poster, entitled "What Can You Do With Rocks?" The suggested activities were: Make a paperweight, a sculpture, a mosaic, bookends, jewelry.

Another shelf in the science corner held machine parts, batteries, wires, and small light bulbs. There was a science experiment on a nearby table. It was a filter to clean water. Next to it were some mimeographed sheets on which the children could record a report of their experiment. These "Science Sheets" had spaces to write in, entitled "Materials . . . Methods . . . Hypothesis . . . Outcome . . ." On the bulletin board above, there were similar science sheets that the children had completed on an experiment with levers and fulcrums. This type of individual inquiry and learning by doing is typical of the Instruction methods of the developmental-interaction teacher.

Moving along the window wall, the observer passed a mathematics area with shelves full of manipulative materials and games. The corner opposite the science corner was lined with shelves of blocks. On the floor, there was an elaborate three-foot high inclined race track built of blocks. There were several little race cars and stop watches nearby.

As the observer moved on down the wall opposite the meeting area, she came to a learning center for reading and writing. The area was defined by shelves with lots of library books and children's novels on many topics. There was a large couch covered with a green print slip-cover and piled high with pillows. A round table for writing was on the other side of the learning center. On a bulletin board near the table, there was a sign saying, "Write a Modern Fable". There were

newspaper clippings of news on which a fable could be based. Other posters on the bulletin board gave additional ideas for ways to do "book reports" after reading fables: "Write a want-ad for a fable character; make a puppet of a fable character; do a fable survey; make a drawing of a fable character." The top shelf of the library corner had paperback books of the current reading assignment--fables--at least thirty different titles, with five or six copies of each one.

Near the reading and writing center, there was a bulletin board with social studies interests on it. At that time, the newspapers and television were full of the primaries for a presidential election. The children had made posters listing the major issues espoused by the chief candidates. Stacks of magazines and newspapers were nearby (brought in by the parents) as source materials for this integrated project. This evidenced social studies Instruction related to the real world of the students, another concern of the developmental-interaction teaching approach.

At the end of the room, near the door, there were cubbies for children's belongings. Opposite these, there was a well-stocked art learning center. It held a three-sided easle for painting, many crafts materials, and a workbench with wood, tools, measuring devices. There were several constructions by children on the shelves. There was an upright piano at the end of the art center, facing the meeting area. At various places in the middle of the room, there were four large round tables where children could work. Their books and papers were kept in the individual cubbies; there were no desks. On one shelf, there were file boxes in which children could put their finished work in writing, mathematics,

their science sheets, etc. This space arrangement of the classroom, with its inviting learning centers and shared spaces and tables, is characteristic of the Provisioning for Learning identified as typical of the developmental-interaction type of teacher by Bussis and Chittenden (1970). The room arrangement and projects evident in the learning centers also indicate the developmentally-oriented teacher's methods of Instruction: active, hands-on, individualized and interdisciplinary learning projects.

Another aspect of Provisioning is the way the teacher organizes the time schedule. In the developmental-interaction classroom, the day is usually divided into large blocks of time, in which individuals and small groups pursue their integrated curriculum projects. Miss VanDorn began the day with a class meeting lasting 20 minutes. The children told any news they had and discussed plans for the day. During this time, Miss VanDorn returned to each child his or her own large 9 x 14 mimeographed sheet with the class's weekly schedule on it. At the bottom of the sheet, she had written comments on the previous day's work, which each child had recorded on his or her own schedule sheet. The plan was that each child would now begin to record this new day's work on the same sheet, and return it to the teacher at the end of the day, before going home.

Miss VanDorn later told the researcher how she had evolved this printed weekly time schedule as a record of each child's individual work, as well as a daily feedback sheet. She had taught these same children the year before, in the first year of the school-within-a-school, when they had been in second grade. Since they had come to this new program

by parental choice, they had come from many traditionally structured first grades. Miss VanDorn said, "Last year, as second graders, they couldn't take too much unstructured time." She had started them off with a few learning centers and lots of guidance in how to use them. She also saw that this need for structure was related to the developmental stage of seven- and eight-year-olds. This year, in third grade, as Miss VanDorn had given them more choices and longer-term assignments, she saw a change in the children. She said, "They came to me and said, 'We want to talk.'" They told her, "Some of us like to do math things in the morning and some want to do reading now and math later." So Miss VanDorn said, "O.K., let's sit down and talk about it." They had a class meeting, at which they discussed "the most important things they wanted to see done this year". Miss VanDorn wrote down the children's ideas. This listening to children's ideas is typical of the Humaneness (Respect for Persons, Warmth, Honesty of Encounters) identified by Bussis and Chittenden (1970) as characteristics of teachers who have developmental-interaction ways of teaching.

Miss VanDorn said, "I thought about it for three days; and on the fourth day, I made a weekly schedule." She described the schedule: "It had, sort of, my time and their time." There was a basic framework of study times in the schedule. The "teacher's time" consisted of the morning meeting, two daily 45-minute periods for "Literary Study" and "Math Study", and a final 10-minute period each day when Miss VanDorn read aloud to the class. There were set times in the schedule for the special teachers of art, music, gym, and French, as well as lunch and recess. On Friday afternoons, there were class meetings for the

sharing of children's reports on their science and social studies projects.

This left several large blocks of time each day for the children's own "study times". These were called "Choice Times" on the schedule. "If a child wants to practice his multiplication tables in the morning, he can," said Miss VanDorn. The blocks of time for children's choice of studies were up to 40 minutes long each. They add up to from one and one-half to two and one-half hours a day. Each child fills in each choice time every day, on his or her schedule form. He or she turns in this record of his or her work before going home. Miss VanDorn then reviews the schedule report and writes comments at the bottom for each day.

There was another section at the bottom of the weekly schedule form, where small squares could be checked off by each child. He or she could analyze what went on in the interdisciplinary projects that day. The child would check the appropriate squares: writing, science, silent reading, social studies, spelling, mathematics, etc. Miss VanDorn said, "I put the boxes at the bottom to help them explain to other kids who don't understand what we're doing." Children in the other third grades, with a traditional approach to teaching, had said, "You don't do science--you're not on page 162 in the science book." Miss VanDorn said that on the first day the children filled in their schedules. She heard a child say, "Wait a minute--I just wrote down my science experiment, and I did writing, I did reading, when I did science." There was lots of excitement when the children analyzed the different types of skills and studies that went into their interdisciplinary learning projects.

Miss VanDorn said that this daily/weekly record keeping by the children has been a help to her in her own record keeping. "The children fill in what they do," she said. "It gives me feedback. It jolts my memory . . ." of what she saw in the class that day. "Then I jot it down in my records."

On the day of the observation of the class, the following activities were going on during one of the Choice Times. A girl was reading on the couch, another was working at the word processor. Three boys were at a table working together on their "fable sheets". (The teacher explained later that this was the final week for turning their sheets of questions on fables they had read, so many of them had chosen this work. Often they do art projects during Choice Times.) Two girls had crawled under the piano stool to read together. Two boys at a table were writing an original fable together.

During this Choice Time, Miss VanDorn was having individual conferences in a corner of the room. A child went over to her and said, "I've finished my story sheets. Now I have to do a fable." The teacher replied, "Oh, what a relief!" After a few people came to her for conferences, Miss VanDorn got up and went to the different groups of children working at the tables. She checked on their progress, asked questions, commented. Several kinds of Instruction were going on--direct Instruction to individuals, indirect Instruction in group activities, cooperative learning in small groups.

The children talked softly to each other as they worked. They moved about spontaneously to get materials they needed. There was a busy hum about the room. There was sharing of ideas and appreciating

of each other's writing. Children were helping each other. They were deeply absorbed in their work, and there was an obvious sense of self worth. The children spontaneously included the researcher as a friend. Several came over and asked how to spell a word for the story they were writing. One came and read her story to the researcher. There was a warm, accepting atmosphere for learning.

These third graders were taking a great deal of responsibility for their own learning. They were constantly making choices and deciding on their individual daily plans for getting their long-term learning projects done. Later, when this was mentioned to Miss VanDorn in an interview, she referred to one incident, early in the year. "It taught me a great lesson," she said, about children's capacity to do shared decision making and to take real responsibility for their own planning and work. She said, "I had a chance to see if kids, working on problem solving for an hour, could find their own solutions." She added, "It's made life easier for the rest of the year."

She told about the incident. The children had brought in a game called "Marble Works". When they dropped marbles down a chute, they used stop watches to time them and kept records of their scores. One day a girl came to Miss VanDorn and said, "The boys always get a chance to play with that and the girls never do."

Miss VanDorn had replied, "Let's talk." She had a class meeting to discuss it. "We sat down and worked for an hour on the pros and cons, brainstorming," she said. The children themselves came to the idea that they needed rules about the game, such as "how many could be there at one time". They decided to pick out three good ideas and make

them rules, and then they would try them for a week, to see what worked.

Miss VanDorn said, "I thought, I can't believe I'm spending all this time on 'Marble Works', and just watching them, and sitting back and letting them talk.'" But, she said, "They finally came to their own solution."

Then she saw an important outcome of the experience. "Next thing I know, everything in the class was run that way. They applied this to other things." She would hear them say, "You know how it is with 'Marble Works'." She said that, "Now, everyone voices what they see as a problem and the solutions. They feel empowered. They have learned to make their own arrangements." And she commented, "They all sound like lawyers now."

Miss VanDorn thought that shared decision making was more crucial for children in a developmental-interaction classroom. She contrasted this with the traditional approach. "In a traditional classroom, you can separate children who don't get along," she said. "But here, they have to work together and live together." Of her interdisciplinary classroom, she said, "Here, the groups ebb and flow. They have to work with everybody."

On the morning the class was observed, the Choice Time was followed by "Math Study Time". Miss VanDorn later explained that in Choice Times the children can choose who they want to work with and where they want to sit, in addition to what work they will do. But in Math Time, they worked in teams of three, designated by the teacher. And they had assigned seats at tables. There is more direct Instruction in

mathematics. Miss VanDorn prepares individualized assignments for each team of children, given to them in large brown envelopes or "packets".

The teacher gave directions at the beginning of Math Study Time. Several teams were to do "silent practice" of the multiplication tables they were currently studying. Others drilled each other with flash cards. Miss VanDorn moved from group to group, doing direct Instruction. Later, there was a regular Friday afternoon timed mathematics test. So the mathematics Instruction was a combination of direct teaching, individual study, and cooperative learning in small groups.

Miss VanDorn explained her reading and language arts Instruction and Provisioning. She said, "Reading is taught in the context of spoken and written language." The children read their own and each other's original writing. They had bound these stories into "published books" and put them on the classroom library shelf. They also read children's literature, which they get in a monthly trip to the school library. These books filled the shelves in the Reading and Writing Learning Center in the classroom. Also, each month there is a special focus for their reading. At the time of the observation of the classroom, the focus was myths and fables. This reading project tied in with an interdisciplinary multi-arts activity--making a movie with another class for videotaping.

Miss VanDorn said she does not use the standard spelling text of the school. She explained, "They write wonderful stories, with wonderful words in them. So we just concentrate on the words in their stories" for spelling. Each child makes his or her own dictionary of the words he or she uses. This respect for persons, seen in the use of the child's

own vocabulary for spelling and his or her own writing of stories for reading material, was cited by Bussis and Chittenden (1970) as evidence of the Humaneness of the developmental-interaction methods of Instruction. Miss VanDorn had another source for spelling words, also. At the beginning of a science or social studies or reading project (such as the Greek myth study), Miss VanDorn would put up a chart of words on the bulletin board, saying, "Everyone is going to use these words a lot."

Describing her reading program, Miss VanDorn said, "I threw out the basal reader--we just use library books." She continued, "I figured out a way for them to choose their own books to read and enjoy them, and then report back to me." This way, she said, "I'll know what they're doing." For each month's reading project, Miss VanDorn designed a report-back sheet on which each child can keep his or her own record. The current "Fables Requirements" sheet was an example. It says that, over time, the child has to: (1) read five fables and do a "Fable Sheet" report on each; (2) write two original "modern fables"; and (3) do an illustration of a fable that he or she has read. The child could fill in the sheet as he or she finished each part of the long-term project. Also, each child took his or her Fables Requirements sheet to the individual conferences with the teacher and discussed his or her progress with her. Miss VanDorn said, "These children take lots of responsibility for their own planning." They carried out the assignment in the many Choice Times in the weekly schedule (also recording on that form when they had chosen to work on their reading project for the month). Also, the children keep lists of the other books they read.

They use the reading workbook as a practice book for skills. Another important phase of the reading program is the teacher's reading aloud to the class at the end of every day.

Science projects were also done by the children in their Choice Times. She said, "I like using scientific processes with children, doing it through an inquiry approach" [emphasis hers]. She said that her science program was "hands-on, having them be responsible for their scientific learning". She placed materials for specific science experiments on tables in the Science Learning Center. Then, at class meetings, she discussed and introduced the experiments to children. After that, they could work alone or with partners on the experiments, whenever they planned this in their Choice Times. Besides each experiment in the Science Corner, there were task cards with questions and directions, as well as sheets on which to write a summary of each experiment when it is completed (indirect Instruction). Miss VanDorn discussed each child's work in science with him or her at the individual conferences (direct Instruction). Every Friday afternoon, there is a Sharing Time, when children report to the class on their current work in science and social studies projects. Miss VanDorn called this a report-back format. The Provisioning for science studies is a profusion of hands-on materials. The school textbook is used as one of the many science reference books in the classroom.

The social studies textbook is also used as a reference book, among other references. Miss VanDorn described how she organized the social studies program for active learning projects. "I took the social studies textbook--it was about studying a town." But the town in the textbook

was Morristown, New Jersey. She continued, "I said, that's stupid. Half of these kids don't even know the old port of [their own town]." So she wrote down the textbook's categories for studying a town: community services, transportation, communication, etc. She decided that each child could choose one category of their own town for study, and they could work in small groups of two to four each. "We do a report-back format," she said, so that they would learn from each other about their research on their town.

The children were grouped according to their interests. Miss VanDorn said, "If a child had a pressing need to do the history of the town, I considered their reasons" (Humaneness, Respect for Persons). She asked each child to write down his or her choices of study categories (first, second, third choices). The child also had to give the reasons for this interest. Then the teacher established the small groups for working together.

Miss VanDorn guided each group in planning the investigation of their town. "We did webbing to decide who would do what" in each small group. This brainstorming, in which all offer the ideas that occur to them, is a form of shared decision-making. "They could do any kind of project they wanted to do," she said, for a culminating event and report-back to their classmates on their findings.

Parent volunteers helped in these projects. Miss VanDorn said, "A parent can take three or four kids on a trip alone." An example is one group's study of communication in their town. Parents took this small group of children to a television station, a radio station, the newspaper plant and the post office. They interviewed people, using a tape

recorder. They took pictures with the teacher's camera. They used these records in their final report to the class. Miss VanDorn said of the reports, "It's from a kid's perspective--those are the things they remember." This teacher attitude indicates the Respect for Persons and Honesty of Encounters noted by Bussis and Chittenden (1970) as aspects of Humaneness in the developmental-interaction approach to teaching and learning. This approach was also indicated in the hands-on, activity-oriented method of Instruction and Provisioning in Miss VanDorn's social studies program.

The arts were integrated throughout Miss VanDorn's curriculum, in many projects. A major interdisciplinary curriculum project that year culminated in the children's being producers and actors in a video film they made. This project was funded by a State Innovative Education Grant and involved all four classes in the developmental-interaction school-within-a-school.

The project began early in the school year, when the third and fourth grades read and studied Greek myths. The teachers of the first and second grades read a lot of Aesop's fables to them. They looked at sound/filmstrips of fables and did story sequencing with them. All four classes did story writing, poetry, acting and dancing.

In January and February, a visiting teacher came (paid for by the state grant). She did creative dramatics and theatre mime with all four classes. They gave two performances for the whole school (their neighboring traditional classes). These performances were based on four Greek myths.

Then the four classes began to put together their own productions for video films. The two younger classes made up plays based on books they had read. The two older classes collaborated on a play, which was based on an original story written by some of the children. Each class planned their own creative dramatics production and acted in it. The children did the scenery and the parents made the costumes.

About a month before the video filming was to take place, a man came with his video camera (also paid for by the state grant). First, he helped the children get used to seeing themselves on film. The second time he came, the children did auditions for the television camera. Every child had some part in the plays. A few weeks later, the camera man came again and they practiced some of the scenes with the television camera. On the fourth day that he came, he made a video film of the entire play, with costumes, scenery--the final production. This pattern of visits covered many weeks and was repeated in all four classes.

The first graders had just finished their "movie" the day before the school-within-a-school was observed for this study. Their first showing of their film was that day, and they were thrilled with it. The third and fourth grades were still working on their cooperative movie-making project. There was a period in the afternoon when some of Miss VanDorn's children went into the fourth grade classroom to work with their committees on their film production project. This interdisciplinary curriculum project is a good example of the indirect Instruction of the developmental-interaction approach to teaching and learning.

Miss VanDorn was "pleasantly surprised" at how well her students had done on the annual standardized tests (required in all the city's schools). She is the only teacher/graduate in the sample who could actually make a comparison between her developmentally oriented class and the other third grades in the same school (that are more traditional in teaching approaches).

Miss VanDorn spoke of the four classes in the school-within-a-school. She emphasized, "in every case, in all areas of the curriculum," the children in these developmentally oriented classrooms "did better than the children in the traditional classes in the school". All the children in the developmental-interaction classes "tested in the 95th percentile and above". She continued, "They were outstanding in the overall test."

One unexpected area of the test in which the children in the developmental classrooms excelled those in the traditional classrooms was the area of "Application of Skills". Miss VanDorn said that the reason the teachers were surprised was that "these children were not used to having the skills pulled apart". In fact, she said, "They were not used to taking tests."

Another area in which the children in the developmentally oriented classrooms surpassed the children in traditional classrooms was in "Reading Achievement". The traditional classes used a basal reader approach with an emphasis on skills. Miss VanDorn said the first graders in the developmentally-oriented class "outstripped the other [traditional] first grade classes in reading achievement". She added that the developmentally-oriented first grade "had not used basals at

all". They did a total language experience approach, or a whole language approach. She said the classroom in the school-within-a-school all used this approach and an individualized reading program, and their reading achievement tests were excellent.

Although the children in the "school-within-a-school" had to take the school system's standardized tests, the usual methods of Evaluation in these classes was more developmentally oriented. Miss VanDorn's methods of Diagnosis and Evaluation have been noted in several projects described above. During the several Study Times during the day, she held individual conferences with children. Then she circulated around the room, observing the children at work and helping individuals and small groups as needed. She was Diagnosing individual needs and progress during these times. She explained, "They basically come to me. Then I go to them, seek them out, talk to them." She observes children while they work. She said, "I watch them." She keeps records of each child's daily progress. She explained, "I have my checklists; I keep track with checklists." The weekly schedule forms, on which children also keep daily records of their work and which they turn in to her each day, are helpful to her in Diagnosis and Evaluation. She writes her own records daily of children's progress, based on these child-reports and her own observations.

One aspect of Evaluation is reporting in parent conferences. Miss VanDorn contrasted the conferences in this developmental-interaction program with those in the traditional school where she had previously taught. There, the emphasis of the school had been getting through several textbooks and correcting papers. Miss VanDorn said that, in the

traditional school, "talk was unacceptable". She often thought, "At the November conferences, what am I going to say? I know their papers--I don't know the kids." However, she had found that an immediate change had occurred here, in the school-within-a-school, when she began to organize her classroom and instruction in a developmental-interaction approach. She said, "After two weeks, I knew these kids so well--I saw them as people--I know their learning styles, what their interests are." She repeated, "After two weeks, I knew these kids so well--that when the November parent conferences came around, a half-hour conference was nothing."

Miss VanDorn's Ideas About Children and the Process of Learning were evidenced throughout her program. Her giving attention to the development of the whole child was seen in many ways. She referred to child development in her discussion of her planning. She made many provisions for cooperative learning in small groups. She gave attention to building good relationships among children, evidencing her concern for the social and emotional development of children as well as their academic and intellectual development. Her Instruction and Provisioning were geared to the active involvement of children. Their learning was experience-based. She built choices for children into the program and tailored the work to children's interests. Trust in children was evident: "Children gravitate to what they like--also, to what they need," she said.

Her Ideas About Children and the Process of Learning are seen in the way she individualized Instruction. She allowed for differences in children, saying, "I know their learning styles." There was both direct

Instruction and indirect Instruction in projects. When asked why she has the children work in small groups, she emphasized the value of children's talking, "saying their own ideas", and having a process for "exchanging ideas and getting feedback". This Humaneness (Respect for Persons, Honesty of Encounters, Warmth) was seen all through Miss VanDorn's program.

Her Ideas About Children and the Process of Learning were seen in her regard for children's feelings. When asked whether children's feeling and needs (emotional and social development) have a place in the classroom, she said "Yes". She said of her children, "They are much more forceful in expressing their opinions here" than in the traditional school setting where she had taught before. She said that these children express all feelings--"excitement, fears, disappointments". When a child was in tears recently, "four or five children went to help". She continued, "I see them putting their arms around each other. I have to do very little interceding any more--they have learned to help each other." Miss VanDorn valued their expression of feelings as much as their ideas and products.

There was a great deal of shared decision making in Miss VanDorn's class. Her program allowed for a high degree of self-initiated and self-directed learning. She gave children real responsibility for their learning. This is indicated in the time schedule that allows choice times for planning their study and the long-range assignments for either individuals or groups. Her trust in children's taking responsibility went beyond the usual job chart and classroom clean-up (which they also did). She organized her reading, writing, science and social studies

programs around an independent study and report-back format.

The Self Perception of the Teacher was evident in many ways, in Miss VanDorn's work. She spoke of the role of the teachers in the developmental-interaction school-within-a-school: "We are stage-setters. We call it leading from behind." She guided the children in their work, in her individual conferences. She was the authority in the classroom in the sense of a provider and enabler, giving organization and structure to the program, giving clear guidelines, and then letting the children make choices and solve problems within this structure. She said, "I have to sit and think for hours--how am I going to organize this thing?" She continued, "But once the organization is there, they [the children] can do it independently." This illustrates the teacher as authority but not authoritarian in the developmental-interaction classroom.

Miss VanDorn's Self Perception was seen when she talked about the achievement she was most pleased with this year. "Finding ways to put the responsibility for work on the child," she said. "It makes a more exciting program; it's a better piece of learning." When asked whether her personal interests carry over into the classroom, she spoke of her interest in science. She also described a project on the Great American Smokeout the children had done.

The characteristic Seeking Professional Growth was evident. Miss VanDorn saw herself as a continual learner. Since graduation from the University of Massachusetts, she had taken courses in classical literature and philosophy and in computers. For the State Audubon

Society, she had developed a program of hands-on science activities for teachers. She had learned sign language so that she could mainstream deaf children in her class in the other school where she taught. The summer before, she had taken a course on the whole language approach to teaching. She had been on the science committee for two years, sharing in the planning of a new science curriculum for the school system.

The characteristic Seeking Professional Growth is associated with the teacher's seeking out support systems. There was a great deal of collegiality among Miss VanDorn and the other three teachers in the school-within-a-school. They share ideas informally and meet weekly to plan together. There was a lot of teacher planning for interchange among the children in the four classes, in projects. The older and younger children often worked together. Miss VanDorn and the fourth grade teacher were planning a team teaching project for their classes next year.

The characteristic Seeking Professional Growth has also been associated with building support systems among the parents. One of the purposes in setting up the developmental-interaction program in this school-within-a-school was to give parents a choice in the kind of schooling their child has. Therefore, a goal of the program was to involve parents in classroom activities. A Volunteer Coordinator (a parent) for each class has monitored this program.

Parents have come to help out in these four classes on a regularly scheduled basis. They have contributed talents, skills and knowledge. They have helped with such projects as: making pottery, glazing and firing it; the study of trees; a short-wave radio project. Parents

helped with making costumes for the television plays; they played the piano and helped the children write original songs. They have taken children on field trips. The Volunteer Coordinator in one class was a father, and he arranged for 11 fathers to come to the class to help out that year. Miss VanDorn said, "If a parent is nervous about working with children, I ask them to help with the bulletin boards."

She remarked, "We have been enriched by the parent help. They feel ownership in the classroom." She was asked whether she was apprehensive in the beginning, about whether the parents would understand this way of teaching. She replied, "I was apprehensive about not having them come-- we'd have to explain ourselves." She said that parents can see what's going on when they come to the classroom. In addition to the parent volunteer program, the four teachers in the school-within-a-school held a parents' meeting once a month. There were many more parents' meetings than in a traditional school, Miss VanDorn said.

She was asked what the four teachers thought about having their mini-school housed within a traditional school. Miss VanDorn said that the other teachers in the traditionally oriented part of the school building "are sequestered in their own classrooms". Last year, she said, they would make remarks about the mini-school, like "That's learning?" Also, during the first year, the traditionally-oriented teachers would not sit with the new mini-school teachers at lunch time. This year, however, in the second year of the developmental-interaction school, the teachers in the traditional classrooms are saying, "We don't have all that good stuff." And they all sit together at lunch time. Also, the traditional first grade teacher was now saying that she intends to have

a more unit-centered curriculum next year and supplement the basal reader.

When asked whether any school policies interfere with their teaching, Miss VanDorn said, "We can't go outside for science projects when we want to. The other teachers in the building said we were getting more recess." She said that the four teachers thought that it was harder to have their developmentally-oriented school housed within a large traditional school. But the principal had been very supportive of them and their program, "and that makes the big difference," she said.

Miss VanDorn was particularly able to contrast her present two years of teaching in a developmental-interaction school-within-a-school with her previous seven years of teaching in a traditional school. "The biggest difference is time," she said. "I have so much time now. . . . I'm more relaxed about it." She explained, "I don't have to worry, 'Am I getting in 40 minutes of science, 60 minutes of math?'" In the traditional school, there was the pressure of not enough time to cover all the textbooks, she said.

In the traditional school, Miss VanDorn had tried to give children a share in decision making, because she believed in this. However, she said that "even the share decision making is different in the developmental-interaction classroom". She said, "I can really allow time to let the children work things out." She explained, "As a teacher, I was hurried before." She would say, "You said this--O.K.--you said that--then your decision must be . . ." But in the developmental-interaction classroom, she explained, "Now there's time to let them make their own arrangements."

She said that, in the interdisciplinary classroom, she was able to really get to know the children better, as people. She explained, "In the traditional class, it is hard to see every student because they have to do their papers, workbooks, reading. Talk is not acceptable." By contrast, in her present developmentally-oriented classroom, she said, "Now, it's fine if they want to work together and talk." She said the result had been that "after two weeks, I knew these kids so well--I saw them as people."

Miss VanDorn said that the teacher's role is different in the developmental-interaction classroom. "This is less teacher-directed than the traditional school," she said. She saw the teacher's role as guide, facilitator, organizer, supporter. She said, "The children take more responsibility for their own learning" in the developmental-interaction classroom.

Miss VanDorn had found the developmental-interaction approach to teaching to be hard work. This surprised her, for two reasons. She said, "I had a background for this work," referring to her teacher education in the Interdisciplinary Program at the University of Massachusetts. Also, speaking of the other teacher who had set up the school-within-a-school with her last year, she said, "We both had years of experience before." She continued, "Yet the first year was so hard. We both worked until six or seven o'clock every day. It was so hard."

Asked how she would characterize her school-within-a-school, Miss VanDorn said, "We call it a developmental/integrated program. Now in its second year, they said, "We go around to other schools to talk about this model." The school system had set up a Developmental

Task Force, whose purpose was to consider how to make their standard curriculum more developmental. Also, another school was considering starting a few classrooms for the developmental-interaction approach, to operate as a school of choice like Miss VanDorn's mini-school. Additional classes were being added to Miss VanDorn's mini-school for the next year, and there was a long waiting list of children to attend.

Miss VanDorn talked about the teacher education she had experienced nine years before, in the Interdisciplinary Program at the University of Massachusetts. She had been able to adapt some things in the traditional school where she had first taught for seven years. But then she was asked to set up this school-within-a-school, an entirely developmental-interaction and interdisciplinary program in this public school system. She said, "I got out all my textbooks and notes from INTEP" (the Interdisciplinary Program at the University of Massachusetts). She spent the summer studying these notes. She recalled "how we had done social studies; the inquiry approach in science". She remembered the reading course and its emphasis on the language experience approach to teaching and learning. This approach was reinforced by a summer course she had recently taken on the whole language approach from a visiting professor from England.

Miss VanDorn said, "I do something with the children here, then I say, 'Oh yes, we did that'," recalling the workshop courses she took at the Interdisciplinary Program. She thought that, once having done the hands-on, experiential learning herself, as a teacher candidate, "it becomes subconscious". She said that, much later, "I realize I did that" in the courses.

She was asked whether there were any changes she would recommend for the Interdisciplinary Program for teacher education at the University of Massachusetts. She said that teachers need to know "how to organize the day". She suggested that the Program have the "classes more on a large block of time schedule" through a whole day.

Miss VanDorn said that it feels so natural to learn by doing, that teacher candidates may not be aware of the teaching strategies they are experiencing. Therefore, she said, when the professors are modeling a method of indirect instruction, they should "tell us--point it out--so we are aware".

Also, she said, "Teachers need words to call it." From the workshop courses, with their opportunity to "do things", she would realize later "I know that--yes, I got the techniques, but what to call it?" She said that a teacher needs to be able to explain these methods to parents and principals. She said of the developmental-interaction approach to teaching, "This is not standard knowledge."

Miss VanDorn spoke of the reassurance and understanding she had gained in her college preparation for teaching in the Interdisciplinary Program at the University of Massachusetts. Seven years later, when she had given the challenge of setting up the first model of the developmental-interaction and interdisciplinary classroom in a large city school system, this confidence in her ability came through. She had relied on her notes from her courses, and she said, "I knew, somewhere deep down, I could organize it." She said, "I think that the best thing for me was to know that it could be done."

Recapitulation: The Teacher/Graduates'
Views of the Interdisciplinary/
Integrated Day Program

The purpose of this dissertation is to explore certain questions which are given in Chapter 1. Many of the remarks made by the sample of teacher/graduates are directly relevant to these questions. For the convenience of the reader, the researcher will now pull out certain quotations from the case studies and interviews in order to organize them under the specific questions to which they relate. Re-grouping certain statements of the teacher/graduates in the following way will aid the teacher in considering the conclusions to follow in Chapter 5.

First, a major question concerns how the Interdisciplinary Program fosters the eight characteristics and roles of teachers as identified by Bussis and Chittenden (1970). Those characteristics which are relevant will be listed at the end of each group of teacher statements below. Also, to explore this question further, certain sub-questions were asked in Chapter 1. How is the program organized? What happens in the methods courses? What about student teaching--was this valuable to the candidates? The interviews revealed the teacher/graduates' views on these questions, as follows.

Program Organization--Teacher/Graduates'
Statements

For one semester, each teacher/graduate spends approximately half of each week in methods courses and the other half in an elementary school classroom (as a prepracticum). The teacher/graduates remarked about this as follows:

I liked the way the Integrated Day Program was set up--we were at the same time in the children's classrooms.

It was so valuable; we were given the opportunity to do in the classrooms with children what we did and talked about in the courses. [emphasis hers].

We did hands-on things and learned techniques in the courses. Then you had to try it out [with children].

The things we were learning . . . in the courses, we could turn around and do [with children in the prepracticum].

Also, we got a chance to see classroom teachers right away. Then we'd come back and we'd talk about what did we do in class this week.

(These statements indicate Instruction, Provisioning.)

What Happens in the Methods Courses-- Teacher/Graduates' Statements

Both the teaching strategies of the professors and the process of teacher learning were commented on by the teacher/graduates in the interviews, as follows:

The professors modeled what they preached. To me, that was very positive.

We were taught in the Interdisciplinary classes there that that's the same way we should teach kids. It wasn't just 'Read this book'; it was, 'Here, try this.'

In the hands-on methods and learning by doing, we were taught as though we were the elementary students. I did things. . . . I learned and thought as children do. . . . I'm using those teaching techniques now.

Learning with hands-on materials gives you an insight into how kids learn.

We learned by doing. I had an active role in my learning.

It's learning through experience, activities. It really showed me that that's how kids put things together, how they learn. That's why I'm so activity oriented now.

I'm doing what I was taught in how to handle things with kids.

Doing a lot of things, projects together in small groups . . . helped me later in a team teaching job.

We worked in small groups in all the courses and shared ideas.

So much growth went on. One person would mention an idea, another person would build on that idea, another person would say 'I changed it this way'. I think planning together, talking about things together . . . is excellent.

It took time to appreciate the program. . . . Obviously, over time, I used a lot of the ideas. So, yes, they were workable.

The teacher education program made more of an impact than I realized. I was taught process--it made sense.

I valued my own active experience of learning myself with these methods.

The only thing I could really draw on [as a first-year teacher] was what I had done, not what I had listened to.

(These statements indicate Instruction, Provisioning, Ideas About Children and the Process of Learning, Self Perception, and Seeking Professional Growth.)

Specific Methods Courses and Later Use in Classrooms--Teacher/Graduates' Statements

Another major question in this study is concerned with how the teacher/graduates' performance in the classroom relates to the teacher training they received. Pursuant to this question, it is noteworthy

that all of the teachers interviewed in the sample made direct reference to the influence of their methods courses when discussing their present work. All of them said they were doing specific things in their classrooms which they attributed directly to the methods courses. Because this is an important finding in the study, the researcher has compiled remarks from case studies and interviews under each course heading, as follows:

(1) The Science Methods Course--Teacher/Graduates' Statements

In the science workshop, it was the inquiry approach. . . . My science program now is process, inquiry approach, hands-on.

And even in the college courses, we did the science experiments . . . so we had to think it through as kids would. [Now, in his class] Especially science, for me, has to be hands-on, play, find out. . . . I let them explore.

Science was all hands-on. We had the opportunity to take the materials and use them. . . . I learned science methods by doing them.

The science and social studies courses were very effective, especially science. His whole approach was that . . . science is the world--everything there is. I've taken that into this classroom tremendously [where she now taught].

They're doing activities in the science projects. I bring in hands-on materials and we go outside.

(These statements indicate Provisioning and Instruction.)

(2) The Reading and Language Arts Methods Course--Teacher/Graduates' Statements

In the reading course, I remember the language experience approach and individualizing reading. Now I have a whole language approach. . . . Reading is taught in the context of spoken and written language.

I have an individualized reading program and they read their own writing and a lot of children's literature.

The individualized reading program is mine--no one else in the school is doing it. They read children's novels and their own writing. . . . We've published 70 books this year.

The reading course was helpful as well. The professor set up books with these cards, and she wrote little activities about a particular section of the book. I've done that a few times.

I got those books you order--like we did in the reading course. And you get bonus books. I've built up my own library of children's books.

There was a wealth of information in the language arts.

We do a new vocabulary word every day and parents like it when they take it home to dinner. I got that in the reading course.

I've used the things to stimulate writing that I learned in the course.

I really appreciated, in the reading class, when she [the professor] put on the overhead projector a copy of a child's story writing. She modeled how to bring out his strengths.

I liked the workshops. . . . I did a lot of writing. I learned ways to encourage others and myself to write. [In her teaching of children that year, she said]: I saw the philosophy of the reading-writing connection.

I teach process writing almost completely in my class now.

(These statements indicate Provisioning, Instruction, and Ideas About Children and the Process of Learning.)

(3) The Multi-Arts Methods Course--Teacher/Graduates' Statements

I had never felt that I could do any art. From doing activities in the art course, I gained confidence in myself. I try to integrate art in projects now, in my class.

In multi-arts, there was time to do projects.

We didn't just hear about making puppets--we made puppets. Going through the process, figuring out what you had to do, and using them like children would. We put on a little show for each other.

I learned how to integrate the arts with language. I've done this a lot in my classroom. . . . You can act out a story. We do that. We made a puppet show from one of the basal stories.

I have a real tie with the Integrated Day Program, because we used to sing in the workshops. I took guitar lessons . . . and now I sing every day with my children.

I saw that there could be creativity and excitement in learning.

I've used a lot more art than I ever would have, integrating it in projects.

(These statements indicate Provisioning, Instruction, Humaneness, and Self Perception.)

(4) The Math Methods Course--Teacher/Graduates' Statements

In Math, there was enough time to use the manipulatives and see how they really worked. That's very important. Until you've actually played with them, you don't know how it works.

The hands-on ways in the courses--it gave me what I needed to work it out before I gave it to kids. We worked with the Cuisenaire rods--we used things.

[All the teacher/graduates in the sample used a teaching technique that one said was modeled by the Math professor.] She gave us a problem to solve, then walked around while everyone does it. I do that a lot.

(These statements indicate Self Perception, Instruction, and Provisioning.)

(5) The Social Studies Methods Course--Teacher/Graduates' Statements

In social studies, I learned so much. There's a lot more to social studies than just reading. You can

go to the library and bring in 20 books, then brainstorm with kids--'What do you want to learn about Japan?' They choose their own topics and groups and go find out.

I'm doing integrating on individual projects, like our Africa study.

I really liked the days when whole themes were developed--the Japan day.

I remember the social studies--how it was done. I plan integrated curriculum that way.

The social studies course was very effective.

In science and social studies and the arts, we got the most hands-on methods.

(These statements indicate Provisioning, Instruction, and Ideas About Children and the Process of Learning.)

(6) The Curriculum Methods Course--Teacher/Graduates' Statements

The curriculum course tied things together nicely. We learned how to plan integrated curriculum around a theme.

The professor would bring in a motivator. We'd walk into class . . . it got us motivated for our class. It really showed me concretely that this is how kids put things together.

The 'Integrated Day' Day was . . . very valuable. It was a whole month of planning curriculum around a theme, and then doing it.

Talking with my peers in the courses were excellent.

I remember sharing in the courses.

It is the integrated curriculum. It is project oriented, encouraging the interests of your students and building on their strengths.

You work out your integrated curriculum with their interests in mind.

In the Integrated Day, it's interest in a child's strengths, building on what they can do, and thinking of them as people--and a mutual trust.

The Integrated Day taught us that each child is an individual. Now I let each child be an individual and see his strengths.

(These statements indicate Ideas About Children and the Process of Learning, Provisioning, Instruction, Diagnosis, Evaluation, and Self Perception.)

Student Teaching--Teacher/Graduates' Statements

All of the sample of teacher/graduates interviewed spoke of their student teaching semester as being valuable. Many praised their cooperating teachers and appreciated being allowed to take real responsibility for children's learning in the classroom, as follows:

She pulled together the theory and real life.

He was so supportive. He backed me, trusted me, respected me and believed in me, that I could be a good teacher.

She spent a lot of time with us, explaining that, as a child, you learn best by doing.

He was trusting of my abilities. He gave me responsibilities for my own groups from day one. He was there if I needed help.

(These statements indicate Self Perception, Ideas About Children and the Process of Learning, Instruction, and Seeking Professional Growth.)

Collegiality and Community Building--Teacher/Graduates' Statements

There is another aspect of the relationship of the Interdisciplinary Program to the future work of its teacher/graduates. This is found in their statements about the community building and collegiality they had

experienced in the teacher education program. All of those interviewed said that they had valued this in the courses and tried to emulate it later with children in their own classrooms. They spoke as follows:

There was a real sense of community in the Integrated Day Program. It gave me a positive sense of self--to recognize strengths and build on that.

They're the only college classes I've had where they got to know each other, in the college classes.

I wanted to build a nurturing community in my classroom.

That's ideally what needs to be achieved in classrooms.

I think community is the first priority. Nothing learned is as important as being kind to each other.

(These statements indicate Humaneness, Ideas About Children and the Process of Learning, and Self Perception.)

Names for the Developmentally Oriented Classroom-- Teacher/Graduates' Statements

There is another aspect of the relationship between the teacher/graduates and the program in which they were prepared for teaching. They have many names for the kind of teaching they learned to implement while in the Interdisciplinary Program, as follows:

It is very creative. I think of it as more process-oriented.

In 'interdisciplinary teaching', you have to be very patient and flexible.

Child-centered is what I call it.

Developmental is a good overall term.

It is the integrated curriculum. It is project oriented.

We call it the developmental-integrated program.

We do a lot of explaining to School Committees
[Boards of Education in New England towns].

We need names to explain it to parents.

It is a process curriculum drawn from many sources.

(These statements indicate Self Perception and Ideas About Children and the Process of Learning.)

Traditional School Settings-- Teacher/Graduates' Statements

One of the major research questions is concerned with whether the school setting (traditional or developmental/interdisciplinary) makes a difference in the teacher's classroom performance. Many of the teachers commented on teaching in traditional schools. One of those interviewed had left teaching after two years in a traditional school, to return in later years to a developmental/interdisciplinary school. Why had she left? "It's hard to know how not to be consumed by the system. I couldn't teach this way there." Another who had her first job in a traditional school, and later switched to a more developmental-interaction school, said also, "I couldn't teach this way in that school." Another first-year teacher/graduate said, "We did wonderful things--the creative writing, and we put on a play at Christmas. But then they said my children weren't quiet in the halls, and this built against me." She said, "I felt like such a failure; I should just hide." She did compromise with the system's demands (and her own understanding of individual children) in her second year, but she said, "I must have had the hardest time of any of them." Another explained how she got some extra things in the schedule in her traditional school.

"You have to do things so quickly and short--they don't care about integrated activities." Another in a traditional school said, "It's tough, because you try to do a project; and you come up with something, and you're kind of looking over your shoulder--should I be doing this? . . . I feel guilty . . . almost, because you're missing part of the textbook." Another said that the Interdisciplinary teacher education program stressed individualizing, "and it is so clear to me that they are all individuals". But in her traditional school, "the reality for me is . . . the books and going through the pages". Several teacher/graduates said the program should give more information on how to adapt to a traditional school. (These statements indicate Self Perception, Instruction, and Provisioning.)

Valuable Aspects of the Methods Courses-- Teacher/Graduates' Statements

In the interviews, the final question to all of the teacher/graduates concerned what one thing in the methods courses they found to be the most helpful in terms of their future classroom teaching. One summed up the main features that were called "valuable" in the courses by all of the teacher/graduates. She said, "The community building, the hands-on and process learning, and the experience of learning this way--to understand how to teach this way."

Data From the Questionnaire and Observation Rating Scales

The sample of teacher/graduates included in this study is 10, with 5 teaching in traditional schools and 5 teaching in developmental/

interdisciplinary schools. This population is small. Therefore, statistical methods will not be used in analyzing the data of the three rating scales in this study.

However, the raw scores of the rating scales do show several trends. The scores of this sample population indicate important findings in answer to the following questions, which are addressed in this research study:

- (1) Do the teacher/graduates of the Interdisciplinary Program at the University of Massachusetts show more traditional teaching practices or more developmental-interdisciplinary teaching practices?
- (2) How do the types of schools in which the teacher/graduates work (either traditional or developmental/interdisciplinary schools) have an influence on the teacher's classroom practices?

(These questions are addressed in the conclusions in Chapter 5.)

The Walberg and Thomas Questionnaire and Observation Rating Scale

The Walberg and Thomas Observation Rating Scale and Questionnaire (Walberg & Thomas, 1971) was proven by Evans (1971) to definitely indicate whether a teacher tends to be more traditional or developmental/interdisciplinary in his or her classroom methodology (practices, characteristics, and roles of teachers). The observation rating scale shows the opinion of the visiting observer, while the questionnaire gives the self evaluation of the teacher on the same indicators. The majority of the indicators in this scale relate to a teacher's

Provisioning and Instruction in Bussis and Chittenden's (1970) list of teacher characteristics and roles. Therefore, the scales are useful for understanding a teacher's classroom practices. In these two scales, the range of possible answers is 50 (most traditional possible score) to 200 (most developmental/interdisciplinary possible score). The median on this scale is 125, with scores below 125 indicating more traditional classroom practices, teacher characteristics and roles. The scores above 125 indicate more developmental/interdisciplinary ones.

The findings of this study show that all the teacher/graduates in this sample had scores above the median of 125 on both of the Walberg and Thomas scales (observation and questionnaire). This is true of teachers in more traditional school settings and developmental/interdisciplinary school settings. Table 4 shows that the teacher/graduate's scores range from 131 to 192. This indicates that all of the teachers in this sample were teaching with more developmental/interdisciplinary methods than traditional methods.

The scores of the Walberg and Thomas questionnaire also give insights into another question posed by this study: How does the school setting influence the extent to which a teacher can use developmental/interdisciplinary methodologies? In Table 4, the scores of two populations are grouped separately--teachers working in traditional schools and those working in developmental/interdisciplinary schools. The distribution of the scores of the two populations is non-overlapping. The teachers working in developmental/interdisciplinary school settings have much higher scores (159-192) than those in traditional schools (131-143).

TABLE 4

COMPARATIVE SCORES FOR SAMPLE OF TEACHER/GRADUATES
ON THE WALBERG AND THOMAS OBSERVATION
RATING SCALE AND QUESTIONNAIRE

	OBSERVERS' RATING SCALE SCORES	TEACHERS' QUESTIONNAIRE SCORES
<u>Teachers Working in Developmental/ Interdisciplinary Schools:</u>		
Bennett	175	166
Simmons	167	159
Hilton	191	192
Stevens	171	167
VanDorn	182	172
<u>Teachers Working in Traditional Schools:</u>		
Thomas	137	133
Lawson	131	135
Patterson	131	132
Thorne	134	138
Brown	145	143

This indicates that an important difference exists between the two types of school settings.

The Hoy-Jalovick Teacher Attitude Inventory

A third instrument was used to describe the sample of 10 teacher/graduates. This instrument was the Hoy and Jalovick Teacher Attitude Inventory (1979). This questionnaire on attitudes is concerned with one of the eight characteristics of teachers identified by Bussis and Chittenden (1970), namely, Ideas About Children and the Process of Learning.

The range of possible scores in the Hoy and Jalovick Teacher Attitude Inventory is 20 (most traditional) to 100 (most developmental/interdisciplinary). The median score is 60, with all scores below 60 indicating more traditional attitudes and all above 60 indicating more developmental/interdisciplinary attitudes on the part of teachers. The results of the questionnaire show, as in the Walberg and Thomas Observations and Questionnaires reported above, the following: All of the teacher/graduates in this sample had scores above the median. Their scores range from 62 to 88 (see Table 5). This indicates that all of the sample of teacher/graduates from the Integrated Day/Interdisciplinary Program at the University of Massachusetts have attitudes and understandings of how children learn that are consistent with a developmental/interdisciplinary rationale and belief system.

An important finding resulted from ranking the teacher attitude inventory scores and comparing them to the type of school in which each teacher was working. Table 6 gives this ranking. It shows that the

TABLE 5
 COMPARATIVE SCORES FOR SAMPLE OF TEACHER/GRADUATES
 ON THE HOY AND JALOVICK TEACHER ATTITUDE
 INVENTORY

	SCORE
<u>Teachers Working in Developmental/Interdisciplinary Schools:</u>	
Bennett	88
Simmons	73
Hilton	75
Stevens	62
VanDorn	78
<u>Teachers Working in Traditional Schools:</u>	
Thomas	69
Lawson	74
Patterson	76
Thorne	72
Brown	78

TABLE 6

RANKING OF SCORES ON THE HOY AND JALOVICK TEACHER ATTITUDE
INVENTORY FOR THE SAMPLE OF TEACHER/GRADUATES

RANKING OF TEACHERS' SCORES	TYPE OF SCHOOL TEACHER WORKING IN
62	Developmental/Interdisciplinary
69	Traditional
72	Traditional
73	Developmental/Interdisciplinary
74	Traditional
75	Developmental/Interdisciplinary
76	Traditional
78	Developmental/Interdisciplinary
78	Traditional
88	Developmental/Interdisciplinary

scores on Attitudes were intermixed; there were no differences and no trends between the two populations. Two teachers had scores in the 60s; one was in a traditional school and one was in a developmental/interdisciplinary school; seven teachers had scores in the 70s, four were in traditional schools and three were in developmental schools. One teacher had a score in the 80s and was in a developmental school.

Thus, in this sample, there were no basic differences in the attitudes and beliefs (or Ideas About Children in the Process of Learning) between the teacher/graduates working in traditional schools and those in developmental schools.

Further analysis and conclusions from this data and the case studies are given in Chapter 5.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

As indicated in the first chapter of this study, the present investigation began with an interest in how certain characteristics of teachers are fostered in a teacher education program, the Interdisciplinary/Integrated Day Program at the University of Massachusetts. Using a multi-faceted research design, the study examined both the undergraduate course of study and the work of a sample of its teacher/graduates in their elementary classrooms. Questionnaires, observations, and interviews contributed data for a follow-up study of the teacher/graduates. To study the teacher education program, the researcher spent three years enrolled in the undergraduate courses as a participant/observer and documented this experience. Case studies present this data.

This study was guided by four major research questions, each having related sub-questions. The first question is: How does the Interdisciplinary/Integrated Day Program operate to foster the development and expression of the eight characteristics and roles of teachers as identified by Bussis and Chittenden (1970) and Walberg and Thomas (1971)? The sub-questions under this relate to the organization of the program, the student teaching, and the conduct of the methods courses. Also, questions concern the instructional strategies of the professors and the learning processes of the teacher candidates. There are also questions about how the program fosters change in teaching/learning approaches, its significant features, its difference from conventional

programs, and whether the program is actually putting into practice the new strategies recommended by educational analysts so that teacher education programs may foster more developmental/interdisciplinary approaches to teaching/learning.

The second research question is: Concerning the elementary classroom teachers who were prepared in the Interdisciplinary Program, how does what teachers do in performance relate to the teacher training they received? The first sub-question under this relates to whether the teacher/graduates are manifesting the eight characteristics identified by Bussis and Chittenden (1970) and Walberg and Thomas (1971) in their current classroom teaching. The other sub-questions relate to the impact of the methods courses on their work in classrooms and the value of the student teaching experience.

The third research question is: Do the teacher/graduates of the Interdisciplinary Program evidence more traditional teaching practices or more developmental/interdisciplinary teaching practices in their classroom teaching? The sub-questions relate to change from their own traditional school background (where appropriate) and their early identification and motives for choosing this particular teacher preparation program.

The fourth research question is: Does the type of school setting (i.e., traditional or developmental/interdisciplinary approach) in which the teacher/graduates work make a difference in their classroom teaching practices? (There are no sub-questions under this major question.)

Data collected on both the teacher education program and a sample of its teacher/graduates is presented in Chapter 4. Summaries of the

study's major findings, conclusions, and recommendations are presented below.

Conclusions Regarding the Eight Characteristics and Roles of Teachers

In Chapter 4, data from the Walberg and Thomas (1971) questionnaire and observation rating scales are presented. Since the sample of 10 teacher/graduates in this study is small, statistical methods were not used in analyzing data. However, the raw scores from the rating scales do show several trends.

The Walberg and Thomas (1971) questionnaire and observation rating scale are based on the eight characteristics and roles of teachers as first identified by Bussis and Chittenden (1970). Of the indicators on these rating scales, 26 pertain to the teacher characteristic Provisioning, 5 to Instruction, 7 to Diagnosis and Evaluation, and 7 to Humaneness. The Evans (1971) study showed these rating scales to be reliable for these five characteristics and roles. (The other three characteristics are investigated with other instruments and/or methods in the present study.)

The findings from the rating scales given in Chapter 4 indicate that all the teacher/graduates in the sample were above the median in expressing the characteristics and roles identified by Bussis and Chittenden (1970) as related to the developmental/interdisciplinary approach to teaching and learning. The findings also indicate that all the teacher/graduates in the sample were manifesting more developmental/interdisciplinary characteristics and practices than traditional ones.

These findings are corroborated by the case studies of the sample of teachers, given in Chapter 4. Specific instances of the manifestation of each of the eight characteristics are pointed out in the classroom teaching of each teacher/graduate as his or her work is described.

The description of the program and each methods course are given in case studies in Chapter 4. The fostering of each of the eight characteristics is pointed out as this occurs in the conduct of the courses and the program as a whole.

Therefore, the findings in these three sources of data strongly suggest that the Interdisciplinary/Integrated Day Program does effectively prepare teachers to express the characteristics and roles identified by Bussis and Chittenden (1970) and Walberg and Thomas (1971) as typical of the developmental/interdisciplinary approach to teaching.

Conclusions About Whether the School Setting Makes a Difference

A major research question addressed in this study is whether the type of school setting (traditional or developmental-interaction) makes a difference in the classroom practices of the teacher/graduates. The Walberg and Thomas (1971) rating scales were demonstrated by Evans (1971) to clearly distinguish between these two types of teaching approaches in the work of teachers. Half of the sample for the present study were teaching in traditional schools; the other half were teaching in interdisciplinary types of schools.

The findings given in Chapter 4 show that the teacher/graduates working in developmental/interdisciplinary school settings had much

higher scores on the rating scales (159-191) than the teacher/graduates working in traditional schools (131-145). The scores of the two populations were non-overlapping (see Table 4). This implies that an important difference exists between the two types of school settings. Also, this implies that the teacher/graduates working in developmental/interdisciplinary types of schools are better able to put into action the teacher characteristics and roles identified by Bussis and Chittenden (1970) and Walberg and Thomas (1971).

Furthermore, the findings on the rating scales reported in Chapter 4 show a wider range of scores for teacher/graduates working in developmental/interdisciplinary schools than those in traditional schools. This suggests that the teacher/graduates who found jobs in developmental/interdisciplinary schools may have greater freedom to express their individuality in these schools by using a wider range of methods, materials and teaching/learning styles.

On the other hand, certain conclusions are implied about the teachers in traditional schools, by their lower scores reported in the findings in Chapter 4. While above the median on the rating scales, their lower scores indicate that they were less able to express and implement the developmental/interdisciplinary methods, roles and teacher characteristics identified by Bussis and Chittenden (1970) and Walberg and Thomas (1971).

Also, the findings show a narrow distribution of scores of teacher/graduates teaching in traditional schools. (Four out of five in the sample in traditional schools had scores in the 130s.) The consistency of this sample suggests that the traditional school setting may impose a

pattern of restriction on the teacher's ability to use the developmental/interdisciplinary teaching methods and roles. The teacher/graduates may be forced to be more conforming in a traditional school setting, suppressing their individual expression of the roles and characteristics identified by Bussis and Chittenden (1970).

Findings were also given in Chapter 4 from another rating scale which was used to explore one of the characteristics of teachers identified by Bussis and Chittenden (1970), namely, Ideas About Children and the Process of Learning. The Hoy and Jalovick (1979) Teacher Attitude Inventory was filled out by the sample of teacher/graduates. The findings from this data indicate that all of the teacher/graduates in the sample had more developmental/interdisciplinary attitudes and beliefs about children, learning and teaching than traditional ones.

However, an important finding resulted from ranking the scores (see Table 6). The ranking shows no basic differences and no trends between the two populations--those teaching in traditional schools and those in developmental/interdisciplinary schools. Yet there were differences in the classroom practices of these two populations, as shown in the Walberg and Thomas (1971) rating scales (described above).

This suggests that, although the entire sample of teacher/graduates had similar attitudes, beliefs and understandings of children and learning, they were not all able to use teaching methods that exemplify their attitudes. Those in traditional schools were found to be restricted in the implementation of methods related to their understanding of children and learning. However, those in developmental/interdisciplinary school settings were found to be able to use more methods, roles and

characteristics consistent with their understanding of children and learning. Therefore, we conclude that the data in this study do demonstrate that the school setting makes a difference.

Conclusions on Change (Related to Teachers'
Motives and Past Schooling, or
Anticipatory Socialization)

Relevant Conclusions of Previous Research

The findings and conclusions of the present research study are similar to Lortie's (1975) regarding the teachers' motives for going into teaching as a career. He found that young people's major motives were based on a positive identification with their own early schooling. Lortie's teachers said they liked school, or liked a subject such as history or sports. Some remembered favorite teachers and said they had wanted to teach since childhood. The teacher/graduates from the Interdisciplinary/Integrated Day Program said the same things.

However, the findings and conclusions on their change in teaching methods are quite different from the conclusions of Lortie and others. Lortie found that people who had enjoyed their early schooling enough to choose to stay on as teachers (positive identifiers) "will be more likely to approve of existing arrangements and will be less motivated to press for change" (1975, p. 30). Lortie concluded that "people attracted to teaching seem to favor the status quo" (1975, p. 230). Feiman-Nemser (1982) says that teachers' universal liking for their own schooling has led to the widespread, unquestioning perpetuation of traditional practices in schools in the United States.

Conclusions on Change in the Present Research Study

The findings of the present study show similarities to the above findings, as well as some differences. First, we have seen that all of the sample of the teacher/graduates trained in the Interdisciplinary/Integrated Day Program are using more developmental/interdisciplinary methods than traditional methods (evidenced in the quantitative data reported above). Yet the interviews with these same teachers revealed that nine of the ten in the sample had attended traditional schools all their lives before college. Furthermore, eight of them were positive identifiers with their own traditional schooling. Evidence that their positive identification is similar to Lortie's sample is seen in the teacher/graduates' own remarks.

"I had a successful experience in traditional elementary schools," said one teacher/graduate of the Interdisciplinary/Integrated Day Program. Another said, "I had always wanted to teach. . . . As a child, I would watch my teachers and think, 'I would like to do this'." She added, referring to her teacher education in the Interdisciplinary Program, "This way of teaching was new to me." Another teacher/graduate remarked, "I had no idea about styles of teaching. I went to more traditional schools. . . . This way was very different from what I had been used to." Another recalled, "I went to private Hebrew schools that were traditional. . . . Sometimes Social Studies was integrated."

Another teacher/graduate said, "I came from a traditional school background. . . . Integrated Day was more creative." Another reported, "I liked school and wanted to teach since I was a little child. I went

to traditional schools." She added, "I was a natural learner and learned more out of school than in school." Another said, "I went to traditional schools. They were nothing like Integrated Day." And another recalled, "I went to traditional schools as a youngster. I always wanted to teach." She added, "I was the kind of kid who did well in school--filling out the workbooks." These remarks from the interviews support our conclusion that eight out of ten of the teacher/graduates in the sample were positive identifiers with their own early traditional school.

Only one of the sample of teacher/graduates in the present study had gone to an Interdisciplinary type of school as a child. She said, "It had a lot of the features of open education. We did hands-on things." She also liked school.

And only one was a negative identifier with her past schooling. She said, "I went into teaching because mine was too traditional, except for my sixth grade teacher." She explained, "He encouraged us to think and figure out answers. . . . We had ownership of the classroom." From this experience, she had a glimpse of what schools could be, and her motive was to make schools better for children. (All of these remarks about their early schooling indicate Self Perception of the Teacher.)

It is important to note, in regard to the conclusions of the present study, that Lortie found no counter identifiers who wanted to change school practices in his Five Towns Study. "Nor, in fact," he says, "are they evident in any studies I know of. If they do indeed exist, they must be very scarce" (1975, p. 46). Lortie concluded that the absence of

negative identifiers was significant. Whereas a great number of people chose to become teachers because they liked their own traditional schools, they were "not offset by any noticeable number of counter identifiers who wanted to alter . . . school practices and modes of operation" (1975, p. 54). Therefore, Lortie says, there has been little change in schools for many years. He attributes this lack of change to the lack of counter identifiers. The present study adds another reason to those found by Lortie.

Like Lortie's (1975) study, negative identifiers are scarce in the present study (only one in a sample of ten). Yet, unlike Lortie's research, we must conclude that nine of the teacher/graduates interviewed and observed from the Interdisciplinary/Integrated Day Program at the University of Massachusetts did change to different teaching methods from those they had known as children in school, even though eight of the teachers were positive identifiers with their own earlier traditional schooling. The significance of this conclusion in the present study is that something other than counter identification brought about this dramatic change in teacher methods for eight of the sample who had their teacher preparation in the Interdisciplinary/Integrated Day Program at the University of Massachusetts.

What caused the change? To explore this question, we must look at evidence in three areas: (1) the availability of choice in different teacher education programs at the University of Massachusetts; (2) the stated reasons or motives of the sample of teachers for choosing the Interdisciplinary/Integrated Day Program over available traditional elementary teacher preparation programs; and (3) the nature of the

Interdisciplinary/Integrated Day Program itself--the particular features of the program that enabled teachers to change.

Conclusions on Motives for Choice of
the Interdisciplinary/Integrated Day
Program by Teacher Candidates

It is important to note that the teacher/graduates in the present study made a conscious choice to enter the Interdisciplinary/Integrated Day Program as their professional preparation program. There were several traditional elementary education programs for teacher trainees available to them at the University of Massachusetts in the 1970s. The present study covers graduates for a ten-year period, 1977 to 1986. By the early 1980s, the number of teacher education programs had been reduced to four--an Early Childhood Program, an Academic Disciplines Program for preparing High School teachers, and two elementary education programs for teacher preparation. Teacher candidates could choose a more traditional program, which also had a multicultural or bilingual emphasis. Or they could choose a nontraditional program, the Interdisciplinary/Integrated Day Program, which is the subject of the present study.

After teacher candidates had completed the prerequisite courses, they could apply to the professional teacher preparation program of their choice. The application procedure, with interviews and careful screening for the Interdisciplinary Program, is described in Chapter 4. The professors in this program are aware that not all personalities are suitable for the developmental/interdisciplinary approach to teaching.

The question then arises, what were the motives for the teacher candidates' choosing the Interdisciplinary/Integrated Day Program over the available traditional approach to teacher education? These data are needed in order to arrive at conclusions as to the part the program itself played in changing their methods from the traditional ones they had always known.

Student motives for choice of program are significant. They go beyond liking school and wanting to continue the status quo, as Lortie (1975) found. The teacher/graduates from the Interdisciplinary Program did like school (nine of the ten), but the findings of the present study indicate stronger reasons and motives for their choice of the developmental/interdisciplinary approach to teaching rather than the traditional approach they had known in the past. The evidence leads to the conclusion that, somewhere along the way, they had gained new insight into what children are like and how they learn, and this new insight led to choose to learn to teach in a different way from the teaching they had known.

Evidence to support this conclusion comes from the teacher interviews. When asked why they had chosen this particular teacher education program over the other available ones in the School of Education at the University of Massachusetts, the teacher/graduates referred to previous courses in college and their own previous experience with children. (Their answers indicate both Self Perception of the Teacher and Ideas About Children and the Process of Learning [Bussis & Chittenden, 1970]). One teacher said she had taken, as an elective, a philosophy course as an undergraduate. It included educational philosophy, particularly

Dewey's ideas. This course and her own contacts with children gave her, she said, "What I thought about children." She specified that "the Integrated Day Program taught me how to apply what I thought about children" [emphasis hers]. Another teacher said she had gained insights into how children grow and learn from her course in "Child Development" and her volunteer work in a day care center. This led her to seek the Interdisciplinary/Integrated Day Program.

Three teachers said they were attracted by the learning theory of the Integrated Day Program. One of these, who had also taught children in an ecology center, referred to his interview with the professors. "I really liked the idea of working on kid's strengths and interests," he said, "and the activity oriented--it's more hands-on." Another teacher/graduate said, "I was a natural learner, and this was a more natural way--a better way--to learn." Another liked the program's "more creative emphasis in classrooms". Three of the teachers interviewed mentioned the influence of the Introduction to Education course, called "Life in Classrooms", which is required of all Education majors. They said they were sent to visit many different types of schools in the prepracticum component of that course. One said she first saw a totally integrated classroom curriculum in a film shown in that course. Then she sought out such schools to visit and observe. Another said she was assigned a weekly observation in an integrated day type of school, while taking the "Life in Classrooms" course. She recalled, "When I first saw it, I said, 'This is not a school'." Then, over time, she said, "I saw how much the children knew, and the individual self development." She looked closer. "I began to discern the methods. . . . I saw how the

teachers developed curriculum from all sources, not textbooks." So she chose the Interdisciplinary/Integrated Day Program for her own teacher preparation experience.

Therefore, these findings lead to the conclusion that all of the sample of teacher candidates who chose the Interdisciplinary/Integrated Day Program did so for positive motives related to their own insights about how children develop and learn. Also, one concludes that eight of the sample had new and positive insights which prevailed in choosing to learn an interdisciplinary approach to teaching, despite their positive identification with their own traditional previous schooling. They did not favor continuity and the status quo in contrast to the teachers in Lortie's (1975) research. And, importantly, there was the choice of a nontraditional teacher education program available to them in this particular School of Education.

Conclusions on the Relationship Between the
Interdisciplinary Teacher Preparation
Program and Its Teacher/Graduates'
Performance in Classrooms

This brings us to another consideration in answering the question, "What caused the change in nine of the teacher/graduates of the Interdisciplinary/Integrated Day Program who did not go out and teach the way they were taught as children in their own traditional schools?" In order to reach conclusions about the impact of this particular teacher education program on the future teaching practices and learning theory of its teacher/graduates, we will review the data presented in Chapter 4 with four questions in mind: Did the methods courses make a contribution

to the teacher trainees' present classroom teaching? Did the teacher/graduates consider their student teaching the most valuable part of their teacher preparation, and/or did they find other aspects of their teacher education program to be especially valuable? Were there significant features of the course of study in the Interdisciplinary/Integrated Day Program which enabled all of the sample of teacher/graduates to implement more developmental/interdisciplinary methods than traditional methods in their present classroom teaching?

Relevant Conclusions of Previous Research

Again, we will cast the conclusions of the present research study against a brief background of previous research conclusions on these questions. (A detailed review of this research is given in Chapter 2.)

Feiman-Nemser says that "some researchers have argued that formal teacher preparation is not powerful enough to overcome the impact of early experiences" (1982, p. 5). Several research studies--those of Stephens (1969), Wright and Tuska (1968), and Lortie (1975)--have shown how strong the influence is on future teachers of their presocialization or childhood experience as a student. They have concluded that college methods courses do not change those early influences. They have said that teacher candidates usually come to college with internalized models of their own past teachers' practices. Lortie pointed out that teacher candidates have already begun studying teaching in a kind of child apprenticeship, having already logged 13,000 hours of observation and participation in schools by the end of High School. From his research in the Five Towns Study, Lortie (1975) concluded that "training in

pedagogy does not seem to alter earlier ideas about teaching" (1975, p. 9). Combs sums it up in his repeated assertion, "Teachers teach the way they have been taught, not the way they have been taught to teach" (Combs et al., 1974, p. 147).

Furthermore, Lortie describes the kind of teacher education program he found to have little impact on teachers. He indicates that a widely prevailing conventional type of teacher preparation program is found in the United States. This he describes, saying that "lecture and discussion are the bread and butter of education study" (1975, p. 59). He also describes conventional student teaching as "short and comparatively casual. Most states," he continues, "require some such experience before certification study, but usually only a few weeks" (1975, p. 59).

Also, the majority of teachers have been found to have a negative opinion of their education programs. Both Lortie (1975) and Bunker (1971) report from their own and others' studies that teachers consider their education methods courses repetitive, boring, too theoretical, and not practical. They say that the professors "proclaim goals which are unobtainable and advocate behavior which is not feasible" (Lortie, 1975, p. 69). Lortie concludes, "The lack of dramatic change in outlook after teacher training . . . supports the allegation that education training has low impact on subjects" (1975, p. 66).

To investigate this subject more closely, Clark, Smith, Newby and Cook (1984) asked teachers about their specific classroom methods with such questions as: Where did you get that idea? An astonishingly small number attributed their current classroom practices to their education methods courses. Feiman-Nemser summarizes the prevailing

situation: "When teachers talk about their professional learning, they rarely mention their Education courses" (1982, p. 3).

Teachers do, however, recall their student teaching experience favorably. Feiman-Nemser says, "Teachers typically regard it as the most valuable part of their preservice work" (1982, p. 11). For this reason, extensive research has been done on student teaching. (A detailed review of this research is given in Chapter 2 of this dissertation.)

Conclusions Regarding the Interdisciplinary Program's Difference From Conventional Teacher Education Programs

Given Lortie's (1975) description of conventional teacher education programs, cited above, it is important to make a brief statement on the differences in the program which is the subject of the present study. Such differences may support conclusions about the role the teacher education program played in changing the teacher trainees' classroom practices.

A detailed description of the Interdisciplinary Program for undergraduate teacher candidates at the University of Massachusetts is given in Chapter 4. Comparing that to Lortie's description of conventional programs cited above, one sees many differences. One comes to the conclusion that the Interdisciplinary/Integrated day Program is different from conventional teacher education programs in its methods of teaching college students and in their ways of learning, as well as in the length and supervision of student teaching (Provisioning, Instruction). The methods courses are not simply "lecture and discussion" (Lortie, 1975,

p. 59) as conventional courses are. The professors in the Interdisciplinary Program model the methods, and the college students learn them first by doing the learning as children would, with hands-on materials and activities in two and one-half hour methods course workshops. Concurrent with the course workshops each week, there is a long prepracticum of two to two and one-half days in a children's classroom before student teaching. And after the semester of methods courses, the teacher candidates spend one full semester as student teachers. Their student teaching is not "short and comparatively casual" (Lortie, 1975, p. 59). There is intensive supervision offered the student teacher. A "Resource Person" (Supervisor) from the University goes once a week all semester to visit the classroom of the student teacher and to help him or her process the experience. Also, Resource Persons are required to meet in a seminar at the University once a week, to discuss the progress of each student teacher. (The State requires only three visits by supervisors. This intensive supervision is a requirement of the Interdisciplinary Program and is reported in more detail in Chapter 4.)

Conclusions Regarding the Impact of the Methods Courses on the Performance of Teachers Trained in the Interdisciplinary Program

The present research study yields dramatically different findings and conclusions from the body of research reported above, on the teacher/graduates' reaction to the methods courses and the program as a whole. The findings indicate that the Interdisciplinary/Integrated Day Program and its methods courses made a valuable and significant contribution to the current classroom practices and performances of its former teacher

trainees, and they acknowledge their use of specific teaching methods that they learned in the methods courses.

This conclusion is derived from findings in two sources: (1) what the teacher/graduates said about the methods courses, and (2) what the researcher observed in both the methods courses and the elementary classroom of the sample of teacher/graduates. To support this conclusion, evidence will be listed below from three sources: (1) the teacher interviews, (2) the classroom observations, and (3) the participant/observation of five courses and the program as a whole by the researcher. (Extensive descriptions of the program and methods courses, as well as case studies of the sample of the teacher/graduates, are given in Chapter 4.)

Evidence from teacher interviews supporting this conclusion. There are 88 statements by teacher/graduates to support this conclusion in the case studies and interviews with teachers. Of these, 70 statements are listed in the last section of Chapter 4, entitled "Recapitulation: The Teacher/Graduates' Views of the Interdisciplinary/Integrated Day Program". Additional statements (18) are given in the present chapter as brief illustrations to support certain conclusions. The reader's attention is directed to the listings in Chapter 4 where the teacher/graduates' remarks are grouped under each course subject (in the "Recapitulation" section). This is certainly strong evidence that all of the teacher/graduates in the sample stated that they were doing in their elementary classrooms many specific things that they attributed directly to the methods courses they had taken in the Interdisciplinary Program. They made such assertions as the following examples:

One said, "I learned in the courses how to go about it, how to organize it and individualize it. . . . I'm using those techniques in my classroom now." Another said, "We experienced what we could expect children to experience. The hands-on experience helped. That's how I approach it with children now." And another said, "We teamed in the courses. Now I have children working together in science, in reading . . . they work well together . . . they help each other." One teacher's final remark is a fitting ending to this evidence. As the researcher was leaving, the teacher/graduate waved and sent a message to her former professors: "Tell them I'm doing everything I learned."

Evidence from observations supporting this conclusion. There is additional evidence to support the conclusion now under discussion, namely, that the Interdisciplinary/Integrated Day Program and its methods courses made a valuable and significant contribution to the current classroom practices of its former teacher trainees. This evidence is taken from three sources: the interviews, the observations of the classrooms of the ten teacher/graduates in the sample, and the observations of five of the methods courses. (These data are reported in more detail in the case histories and course descriptions in Chapter 4.) For the purpose of supporting this particular conclusion, the researcher has listed 114 discreet actions, methods, techniques and beliefs which she found being implemented in both the course workshops and the classrooms of the teacher/graduates.

The researcher then counted the number of teacher/graduates in the sample whom she found practicing these discreet actions, methods, techniques, and beliefs. These are listed under each course heading. (The

exception to this is the mathematics course, in which the researcher was not a participant/observer. The listing under the mathematics course was compiled from the classroom observations and teacher interviews only.) This supporting evidence for the conclusion is given in Table 7. (The relevant teacher characteristics identified by Bussis and Chittenden [1970] are indicated at the top of each list.)

In summary, evidence has been given above from two sources--the teacher's remarks in interviews and the observer's findings in their classrooms. These findings clearly support the conclusion that the methods courses in the Interdisciplinary/Integrated Day Program made a significant and valuable impact on the later classroom practices of its teacher/graduates.

What about the student teaching experience? Was it as valuable for these teacher trainees as for others in other teacher training programs (as shown in past studies)?

Conclusions About Student Teaching as Valuable, and Other Things Valued

The findings regarding student teaching in the present study are similar in some respects to past studies and different in others. Like past research (Feiman-Nemser, 1982; Lortie, 1975), all of the teacher/graduates interviewed said that their student teaching experience was the most valuable part of their teacher training. One teacher expressed well the attitude indicated by all. She said that it's "when you are actually in the classroom that you learn the most".

TABLE 7
EVIDENCE TO SUPPORT CONCLUSION THAT METHODS COURSES
CONTRIBUTED TO TEACHER/GRADUATES'
CLASSROOM PRACTICES

SPECIFIC METHODS/BELIEFS OBSERVED AS TAUGHT IN COURSE WORKSHOPS	TEACHERS/SAMPLE FOUND DOING THIS IN CLASSROOM
<u>SCIENCE METHODS COURSE</u>	
<u>Provisioning, Instruction:</u>	
Evidence of specific science studies like ones done in course (batteries and bulbs, etc.)	100%
Exploration of environment (RE: science interests)	100%
Process science, inquiry, hands-on projects	100%
Trips into community (RE: science interests)	70%
Used natural materials/children brought in	100%
Teacher collected hands-on materials	100%
<u>SOCIAL STUDIES METHODS COURSE</u>	
<u>Provisioning, Instruction:</u>	
Units and projects integrating curriculum around a theme	100%
Children's interests: additional mini- projects, individual research activities	90%
Many sources for curriculum, not just textbooks	100%
Social studies field trips into community	40%
Hands-on activities, learning by doing	100%
Multicultural studies, other countries	80%
Integrated with the Multi-Arts	100%
Integrated with reading children's literature	60%
Cooperative learning, small group investigation model, with report to class	90%
Major culmination activities	80%
Different activities at same time in classroom (at some time of day or week)	100%

Continued

TABLE 7--Continued

SPECIFIC METHODS/BELIEFS OBSERVED AS TAUGHT IN COURSE WORKSHOPS	TEACHERS/SAMPLE FOUND DOING THIS IN CLASSROOM
<u>READING AND LANGUAGE ARTS METHODS COURSE</u>	
<u>Provisioning, Instruction:</u>	
Evidence of specific activities like ones teachers did in course	100%
Language/Experience approach/read own writing as part of reading program	90%
Basal readers/workbooks for skills (different degrees)	70%
Individualized reading program	70%
Children's Literature as part of reading program:	100%
(1) Used only literature for reading, as well as own writing	30%
(2) Combination program: much literature, some basal, own writing	50%
(3) Emphasis on basals, due to school policies, occasional novel studied	20%
Classroom library:	
(1) Had large collection, brought in from town libraries by teacher	70%
(2) Collected own library of children's books	100%
Teacher held individual conferences with children	90%
Teacher read aloud to class every day (professor modeled in every workshop)	100%
Read poetry, children wrote poetry	100%
Creative "process writing" and making own books--regular time in schedule	90%
Sustained silent reading--regular time	70%
Spelling words taken from children's own writing, social studies, science interests	70%

Continued

TABLE 7--Continued

SPECIFIC METHODS/BELIEFS OBSERVED AS TAUGHT IN COURSE WORKSHOPS	TEACHERS/SAMPLE FOUND DOING THIS IN CLASSROOM
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MULTI-ARTS METHODS COURSEProvisioning, Instruction:

Arts integrated in projects with social studies, science, reading, writing, math	100%
Art Learning Center--Specific area in classroom	70%
Great variety of art materials in classroom	100%
Teacher volunteered idea; process is important	60%
Materials readily available on open shelves	100%
Evidence of specific use of techniques done by teacher in art workshop course:	100%
● Made puppets, did shows	50%
● Papier mache	50%
● Book binding	40%
● Made models	50%
● Fish prints	20%
● Print making	10%
● Singing in classroom	60%
● Mobiles	20%
● Painting	100%
● Clay	40%
● Dancing	30%
● Drama	50%
● Drawing	100%

(All schools but one had a music specialist and an art specialist, but classroom teacher did the above.)

MATHEMATICS METHODS COURSEProvisioning, Instruction:

Children using manipulative materials for concept development	90%
Shelves full of manipulative materials in room	90%
Teacher made/collected own supply of manipulatives	90%

Continued

TABLE 7--Continued

SPECIFIC METHODS/BELIEFS OBSERVED AS TAUGHT IN COURSE WORKSHOPS	TEACHERS/SAMPLE FOUND DOING THIS IN CLASSROOM
<u>MATHEMATICS METHODS COURSE (Continued)</u>	
<u>Provisioning, Instruction:</u>	
Individualized teaching of math	90%
Many different math activities simultaneously	90%
Children on different levels at same time	90%
Math integrated with other subjects in projects	70%
Math textbook used exclusively--school policy	10%
Math textbook used with manipulatives, individually	90%
Teacher introduced concept, gave assignments, then walked around classroom, helping individuals	100%
<u>CURRICULUM METHODS COURSE</u>	
<u>Instruction:</u>	
Integrated curriculum projects	100%
Teacher focuses on individual learners	90%
Cooperative learning--children interact, help each other (in some part of day)	100%
Children take responsibility for assignments	80%
Mailbox system for returning written work	60%
Self-directed learning (in varying degrees)	80%
Direct teaching as needed	100%
Providing for various learning styles (sometimes)	80%
Children responsible for classroom routines	100%
Teacher moves about room, helping individuals and small groups as needed	100%
Role of teacher as facilitator, enabler, guide	80%
<u>Provisioning:</u>	
Daily schedule in large blocks of time	70%
Classroom space organization:	
(1) Learning centers in room (from 2 to 6)	100%
(2) Desks or tables grouped together, not rows	90%
(3) Meeting area in classroom	90%

Continued

TABLE 7--Continued

SPECIFIC METHODS/BELIEFS OBSERVED AS TAUGHT IN COURSE WORKSHOPS	TEACHERS/SAMPLE FOUND DOING THIS IN CLASSROOM
<u>CURRICULUM METHODS COURSE (Continued)</u>	
<u>Provisioning:</u>	
Materials--a wide variety of hands-on materials, as well as published materials	100%
<u>Diagnosis, Evaluation:</u>	
Conferences between teacher and individual child	80%
Observation of children as diagnostic tool	80%
Checklists	90%
Notes jotted daily, written narratives on child	60%
Tests when appropriate or as school policies say	100%
Teacher keeps samples of children's work	30%
Regular parent conferences--school policy	100%
Report cards or some printed form of report	90%
<u>Seeking Professional Growth of the Teacher:</u>	
Teacher seeks and builds collegiality with other teacher(s) in school	100%
Teacher seeks others for team teaching to plan curriculum projects for two classes	80%
Teacher sought outside courses, workshops, and professional meetings (three beginning teachers did not, that year)	70%
Teacher seeks community resources for students	70%
* <u>LEARNING THEORY (Philosophy) of the Integrated Day/ Interdisciplinary Program</u>	
<u>Ideas About Children and the Process of Learning</u>	
<u>Self Perception of the Teacher:</u>	
*Teacher's <u>discovery of personal meaning</u>	100%

Continued

TABLE 7--Continued

SPECIFIC METHODS/BELIEFS OBSERVED AS TAUGHT IN COURSE WORKSHOPS	TEACHERS/SAMPLE FOUND DOING THIS IN CLASSROOM
* <u>LEARNING THEORY</u> (Philosophy) of the Integrated Day/ Interdisciplinary Program (Continued)	
<u>Self Perception of the Teacher:</u>	
*Teacher separated from own early schooling and socialization (traditional)	100%
<u>Provisioning, Instruction:</u>	
*Children's <u>active involvement</u> in solving real problems	100%
* <u>Shared decision-making</u> , choices provided for children (in varying degrees)	90%
*Children's <u>self-direction</u> provided for	80%
*Children's <u>interests, self-initiated</u> mini-projects encouraged	80%
*Attention to <u>skill acquisition:</u>	100%
(1) Skills taught in small ad-hoc groups as needed	80%
(2) Skills taught in context of activities	80%
(3) Skills taught with strong textbook emphasis (school policy)	40%
* <u>Feedback and support</u> given to children	100%
*Teacher aware that <u>growth takes time</u>	90%
<u>Humaneness:</u>	
*Teacher <u>builds on strengths</u> of children	100%
*Teacher's concern-- <u>meet needs</u> of children:	100%
(1) Perceives children as individuals	100%
(2) Concern for whole child's development (intellectual, emotional, social, physical, moral, aesthetic)	100%
(3) Children's good relationships fostered in classroom	100%
(4) Both children's and teacher's feelings have a place in the classroom	100%
(5) Children move freely about the classroom	100%
(6) Respect: Teacher respects children, builds child-to-child respect	100%

Continued

TABLE 7--Continued

SPECIFIC METHODS/BELIEFS OBSERVED AS TAUGHT IN COURSE WORKSHOPS	TEACHERS/SAMPLE FOUND DOING THIS IN CLASSROOM
* <u>LEARNING THEORY</u> (Philosophy) of the Integrated Day/ Interdisciplinary Program (Continued)	
<u>Humaneness:</u>	
(7) Warmth of teacher evident--a caring atmosphere	100%
(8) Honesty of Encounters: Teacher presents self as real person, sees children as people; admits shortcomings	100%
(9) Teacher builds security in children:	100%
(a) Sense of trust mentioned	50%
(b) Other traits mentioned (feel good about selves, confidence, emphasis on success)	70%
(10) Sense of community built by teacher (concerned with community, caring, cooperation, sharing ideas, self-worth, belonging)	100%

*RESEARCHER'S NOTE: The above "Learning Theory" is modeled and practiced in all of the methods courses in the Integrated Day/Interdisciplinary Program. It is more articulated and discussed in the curriculum course; hence, it is placed here in this table.

The teacher/graduates' interview findings also show that they appreciated the support of the "Resource Person" (or Supervisor) from the Interdisciplinary Program at the University of Massachusetts. In this program, as described in the findings in Chapter 4, the supervisors visit and observe the student teachers on site once a week. They give constructive feedback also in these visits. As one teacher/graduate expressed it, many thought the supervisor they had "was very good and came often to the classroom". Thus, the findings on the teacher/graduates in this study concur with many past studies (Feiman-Nemser, 1982). They all thought that the student teaching experience was the most valuable part of their teacher training.

However, there are added findings that are unlike most other studies. The teacher/graduates in the Interdisciplinary Program also thought that some aspects of the methods courses were also valuable. These findings are given at the end of Chapter 4 in the section entitled "Recapitulation: Teacher/Graduates' Views of the Interdisciplinary/Integrated Day Program". The evidence shows that there were three main things that the teacher/graduates described as valuable about the methods courses: (1) The hands-on nature of the methods courses was valuable to all of them; (2) six out of ten said the way the program was organized was valuable--with the workshop courses running concurrent with two days a week spent in a children's classroom (prepracticum); and (3) all of the teacher/graduates who were interviewed talked about the great value of the community building and collegiality in the courses.

The above findings point to the conclusion that the teacher/graduates from the Interdisciplinary/Integrated Day Program found both the student teaching experience and the methods courses to be valuable to their future teaching, with the student teaching cited as being "most valuable".

Conclusions Regarding Six Significant Features of the Interdisciplinary Program

What enabled the teacher/graduates to change to new methods than they had known in the past and to use the methods taught in their courses, in their future classrooms? The findings cited above (what the teacher/graduates valued about their courses) give us clues as to why the methods courses have such a unique impact on the future work of the teachers in their classrooms. We can now explore this question of what were the significant features of the teacher training program that enabled them to apply the methods and beliefs they had learned in the courses. We can discern possible answers to this question by exploring more carefully the findings in the case studies about the aspects of the teacher training program that the trainees valued the most: the organization, the hands-on learning, and the sense of community.

We are informed by the teacher/graduates' own statements in the interviews. These findings indicate that six conclusions can be drawn about the significant features of the teacher education program that enabled the teachers to implement the methods taught in the courses. The six significant features are: the organization, the teaching strategies of the professors, the learning process of the trainees, the type

of assignments given, the sense of community and collegiality built, and the support of individuals in developing their own teaching styles. Findings relevant to these conclusions are given below.

Conclusion Regarding Organization of the Program as Significant

The findings lead to the conclusion that the particular organization of the course of study had significant value for the teacher/graduates in making the methods courses practical in their future teaching. In order to understand this conclusion, a brief review of the program organization is helpful. The five methods courses are workshops, each given for two and one-half hours every week for one semester. The course workshops are grouped together on two and one-half days. The other two days (now extended to two and one-half days) are spent in children's elementary school classrooms. This long prepracticum, concurrent with the courses, is used by the professors in two ways:

(1) They guide the students in the analysis of the teaching/learning that they see in the prepracticum classrooms, and (2) they give assignments related to the children's classrooms (Provisioning, Instruction).

Many students mentioned this feature of the program as significant to them. One said, "I liked the whole way it was organized. . . . One of the biggest strengths was that we were in class with kids a lot, in the pre-intern before we went to student teaching." Another referred to the reading methods and integrated curriculum projects. She said, "In the children's classrooms . . . you could see it happening, at the same time you talked and thought about it [in the courses]."

Conclusion Regarding the Process of Learning
in the Methods Courses as Significant

The findings lead to the conclusion that the process of learning for the teacher trainees in the methods courses was through hands-on experiences with learning materials, and this experiential nature of the methods courses was significant for their ability to practice the methods in their future teaching. All of the teacher/graduates in the sample emphasized that the hands-on learning in the methods courses had been helpful to them. All said that this experiential learning had enabled them to use methods with hands-on teaching materials for the children in their classrooms now. Many such statements of teachers are given in the case studies and in the "Recapitulation: Teacher/Graduates' Views of the Interdisciplinary/Integrated Day Program" section at the end of Chapter 4. Those, plus the following additional statements, support this conclusion.

"It wasn't just lectures. It involved doing instead of just being told," said one. He explained further, "In the workshops, we would start off with an activity, then discuss what happened, how we felt when we did it, and ways we could use it." He added, "Now, in my classroom, I do hands-on. I try to pull more activity in." Another said, "We were doing hands-on discovery methods. In order to teach someone, you need to go through the process yourself as a learner." She thought that "it gives you more insight into how children learn". (This indicates Provisioning, Instruction, and Ideas About Children and the Process of Learning, as identified by Bussis and Chittenden [1970].)

Conclusion Regarding the Teaching Strategies of the Professors as Significant

The evidence supports the conclusion that the teaching strategies of the professors were a conscious modeling of the teacher's role in an interdisciplinary elementary school classroom, and this had great significance for the teacher/graduates in their later using these teaching methods in their work. The findings to support this conclusion are seen in the teachers' own remarks about the methods courses, as listed in the "Recapitulation: Teacher/Graduates' Views of the Interdisciplinary/Integrated Day Program" section at the end of Chapter 4. Those statements, plus the following additional examples, are evidence for this conclusion. "The modeling by the professors meant that this is what should be happening in elementary classrooms." Another said, "I was aware of the professor's modeling. I saw management techniques. I use those techniques in my teaching now" (Provisioning, Instruction).

Conclusion Regarding the Assignments as Significant

The data leads to the conclusion that the hands-on, experiential assignments had significance for the teacher/graduates in their later ability to use the methods in their teaching. After learning themselves as though they were the elementary students, from professors who modeled the teaching methods, the college students then had specific assignments to plan and carry out similar mini-lessons. They often first "did small lessons and taught each other", as one student said. Then a major assignment in each course was to do a lesson plan and teach the lesson to a small group of children in the prepracticum, with the University

supervisor observing the teacher trainee and giving feedback immediately afterwards. This experience was evaluated by the student and reported to the professor of the methods course.

A major experiential assignment was the "Integrated Day" Day. Approximately six weeks of curriculum course workshops were given over to planning for it. (This project is described in Chapter 4 in the account of the curriculum course.) The teacher candidates team-taught and planned a whole day of teaching in every curriculum area for a specific class of children, integrating the curriculum around a theme (Provisioning, Instruction).

The significance of this experiential learning in assignments for the teacher/graduates is seen in their own remarks. The findings in the interviews support the conclusion that the assignments were significant. "We were required to do a reading evaluation, to do an art project with kids," said one teacher [emphasis his]. "We'd hear about something and see some ideas [in the courses] and then get a chance to use it" with children, he explained. Many similar remarks by teacher/graduates can be found in the "Recapitulation: Teacher/Graduates' Views of the Interdisciplinary/Integrated Day Program" section of the case studies at the end of Chapter 4.

Conclusion Relating to Collegiality as Significant

The data supports the conclusion that there was an intensive and successful effort on the part of the professors to build a sense of community and collegiality among the teacher trainees and that this had significance for the teacher/graduates later in their own elementary

classrooms and schools. Again, the findings regarding community and collegiality in the teacher education program are similar in ways and different in other ways from past research. The significance of this conclusion can best be appreciated when seen against a background of prior research. Lortie (1975) says there is little collegiality among the faculty of most traditional schools in the United States today. On the other hand, Raywid (1984b) and others have found that teacher collegiality is an important part of the developmental/interdisciplinary schools in schools of choice systems. Bussis and Chittenden (1970) say that collegiality is one of the ways of Seeking Professional Growth, a characteristic of developmentally-oriented teachers. Raywid (1984b) says that schools of education must find ways to teaching collegiality to teacher candidates, since most of them have been accustomed to learning alone in their early schooling and this pattern tends to be perpetuated when they become teachers.

Finding a way to develop collegiality has been a problem. Lortie (1975) has studied the problem. He refers to research he had done earlier on other professions. He had found that collegiality had been built for lawyers and doctors by "a shared ordeal" (p. 75) in their training programs. He concludes that "courses in education are not 'tough' enough to lead to collective strategies and deep sharing among students" (p. 74). Therefore, for teachers, he says, "the entry to work is person by person, each working largely in isolation from others" (p. 74). To solve this problem, Lortie calls for "some sense of genuine collegiality--some sharing of technical problems and alternative solutions" (p. 66) for teachers in training programs.

In this respect, the findings in the present study are in agreement with Lortie's findings. The "Integrated Day" Day experience may have been a kind of "shared ordeal" (p. 75) for the teacher trainees. One teacher/graduate said of the assignment, "It was hard work, but very valuable. It was a good first taste of planning what you're going to do with a unit." Indeed, the planning for this day by teams of students was intensive and challenging work over a period of several weeks. They were to have full charge of a children's classroom for a whole day and be observed by all their professors while they taught the children. All of the teacher/graduates in the sample mentioned the "Integrated Day" Day as having been significant for them. Also, the teacher trainees did not consider the methods courses easy. One commented, "They were the first college courses where I had to work and keep up. In all my other years in college, it was easy for me to get by."

In the present study, however, the findings show that there was an added element to building the sense of community and collegiality among the college students. It was more than hard work and shared ordeals. There was shared decision-making, shared ideas about teaching, and positive support for each teacher trainee. In other words, the professors modeled the learning theory they were teaching in the methods courses: "Build on strengths . . . meet students' needs . . . give feedback and support . . . [foster] shared decision making" (Hruska, 1978).

Indeed, on examining the findings in the program case studies and the teacher/graduate interviews, one finds three aspects of the program that may be significant features in building the sense of community and collegiality among the teacher candidates: (1) The sharing of activities

and ideas (some of this "hard work"), (2) the professor's modeling the Humaneness of the learning theory, and (3) the overall organization of the program itself.

First, we will mention certain aspects of the organization of the program that contribute to the sense of community. The course of study is limited to approximately 25 students a semester who go through all the methods courses together in one semester, as a group similar to a teacher's elementary classroom group. These 25 students also share several days of special activities, such as: (1) There is a day and a half of getting-to-know-you activities in which all the professors and graduate assistants participate, before the courses start; (2) the entire group usually goes on an overnight to a nature center (also with the faculty and staff participating); (3) they put on a play together; (4) there is, as mentioned above, the "Integrated Day" Day experience, which all faculty observe and evaluate on special days; and (5) there is always a wrap-up day at the end, with a pot-luck lunch.

In addition to the evidence given in Chapter 4, the researcher adds illustrative remarks of the teacher/graduates from the interviews below, to support this conclusion. As for the building of community by sharing activities and different points of view, all of the teacher/graduates interviewed talked about sharing ideas (rather than sharing ordeals). One explained, "We did hands-on things . . . in the courses. And there were discussions about what we did and how children learn. . . . We shared what we did." Another teacher/graduate referred to the professors, saying, "There was a lot of energy that went into building that community group--doing a lot of projects together in small groups. The interaction

with other students was a real plus in the program." She said this had "modeled how to teach". It is clear from the findings in this study that the teacher trainees in the Interdisciplinary Program did not just take six separate methods courses; they shared in an intensive, carefully coordinated program of positive and shared experiences in learning and teaching.

The positive aspects of building this sense of community bring us to the third foundation mentioned above: the professor's modeling the Humaneness of the learning theory of the program, as a basis for building community. Several of the teacher/graduates in the sample talked about one of the program's basic tenets--"build on strengths". One said, "The professors told us our strengths and what to work on." Another said that there was, in the Integrated Day Program, "a real sense of togetherness and community." She added that the program gave her "a total affirmation of who I was as a person. I really felt very supported." The findings of this study show that the teacher/graduates linked the sense of community with the positive appreciation of individual's strengths. (Bussis and Chittenden [1970] defined Humaneness as Respect for Persons, Warmth, and Honesty of Encounters, and said these were essential characteristics of developmentally-oriented teachers.)

To be a part of this community building and collegiality in the teacher education program was clearly a significant and valued experience for all of the teacher/graduates interviewed, and it carried over into their later work in classrooms and schools. One said that the professors had "built community for us, so I know how to do it with children". This attitude was found in every teacher/graduate's classroom

observed. One, when discussing community building, said that her students had learned "to be cooperative and positive with each other".

Another teacher/graduate said her students had grown in self confidence that year. "They feel a part of that community--they feel valued."

These findings indicate that, for the graduates of the Interdisciplinary/Integrated Day Program, the sense of community means not only shared "hard work", but also a shared appreciation for each other as worthy persons and a positive sense of self as a member of that community.

The findings in this study reveal another outcome of the community building and collegiality in the methods courses. Apparently, the teacher/graduates had so many positive experiences working with their peers in the methods courses that they got the idea while still in college that you do not need to work alone in any school. The findings reported in the case studies in Chapter 4 show that all of the teacher/graduates reached out to establish collegiality with another teacher in their schools. This happened even in traditional schools where the other teachers were described as "sequestered in their classrooms"--except for the one this teacher had sought out to share ideas with. One teacher in a traditional school was asked (in the interview) why she thought the courses in the Interdisciplinary/Integrated Day Program were taught as workshops and not lecture courses, as most college courses are. She replied, "Because teaching is not a loner job. You have to be able to bounce ideas off other people, or your teaching doesn't grow." Yet she was also working in a school where she admitted that most teachers worked alone. All of the teacher/graduates interviewed in this study talked about their experience of sharing ideas with the others in the

courses and, now, with one or more teachers in the schools where they worked. The findings in this study indicate that they did not enter teaching feeling "in isolation from others" (Lortie, 1975, p. 77) as many teachers have reported in past research.

Therefore, all these findings support the conclusion that a significant feature of the Interdisciplinary/Integrated Day Program was the building of a sense of community and collegiality among its teacher trainees, and this learning carried over into their later work as elementary school teachers. The importance of this finding is seen when one considers Goodlad's recommendations for improving our schools. In his book, A Place Called School (1982), he says that change in schools must start with teachers, and they need more collegiality, in order to share ideas and support each other in trying new ideas in their teaching. Also, collegiality indicates an essential attitude in Seeking Professional Growth (Bussis & Chittenden, 1970).

Conclusion on Support of Individual Teaching Styles as Significant

The data in this study give evidence for the conclusion that a significant feature of the Interdisciplinary Program was that the professors supported each teacher trainee in finding his or her own best methods of teaching, and this development of individual teaching style gave a sense of ownership that enabled the teacher/graduates to use the methods in their later classroom teaching. The findings to support this conclusion come from the remarks of the teacher/graduates themselves in the interviews. One of the professors said, "They gave us the opportunity to find out what kind of teachers we wanted to be--what style we

had--to be individuals. They gave us confidence." She added, "The principal said I could use my style. I got my style in the Integrated Day Program." Unfortunately, not every teacher in a traditional school had such a positive experience. One was told by the principal, "Your ideas will not work in this school; put them aside altogether." But the teacher/graduate remarked, "I couldn't do that--they were me." Another teacher/graduate said of the Interdisciplinary teacher education program, "I was validated there. I picked up pieces from the different teachers. I kind of picked and chose and put together my own way of teaching." When one teacher/graduate was asked to start the first school of choice in a large city in Maine, she got out all her notes from seven years before, when she had attended the Integrated Day Program for her teacher preparation. She studied her notes all summer. Now, after working in a traditional school for many years, she was being asked to do something quite different--to set up a completely developmental/interdisciplinary program as a school-within-a-school, to be the first such program in the city school system. She realized, "It became subconscious . . . I do something with children and then I say, 'Oh yes, we did that' in the courses." She talked about the things she had learned in the Integrated Day Program and applied seven years later in this new venture. She said, "I think the best thing for me was to know that it could be done. I knew, somewhere down deep, that I could organize it."

Conclusion on New Methods of Teacher Preparation
Evident in the Interdisciplinary Program

The evidence in Chapter 4 leads to the conclusion that the Interdisciplinary Program is doing much of what educational analysts say are needed changes in teacher preparation programs. It has been said that teachers in developmental/interdisciplinary schools, or non-traditional approaches in schools of choice, need a quite different type of teacher education program from conventional courses of study for teachers (Raywid, 1984b). Many changes in teacher preparation have been advised by educational analysts in order for teacher education to more suitably match our new knowledge about how teachers learn and the particular needs of those who aspire to a developmental-interaction approach to teaching and learning (Combs, 1965; Feiman-Nemser, 1982; Goodlad, 1982; Lortie, 1975; and Raywid, 1984b). These needed changes are described in detail in Chapter 2. Reviewing these recommendations, and the findings in Chapter 4, we conclude that 38 out of 42 of the specific "changes needed" have been implemented in the Interdisciplinary/Integrated Day Program. We indicate this by summarizing here the 38 "changes needed" items in Chapter 2 which were seen in the program, as follows.

The findings in the present study suggest that the program does challenge the early associations and memories (presocialization) of the teacher candidates (Feiman-Nemser, 1982; Lortie, 1975). The course of study appears to have found effective ways to separate them from their presocialization in traditional schools, so that they were able to put

into practice newer methods of teaching in their later classrooms (Goodlad, 1983; Lortie, 1975). The methods courses appear to have been practical and valuable to the teacher/graduates (Lortie, 1975; Sarason, 1982).

The findings of this study indicate that the Interdisciplinary Program does see each teacher candidate as a unique person (Barth, 1980; Combs et al., 1974). The program appears to have helped each teacher trainee find his or her own personal approach to teaching, own style of teaching, and individual "best methods" (Combs et al., 1974). A wide variety of methods are both taught in the courses and implemented later by the teacher/graduates in their elementary classrooms (Combs et al., 1974; Raywid, 1984b). Most of the teachers interviewed appeared to see the role of the teacher as facilitator, guide, enabler. All showed self perception regarding their teaching (Combs et al., 1974).

The findings indicate that the Interdisciplinary Program does create a need to know in the teacher trainees. The courses give real teaching assignments to be done by the trainees in real classrooms with real children. The teacher trainees spend a great deal of time in children's classrooms while taking the methods courses (Combs et al., 1974).

The findings indicate that the teacher candidates are given real responsibility in order to help them learn to be responsible. They are given autonomy and choices in the methods courses. They are supported in making their own decisions about planning curriculum (Combs et al., 1974; Raywid, 1984b). They are also helped to learn the process of shared decision making (Raywid, 1984b).

The findings indicate that the methods courses are experiential. The teacher candidates have the opportunity to learn in a new way--to learn themselves from materials (not just books) and from doing activities, from inquiry and process methods (Raywid, 1984b). They come to understand how children may learn best by doing. The teacher candidates are given new models of teaching, in the professor's modeling the methods (Feiman-Nemser, 1983). The trainees have an opportunity to try teaching mini-lessons with these methods right away, in the pre-practicum, while taking the methods courses.

The findings in this study indicate that the teacher candidates first learn by doing, then plan and carry out the integration of curriculum around a theme, in projects. They are taught to find curriculum from many sources, not just textbooks, and they begin to do this while still in the courses [i.e., for the "Integrated Day" Day project] (Raywid, 1984b). They learn to allow for children's interests in their curriculum planning; many did this in their classrooms (Raywid, 1984b).

The findings indicate that the teacher education program teaches observation techniques as a method of diagnosis and evaluation (Raywid, 1984b) and that many of the teacher/graduates used these methods: The program does emphasize evaluation by looking at process as well as product and many teacher/graduates had this approach. The program teaches candidates to use a variety of record keeping methods and many do this. The program teaches that the purpose of diagnosis and evaluation is to plan next steps for individuals. The program does teach that diagnosis is a part of instruction (Combs et al., 1974; Raywid, 1984b).

The findings show that the Interdisciplinary/Integrated Day Program does model how to build a sense of community. This carries over into the trainee's future classrooms. The teacher candidates do learn peer cooperation as college students in the courses. This collegiality appears to carry over into their future elementary teaching positions (Lortie, 1975; Raywid, 1984b).

The findings show that the teacher education program models humaneness. Each teacher candidate is valued as a person. In every methods course, there is the expression of warm acceptance of individuals and a personalized, caring community. The teacher education program creates a non-threatening climate in which each teacher candidate is supported. Each is encouraged in his or her discovery of personal meaning. Every methods course values and provides for the individual expression of ideas, the sharing of different points of view. All of the teacher/graduates saw children as individuals; they encouraged and valued their children's individual ways of learning and of expressing ideas (Bussis, Chittenden, & Amarel, 1976; Combs et al., 1974; Raywid, 1984b).

Findings show that the program does teach and model a specific learning theory which is based on perceptual psychology and child development (Hruska, 1978). Every teacher/graduate provided for the development of the whole child in his or her classroom activities--the emotional feelings, the social relationships, the physical needs, as well as the intellectual and academic activities (Raywid, 1984b). The program's philosophy became the teacher/graduates' philosophy; they often referred to their building on strengths, meeting the individual

needs of children, providing for active involvement in their learning, etc.

The findings of this study indicate that the Interdisciplinary Program has an admissions procedure which is selective in nature (Combs et al., 1974; Raywid, 1984b). The professors do understand that special qualities, understandings, insights and aptitudes are needed by teachers in a developmental and interdisciplinary classroom and that not all people can teach this way (Feiman-Nemser, 1983; Raywid, 1984b). The Interdisciplinary/Integrated Day Program has had the support of the administration of the School of Education at the University of Massachusetts (Raywid, 1984b).

Recommendations Resulting From the Present Study

Recommendations Concerning the Interdisciplinary Program

The above listings are from findings indicating that the Interdisciplinary/Integrated Day Program is implementing an impressive number of new approaches in teacher education as advised by educational analysts and outlined in Chapter 2.

However, there are additional recommendations by these same analysts that the findings did not show. Therefore, it is recommended that the program could consider adding to its teachings, as follows:

It is recommended that the program highlight the fact that the basic psychology of child development is, indeed, the basis of a developmental/interdisciplinary approach to teaching and learning

(Kohlberg, 1972). The Interdisciplinary Program does appear to model and teach well its learning theory, which is based on the work of the perceptual psychologists (Combs & Others, 1965). However, the relationship between the learning theory, child development, and the specific methods of teaching and learning needs to be pointed out to teacher trainees. Raywid (1984b) has said that although professors have assumed in the past that college students will connect their earliest pre-requisite courses in child development with their later methods courses, teacher trainees do not do this on their own. Raywid (1984b) suggests that these connections and foundations in child development be pointed out specifically in methods courses.

The findings of this study showed this same assumption. There was no mention of "child development" in the methods courses, although Piaget (1960) was mentioned occasionally. Only one teacher in the interviews mentioned "child development" as the basis for a decision she made. However, both the courses and the teacher/graduates' attitudes and practices do reveal an understanding and application of the teachings of child development. This only needs to be talked about in the courses, pointed out by the professors and thought about by the teacher candidates. If the child development basis of developmental/interaction methods were articulated in the courses, this might answer a need expressed by the teacher candidates interviewed. They need help with how to describe and justify this approach to teaching and learning in their contacts with both parents and principals. One said, "This is not standard knowledge. We need words to call it." The recommendation of this study is that the teacher education program call it the

"developmental-interaction" (Biber, Shapiro, & Wickens, 1971) approach to teaching/learning, as the educators at Bank Street College identify it. (See Chapter 1 on defining terms.)

Another recommendation is that the methods courses be related to the teacher trainees' past study of the history and philosophy of education. Granted that most "Introduction to Education" courses only have time for a brief overview of these subjects, a tie-in with the methods courses could be helpful to students. Again, it would reinforce their own discovery of what children are like and how they learn (which unfolds to them so beautifully in their own learning/observing in the methods workshops/prepracticum). The foundation of the developmental/interdisciplinary approach (in both the history of education and the knowledge of child development) needs to be articulated and tied into methods courses (Raywid, 1984b). This would help students explain to others what they are doing and why. Both Silberman (1970) and Raywid (1984b) say that teachers for years have failed to ask, "Why am I doing this?" The teacher/graduates interviewed appear to know why, but they indicated they need the right words to answer this question for principals and parents.

The findings of this study indicate that some of the teacher/graduates interviewed are aware that children have different styles of learning. Also, some mentioned teaching style. The researcher found that only the Mathematics Methods course stressed learning styles. It is recommended that more specific information be given on teaching/learning styles in the other methods courses. There is now much research available on specific styles of learning--there are kinesthetic

learners, auidial or visual learners, analytical or wholistic learners. Also, specific methods have been devised for reaching such learners in their own best aptitude areas. Furthermore, specific styles of teaching have been identified (Dunn & Dunn, 1978; Raywid, 1984b). In addition, seven distinct kinds of intelligence have been identified and described by Gardner (1983) in his landmark book, entitled Frames of Mind. He shows how individuals both learn and express ideas through their predominant kinds of intelligence. Teacher trainees could benefit from this kind of information in their efforts to understand and teach children as individuals.

Another recommendation by educational analysts is related to evaluation. Teacher candidates need to be helped to understand that there are two different kinds of evaluation. They need to be clear about what can be quantified and reported in test results and grades. In addition, they need to understand what kinds of learning call for qualitative evaluation in such methods as observations, note-taking, and narrative descriptions (Raywid, 1984b).

There were certain recommendations about the Interdisciplinary Program made by the teacher/graduates themselves. All in the sample were asked how they thought the program should change. Several recommendations were related to specific needs, such as: (1) More on how to organize an individualized reading program; (2) more on using the basal readers and handwriting; (3) more about peer conferencing, reading conferencing, and children's literature; and (4) more about testing.

Two thought they should be integrating the curriculum all day, like "Integrated Day" Day, and felt guilty at first. One recommended

that the program should "tell us it's O.K. not to integrate all the time". Like teachers in past research studies, many of the teacher/graduates thought the program did not give them enough on classroom management (Lortie, 1975). They wanted more information on "how to organize the day, the week, how to set up the classroom physically".

Several teachers, talking about their first year of teaching in the interviews for the present study, had different reactions to the amount and the type of things they had to learn on the job. Some blamed themselves for felt needs or lacks; several blamed the program; and one cheerful teacher/graduate said, "I've found out that you sort of go on learning." A veteran teacher/graduate of six years in an excellent developmental/interdisciplinary school, said she had come to see that two things must be learned on the job--content and classroom management. She said, "Now, looking back, I'm glad the Interdisciplinary Program had the focus it did--more process than content oriented."

Therefore, one of the recommendations of this study is that the professors in this teacher education program--and, indeed, all teacher education programs--tell the teacher candidates that they are supposed to learn on the job. They should be informed about the research on the five stages of teacher learning (socialization into the profession) and that three of them happen after graduation, on the job. They should be made aware that they are going to learn from teaching, and that this is the way all teachers learn (Feiman-Nemser, 1982). And, yes, there are certain things that can only be learned on the job. Then, perhaps, this will not come as such a surprise. Before they graduate, teacher candidates should have specific information about learning on the job. There

are now available several ethnographic studies about beginning teachers' experiences in such books as Ryan's Don't Smile Until Christmas: Accounts of the First Year of Teaching (1970). The study of this information should be an essential part of teacher training.

This brings us to the recommendation about where the teacher/graduates go to try their wings in their first teaching jobs. The teacher/graduates' statements about their difficulties in traditional school settings are given in the "Recapitulation: Teacher/Graduates' Views of the Interdisciplinary/Integrated Day Program" section at the end of Chapter 4. Typical of their attitudes were the following. A beginning teacher said, "And we go in so really unprepared--you know, so filled with so many ideas, so enthusiastic. But then, there's going to be a struggle." She was in a traditional school where the principal did not understand the methods she had been taught in the Interdisciplinary Program. The differences in school settings were described well by an experienced teacher (who taught in a developmental/interdisciplinary school): "It's a different method to take a theme and develop it [integrating curriculum areas] from the traditional method of teaching separate subjects from textbooks." She said that traditional schools have set things and one way to teach them. On the other hand, developmental/interdisciplinary schools "encourage you to look at individual children, find many ways to teach individuals, and have flexibility and variety in methods".

Therefore, a major recommendation of this study is that the professors in the Interdisciplinary teacher education program set up a network to help both their teacher candidates and their graduates find jobs

in school settings that are developmental/interdisciplinary in their approach to teaching and learning. This could be done by writing letters to school systems having such schools in a "schools of choice" system and letting them know that this program is preparing teachers for the nontraditional schools in their systems. Several thousand such schools of choice (in public school systems) have been identified nationwide in two recent surveys. Fleming and Blank (1982) surveyed magnet schools; Raywid (1982) did a survey of optional nontraditional schools.

First, the teacher education program could establish a network and maintain a contact with developmental/interdisciplinary types of schools and with the central employment offices of public school systems having schools of choice across the nation. Then the teacher candidates each year could be encouraged to apply for jobs in those schools and systems.

One teacher/graduate said in her interview for this study, "We are never made aware of what is going on in education now. . . . We are never really made aware that Integrated day doesn't exist in three-quarters of the schools." The recommendation of this study is that the teacher trainees are not only made aware of this, but also are told about the "schools of choice" movement and helped to find the places where a developmental/interdisciplinary approach to teaching and learning is really going on today. In many schools nationwide, such teachers are now needed, wanted, welcomed. Indeed, the number of schools of choice systems should increase in the future because of increasing interest in the press recently. A network is needed to connect the Interdisciplinary teacher education program and its teacher/graduates with teaching positions in these schools. Also, an active network could

provide support and contacts for teacher/graduates in the field.

Through a network, the program could help them over the hurdles in those challenging first years of teaching; the graduates could be a help to each other through a network. It could support their learning from teaching in the years to come.

A further recommendation is related to replicating the model of teacher education described in this dissertation, the Interdisciplinary/Integrated Day Program at the University of Massachusetts. The success of a teacher education program should be measured in its direct relationship--specific outcomes--found in the classroom teaching practices of its teacher/graduates. In other words, if "the proof is in the pudding", then this particular teacher education program can be considered highly successful and should be replicated in this and other schools of education.

As described in Chapter 1, this particular undergraduate (Interdisciplinary) program has been used as a laboratory model for training graduate assistants (Ed.D. candidates in the Integrated Day Program) in how to model these methods and teach teacher trainees this way, as future professors. Therefore, the undergraduate Interdisciplinary Program has been given only once a semester to 25 students in the courses and 25 in student teaching.

If the program were taken as a model to replicate at this and other universities, it is recommended that the program be expanded, but only by having similar groups of 25 each go through a set of similar workshop courses together. Thus, two basic and important features of the program--the community building/collegiality and the individualizing and

personalizing of each teacher trainee's learning and teaching styles-- could be maintained. Each group of 25 students could have at least two professors and a team of graduate assistants as leaders of their particular program. Each group of 25 could have their own orientation days and "Integrated Day" Days, etc., as well as their own workshop courses. Elementary schools are set up this way; why couldn't schools of education be organized this way?

A program in which college students learn together over time in groups of 30 is described by Combs and others (1974). In that particular university's school of education, there were several hundred undergraduate college students, all going through the teacher education program in groups of 30. There, the 30 were a sort of "homeroom" group over two years; they went to different courses over that time.

However, the findings of this study show that the totality of the intensively shared learning/teaching experience (five workshop courses together in one semester for the group of 25) has had great significance for the sample of the teacher/graduates from the Interdisciplinary/Integrated Day Program at the University of Massachusetts. Therefore, it is recommended that the Interdisciplinary Program be replicated at this and other schools of education by having several different groups of 25 teacher candidates go through their own set of course workshops and other program activities together simultaneously each semester. With this plan, all the significant features of the Interdisciplinary/Integrated Day Program could be maintained while replicating the program. This and other schools of education could offer such programs to increasing numbers of teacher candidates. The demand for teachers suitable for

the developmental/interdisciplinary approach to learning and teaching will increase in the near future as more public schools of choice are established nationwide.

Recommendations for Future Research

The present study indicates directions for future inquiry and research in teacher education. First, the sample of teacher/graduates in the present study is small. The follow-up aspects of the study could be replicated with a greater number of classroom teachers who are graduates of the program and are now teaching in more areas of the United States.

Another type of study would also be of interest, focusing on the prepracticum, the student teaching semester, and the supervisory system that is used in the Interdisciplinary/Integrated Day Program. The present study indicates that the large amount of time spent in elementary classrooms concurrent with the courses had significance for students. Also, the guidance given the teacher candidates by both professors and Resource Persons (Supervisors) who visited their prepracticum and practicum sites had significance for them. The ways in which they are helped to process their practical experience in classrooms would be of interest. The basis of the Interdisciplinary/Integrated Day's approach to supervision in the British Advisory System and the methods of Clinical Supervision would be relevant to such a study of teacher candidate's learning experiences.

Another way of studying the eight characteristics and roles of teachers identified by Bussis and Chittenden (1970) would be of interest

to teacher educators. Marshall (1981) has pointed out that we need to study each characteristic separately over a wide population. This would help us to identify the many ways that teachers manifest these roles as individuals. The same thing could be said of a teacher education program. A researcher could take one of the characteristics and follow the ways it is fostered (modeled by professors, practiced by teacher trainees) in a group of methods courses. Marshall says that the research in the 1970s on developmental-interaction (or open) education was inconsistent, and this may be attributed to the fact that teachers manifest these characteristics as individuals, in different ways and in different degrees. Therefore, Marshall says that we need to know more about the characteristics, if we are to have more accurate research on developmental classrooms.

Six significant features of the Interdisciplinary Program that enabled its teacher/graduates to implement the methods taught were identified in the present study. Taking these six features as a framework, a detailed study could be done of each methods course, documenting its content and conduct. Such studies could also have a follow-up component, investigating the more specific ways the teacher/graduates teach the contents of the course, such as science, or reading and language arts. The present study indicates that the methods courses of the Interdisciplinary/Integrated Day Program have had an unusually successful impact on the future classroom practices of their teacher trainees. Such courses bear further study; this information would be of benefit to the field of teacher education.

Another question is raised by the present study. For many years, educational analysts have said that teachers teach the way they were taught as children, not the way they were taught to teach in college (Combs et al., 1974; Lortie, 1975). The present study found other evidence; the teachers taught the way they were taught in the methods courses in the Interdisciplinary/Integrated Day Program (not the way they were taught as children for 90% of the sample).

It is important to note, however, that the teacher candidates in this study also learned in new ways while taking these particular methods courses. This finding supports the contentions of those educators who have studied learning styles and teaching styles. They believe that teachers teach the way they themselves learn best, not the way they have been taught (Barbe & Swassing, 1979). Indeed, the Interdisciplinary Program presented both approaches to teachers: they both re-learned and were re-taught in the same new methods. Perhaps the idea could be investigated that teachers can learn new methods most effectively when attention is given to both needs: how they are taught and how they are given the opportunity to learn in new ways. As one of the teacher/graduates in the sample said, "I appreciated the opportunity to learn that way, in order to understand how to teach that way."

APPENDICES

APPENDIX A

ALUMNI SURVEY:

LETTER TO ALUMNI;
ALUMNI SURVEY -- INTEGRATED DAY PROGRAM



UNIVERSITY OF MASSACHUSETTS
AT AMHERST

School of Education

Furcolo Hall
Amherst, MA 01003

December 1, 1985

Dear

It's always delightful to have news of our graduates from the Integrated Day Program (including "INTEP", "Designs", and "Interdisciplinary" students--all names of our undergraduate program in the past). Some of you have either written or stopped by to see us when you were back at UMass.

But we really want to have a more organized way of keeping in touch with each one of you. So we are doing a small survey and we especially want your news to be included. Please take a moment to fill out the enclosed survey and drop it in the mail to us. (We've also enclosed an envelope that is all addressed and stamped and ready to go!)

We'll do a newsletter about the life and times of our graduates, and we'll send a copy to each of you who reply now. We look forward to hearing your news. Please send the enclosed survey back to us by December 15th. Thanks!

Sincerely,

A handwritten signature in cursive script that reads "Masha".

Masha Rudman
Co-Director, Integrated Day Program

A handwritten signature in cursive script that reads "Mason".

Mason Bunker
Co-Director, Integrated Day Program

ALUMNI SURVEY -- INTEGRATED DAY PROGRAM

SCHOOL OF EDUCATION
UNIVERSITY OF MASSACHUSETTS AT AMHERST

1. NAME: _____ Year Graduated: _____

2. I graduated from the following program:

- _____ "INTEP"
 _____ "DESIGNS"
 _____ "INTERDISCIPLINARY"

3. Since graduation, I have taught in grades _____
 for a total of _____ years.

4. Other work I have done: _____

- _____ I am not teaching now.
 _____ I am teaching this year.

5. The following describes my present teaching position, this year:

Grade Level:

- | | | |
|---------|------------------------------------|---------------------------|
| 1 _____ | a) Elementary School: _____ | Middle School: _____ |
| 2 _____ | b) Grouping Is: | |
| 3 _____ | Heterogeneous: _____ | Tracked: _____ |
| 4 _____ | c) Self-Contained Classroom: _____ | Team Teaching: _____ |
| 5 _____ | d) Single-Age Level: _____ | Multi-Age Grouping: _____ |
| 6 _____ | e) Public School: _____ | Private School: _____ |
| | f) Name of School: _____ | |
| | g) Address of School: _____ | |

6. My present school is described as:

- Traditional, Conventional
- Matching Teaching/Learning Styles
- Alternative; What special focus? _____

- Magnet; What special focus? _____

- School-Within-A-School; What focus? _____

- Open Education; Total school or a few classes? _____
- Montessori
- British Primary Model
- Other: _____

7. Other news of staff, family, career: _____

8. Current address, if different from one used on this mailing:

9. Current telephone number: Area Code ____/____-_____

APPENDIX B

INSTRUMENTS FOR RESEARCH:

CLASSROOM OBSERVATION RATING SCALE (WALBERG AND THOMAS);
TEACHER QUESTIONNAIRE (WALBERG AND THOMAS);
TEACHER ATTITUDE INVENTORY (HOY AND JALOVICK);
TEACHER INTERVIEW GUIDE

(WALBERG AND THOMAS)
CLASSROOM OBSERVATION RATING-SCALE

Developed for:

The Pilot Communities Program
Education Development Center
Newton, Massachusetts

By:

T D R Associates, Inc.
Newton, Massachusetts

Under:

U. S. Office of Education Contract
Number OEC-1-7-062805-3963
Amendment #10

March, 1971

1.	_____
2.	_____
3.	_____

School: _____

Classroom: _____

Teacher: _____

Observer: _____

OBSERVATION-RATING SCALE

	No Evidence	Weak Infrequent	Moderate Occasional	Strong Frequent Evidence
	1	2	3	4
1. Texts and materials are supplied in class sets so that all children may have their own.	1	2	3	4
2. Each child has a space for his/her personal storage and the major part of the classroom is organized for common use.	1	2	3	4
3. Materials are kept out of the way until they are distributed or used under the teacher's direction.	1	2	3	4
4. Many different activities go on simultaneously.	1	2	3	4
5. Children are expected to do their own work without getting help from other children.	1	2	3	4
6. Manipulative materials are supplied in great diversity and range, with little replication.	1	2	3	4

	<u>No Evidence</u>	<u>Weak Infrequent</u>	<u>Moderate Occasional</u>	<u>Strong Frequent Evidence</u>
7. Day is divided into large blocks of time within which children, with the teacher's help, determine their own routine.	1	2	3	4
8. Children work individually and in small groups at various activities.	1	2	3	4
9. Books are supplied in diversity and profusion (including reference, children's literature).	1	2	3	4
10. Children are not supposed to move about the room without asking permission.	1	2	3	4
11. Desks are arranged so that every child can see the blackboard or teacher from his/her desk.	1	2	3	4
12. The environment includes materials developed by the teacher.	1	2	3	4
13. Common environmental materials are provided.	1	2	3	4
14. Children may voluntarily make use of other areas of the building and school yard as part of their school time.	1	2	3	4
15. The program includes use of the neighborhood.	1	2	3	4
16. Children use "books" written by their classmates as part of their reading and reference materials.	1	2	3	4

	<u>No Evidence</u>	<u>Weak Infrequent</u>	<u>Moderate Occasional</u>	<u>Strong Frequent Evidence</u>
17. Teacher prefers that children not talk when they are supposed to be working.	1	2	3	4
18. Children voluntarily group and regroup themselves.	1	2	3	4
19. The environment includes materials developed or supplied by the children.	1	2	3	4
20. Teacher plans and schedules the children's activities through the day.	1	2	3	4
21. Teacher makes sure children use materials only as instructed.	1	2	3	4
22. Teacher groups children for lessons directed at specific needs.	1	2	3	4
23. Children work directly with manipulative materials.	1	2	3	4
24. Materials are readily accessible to children.	1	2	3	4
25. Teacher promotes a purposeful atmosphere by expecting and enabling children to use time productively and to value their work and learning.	1	2	3	4
26. Teacher uses test results to group children for reading and/or math.	1	2	3	4
27. Children expect the teacher to correct all their work.	1	2	3	4

	<u>No Evidence</u>	<u>Weak Infrequent</u>	<u>Moderate Occasional</u>	<u>Strong Frequent Evidence</u>
28. Teacher bases his/her instruction on each individual child and his/her interaction with materials and equipment.	1	2	3	4
29. Teacher gives children tests to find out what they know.	1	2	3	4
30. The emotional climate is warm and accepting.	1	2	3	4
31. The work children do is divided into subject matter areas.	1	2	3	4
32. The teacher's lessons and assignments are given to the class as a whole.	1	2	3	4
33. To obtain diagnostic information, the teacher closely observes the specific work or concern of a child and asks immediate, experience-based questions.	1	2	3	4
34. Teacher bases his/her instruction on curriculum guides or textbooks for the grade level he/she teaches.	1	2	3	4
35. Teacher keeps notes and writes individual stories of each child's intellectual, emotional, and physical development.	1	2	3	4
36. Teacher has children for a period of just one year.	1	2	3	4
37. The class operates within clear guidelines made explicit.	1	2	3	4

	<u>No Evidence</u>	<u>Weak Infrequent</u>	<u>Moderate Occasional</u>	<u>Strong Frequent Evidence</u>
38. Teacher takes care of dealing with conflicts and disruptive behavior without involving the group.	1	2	3	4
39. Children's activities, products, and ideas are reflected abundantly about the classroom.	1	2	3	4
40. The teacher is in charge.	1	2	3	4
41. Before suggesting any extension or redirection of activity, teacher gives diagnostic attention to the particular child and his/her particular activity.	1	2	3	4
42. The children spontaneously look at and discuss each other's work.	1	2	3	4
43. Teacher uses tests to evaluate children and rate them in comparison to their peers.	1	2	3	4
44. Teacher uses the assistance of someone in a supportive, advisory capacity.	1	2	3	4
45. Teacher tries to keep all children within his/her sight so that he/she can make sure they are doing what they are supposed to do.	1	2	3	4
46. Teacher has helpful colleagues with whom he/she discusses teaching.	1	2	3	4

	<u>No Evidence</u>	<u>Weak Infrequent</u>	<u>Moderate Occasional</u>	<u>Strong Frequent Evidence</u>
47. Teacher keeps a collection of each child's work for use in evaluating his/her development.	1	2	3	4
48. Teacher views evaluation as information to guide his/her instruction and provisioning for the classroom.	1	2	3	4
49. Academic achievement is the teacher's top priority for the children.	1	2	3	4
50. Children are deeply involved in what they are doing.	1	2	3	4

(WALBERG AND THOMAS)
TEACHER QUESTIONNAIRE

Developed for:

The Pilot Communities Program
Education Development Center
Newton, Massachusetts

By:

Herbert J. Walberg and
Susan Christie Thomas
T D R Associates, Inc.
Newton, Massachusetts

Under:

U. S. Office of Education Grant
Number OEC-1-7-062805-3963
Amendment #10

March, 1971

1.	_____
2.	_____
3.	_____

School: _____

Classroom: _____

Teacher: _____

QUESTIONNAIRE

INSTRUCTIONS: For each of the following questions, circle the number which most closely expresses your estimate of the extent to which the statement is true of your own classroom. If the statement is absolutely not the case, circle "1"; if it is very minimally true, choose "2". If the statement generally describes your classroom, choose "3"; if it is absolutely true, choose "4".

* * * * *

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
1. Texts and materials are supplied in class sets so that all children may have their own.	1	2	3	4
2. Each child has a space for his/her personal storage and the major part of the classroom is organized for common use.	1	2	3	4
3. Materials are kept out of the way until they are distributed or used under my direction.	1	2	3	4
4. Many different activities go on simultaneously.	1	2	3	4
5. Children are expected to do their own work without getting help from other children.	1	2	3	4

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
6. Manipulative materials are supplied in great diversity and range, with little replication.	1	2	3	4
7. The day is divided into large blocks of time within which children, with my help, determine their own routine.	1	2	3	4
8. Children work individually and in small groups at various activities.	1	2	3	4
9. Books are supplied in diversity and profusion (including reference books, children's literature).	1	2	3	4
10. Children are not supposed to move about the room without asking permission.	1	2	3	4
11. Desks are arranged so that every child can see the blackboard or teacher from his/her desk.	1	2	3	4
12. The environment includes materials I have developed.	1	2	3	4
13. Common environmental materials are provided.	1	2	3	4
14. Children may voluntarily use other areas of the building and schoolyard as part of their school time.	1	2	3	4
15. Our program includes use of the neighborhood.	1	2	3	4

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
16. Children use "books" written by their classmates as part of their reading and reference materials.	1	2	3	4
17. I prefer that children not talk when they are supposed to be working.	1	2	3	4
18. Children voluntarily group and regroup themselves.	1	2	3	4
19. The environment includes materials developed or supplied by the children.	1	2	3	4
20. I plan and schedule the children's activities through the day.	1	2	3	4
21. I make sure children use materials only as instructed.	1	2	3	4
22. I group children for lessons directed at specific needs.	1	2	3	4
23. Children work directly with manipulative materials.	1	2	3	4
24. Materials are readily accessible to children.	1	2	3	4
25. I promote a purposeful atmosphere by expecting and enabling children to use time productively and to value their work and learning.	1	2	3	4
26. I use test results to group children in reading and/or math.	1	2	3	4

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
27. Children expect me to correct all their work.	1	2	3	4
28. I base my instruction on each individual child and his/her interaction with materials and equipment.	1	2	3	4
29. I give children tests to find out what they know.	1	2	3	4
30. The emotional climate is warm and accepting.	1	2	3	4
31. The work children do is divided into subject matter areas.	1	2	3	4
32. My lessons and assignments are given to the class as a whole.	1	2	3	4
33. To obtain diagnostic information, I observe the specific work or concern of a child closely and ask immediate, experience-based questions.	1	2	3	4
34. I base my instruction on curriculum guides or the textbooks for the grade level I teach.	1	2	3	4
35. I keep notes and write individual histories of each child's intellectual, emotional, and physical development.	1	2	3	4
36. I have children for just one year.	1	2	3	4
37. The class operates within clear guidelines, made explicit.	1	2	3	4

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
38. I take care of dealing with conflicts and disruptive behavior without involving the group.	1	2	3	4
39. Children's activities, products and ideas are reflected abundantly about the classroom.	1	2	3	4
40. I am in charge.	1	2	3	4
41. Before suggesting any extension or redirection of activity, I give diagnostic attention to the particular child and his/her particular activity.	1	2	3	4
42. The children spontaneously look at and discuss each other's work.	1	2	3	4
43. I use tests to evaluate children and rate them in comparison to their peers.	1	2	3	4
44. I use the assistance of someone in a supportive advisory capacity.	1	2	3	4
45. I try to keep all children within my sight so that I can be sure they are doing what they are supposed to do.	1	2	3	4
46. I have helpful colleagues with whom I discuss teaching ideas.	1	2	3	4
47. I keep a collection of each child's work for use in evaluating his/her development.	1	2	3	4

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
48. Evaluation provides information to guide my instruction and provisioning for the classroom.	1	2	3	4
49. Academic achievement is my top priority for the children.	1	2	3	4
50. Children are deeply involved in what they are doing through the day.	1	2	3	4

(HOY AND JAVOLICK)
TEACHER ATTITUDE INVENTORY

Developed by:

W. K. Hoy and

J. M. Jalovick

Reported in:

Hoy, W. K., & Jalovick, J. M.

(1979). Open education and pupil
control ideologies of teachers.

The Journal of Educational
Research, 73, 43-49.

TEACHER ATTITUDE INVENTORY

	STRONGLY AGREE	AGREE	UNDECIDED	DISAGREE	STRONGLY DISAGREE
1. The ultimate purpose of education is the acquisition of knowledge.	SA	A	U	D	SD
2. Students are capable of making intelligent decisions in significant areas of their own learning.	SA	A	U	D	SD
3. There is a specific body of learning which is essential for everyone to know before he/she leaves school.	SA	A	U	D	SD
4. Objective measures of performance, such tests, have a negative effect on learning.	SA	A	U	D	SD
5. Students learn what they are forced to learn.	SA	A	U	D	SD
6. The best measure of a student's work is the teacher's judgment of it.	SA	A	U	D	SD
7. What a student IS is more important than what he/she KNOWS.	SA	A	U	D	SD
8. Learning from the teacher is probably the best way to learn.	SA	A	U	D	SD
9. Students have the right to make important decisions regarding their own educational experience.	SA	A	U	D	SD
10. Knowledge is categorized into disciplines which have a content and structure.	SA	A	U	D	SD

- | | | | | | |
|--|----|---|---|---|----|
| 11. Learning is better assessed by direct observation than through tests. | SA | A | U | D | SD |
| 12. In order to learn, students have to quit playing around and work hard. | SA | A | U | D | SD |
| 13. Learning will increase when students share in decisions about what they will study. | SA | A | U | D | SD |
| 14. Important choices concerning what students should learn are best made by adults. | SA | A | U | D | SD |
| 15. A student's self-directed experimentation is the most effective way to learn. | SA | A | U | D | SD |
| 16. There is no minimum body of knowledge which is essential for everyone to acquire. | SA | A | U | D | SD |
| 17. Students are innately curious and will learn without the teacher's intervention. | SA | A | U | D | SD |
| 18. The teacher is a better judge of the time a student needs to learn a concept than the student. | SA | A | U | D | SD |
| 19. Knowledge does not fall into neatly separate categories or "disciplines." | SA | A | U | D | SD |
| 20. What a student wants to learn is not necessarily what he/she should learn. | SA | A | U | D | SD |

TEACHER INTERVIEW GUIDE

Adapted by:

Marianne Everett

Based on the work of:

Bussis, A. M., Chittenden, A., &

Amarel, M. (1976). Beyond surface

curriculum. Boulder: CO:

Westview Press.

1976

TEACHER INTERVIEW GUIDE8 Roles & Characteristics Indicated:Questions to be asked teacher/graduates:

Provisioning;
Ideas About
Children and
Learning;
Instruction

1. Would you describe a typical school day in your classroom. What do you and the children do first, and then on through the day? (Why?)
(Ask: What are the children doing? Why?
What is the teacher doing? Why?)

Same as Above;
Also:
Humaneness;
Self-
Perception of
Teacher

2. Who decides on the daily time schedule of the class? Why?
3. How do you see your role? How do you use your time in class? How do you reach every child? What is difficult for you? Easy?

Self-
Perception of
Teacher;
Seeking Profes-
sional Growth

4. How do you plan for your teaching? When? Where? Do you spend much time outside the school hours preparing? Describe.

Provisioning;
Humaneness;
Instruction

5. About the classroom--who decided on the arrangement of the furniture and space? Why is it this way? Has it been this way all year? Why?

Same as Above;
Also:
Ideas About
Children and
Learning

6. Who decided on the materials in the classroom? Who brought these in? Who ordered them? How does the school (principal, others) feel about your ideas on materials for teaching/learning?
Is there any material that is essential to your teaching that you could not do without?
How helpful do you find publisher's materials, textbooks, workbooks, other manufactured materials? How helpful do you find natural materials, things from the environment? What learnings do they foster?

Instruction;
Humaneness;
Ideas About
Children and
Learning

7. How do you group children? Why? What helped you decide who should be in which group? Do the groups ever change? In what ways do you allow for individual needs?

- Same as Above 8. What about children's own individual interests; what place do they have in your daily program?
- Same as Above 9. What about children's relationships to each other in your classroom?
- Humaneness;
Ideas About
Children and
Learning 10. What about children expressing their own feelings and needs; how do you cope with this? What about sensitive context--fears, sex, birth, death; do these come up in your class? How do you handle these situations? What about divorce, family problems; do you think that any of these sensitive issues have a place in the classroom?
- Same as Above;
Also:
Provisioning 11. What choices do you give children in the school day? Why? Suppose some can't make a choice?
- Same as Above 12. Do the children have any other responsibilities in your classroom? Why?
- Same as Above;
Also:
Diagnosis 13. Do you think a less structured approach to teaching is best for all children? Why? When, or for whom, do you think a more flexible approach is suitable?
- Same as Above 14. What about times when children are disruptive; how do you handle that situation?
- Diagnosis;
Ideas About
Children and
Learning 15. How do you diagnose children's needs? What records do you keep? How often do you diagnose? What do you do about the information?
- Same as Above;
Also:
Evaluation 16. How do you evaluate children's progress? What do you do with the information? How do you report to parents? Any problems with this?
- Self-
Perception of
Teacher;
Seeking Profes-
sional Growth 17. What about your own goals as a teacher; what do you feel good about accomplishing so far? Which goals do you feel not so good about? Which goals are you still working on?
- Provisioning;
Instruction;
Self-
Perception of
the Teacher 18. Now about the curriculum and the program content; who decides what you are going to teach? Who decides how you are going to teach? Does this create difficulties for you? Why?

Same as Above

19. How about your own special interests or talents; do you make use of them in the classroom? Do you use any special knowledge that you have in your teaching?

Seeking Professional Growth;
Ideas About Children and Learning; Self-Perception of the Teacher

20. If you could pursue further study, what would you want to learn about? Have you taken any workshops or courses since you graduated from the Interdisciplinary Program?

Self-Perception of the Teacher

21. How do your children get on when you have to step out of the class for a moment? How do they behave when a substitute teacher comes?

Same as Above;
Ideas About Children and Learning

22. If a new teacher came to you for advice (and he/she wanted to have an Interdisciplinary approach in his/her classroom), what advice would you give?

Now let's talk about the courses you took in the Interdisciplinary (Designs, INTEP) Program at UMass.

Self-Perception of the Teacher;
Seeking Professional Growth;
Ideas About Children and Learning;
Instruction; Provisioning

23. First, tell me about how you got interested in applying to the Program. Why did you choose the Interdisciplinary Program over the other teacher education programs at UMass?
24. What do you remember particularly about the workshop courses? Looking back, does anything stand out? What especially has proven to be helpful in your teaching?
25. What specific ways were the courses helpful with ideas or things you have later used in your class? What about your student teaching; how helpful has that proven to be?

Same as Above

26. Is there anything about the Interdisciplinary Program that you think should be changed? Why? Is there anything about the Program that you think should definitely be kept? Why?

Now let's talk about the school where you are presently working.

- Seeking Professional Growth;
Self-Perception of the Teacher
27. Do most of the teachers in your school work alone, or is there sharing and cooperation among teachers? Describe.
Is there anyone that you share ideas with here on the faculty? Describe.
What are the advantages (disadvantages) of this way of working?
- Instruction;
Self-Perception of the Teacher
28. Do you have an aide? Anyone else who helps in your classroom? Describe their role(s) and your role. What are the benefits/disadvantages of this?
- Self-Perception of the Teacher;
Instruction;
Ideas About Children and Learning;
Provisioning
29. What about the principal; what is your relationship to him/her? What particular things come up for discussion? Does he/she visit your class?
30. What contact do you have with parents? When? Where? Helpful or difficult? Why?
Do parents help you in the classroom? Describe.
Do they understand your way of teaching?
What do you do about that?
- Self-Perception of the Teacher;
Ideas About Children and Learning;
Instruction
31. How would you characterize the school in which you now teach? Its beliefs, its philosophy of education? Do you agree? Why?
32. Are there any mandates or school requirements that you disagree with? Do these interfere with your teaching, or make things difficult for you? Describe.
- Same as Above
33. Are there any school policies and beliefs that are particularly helpful to you in your teaching? (Discuss these.)
Does the faculty have any major concern now?
- Self-Perception of the Teacher
34. Who or what has been a major influence in your teaching? How?
- Same as Above
35. What kind of school did you go to as a child? Describe it. How do you feel about it?
- Same as Above
36. Considering your course of study in the Interdisciplinary Program--your chief preparation for teaching, what two-semester sequence was the most valuable to you? Why?
What was the least valuable? Why?

Seeking Profes-
sional Growth

37. Now, looking to the future, what do you want to accomplish for yourself sometime in the future? Any far-reaching goals or ambitions? Why?

(The above "Teacher Interview" questions are based on the work of Bussis, Chittenden, and Amarel, 1976.)

APPENDIX C

WRITTEN CONSENT FORMS:

TEACHER INTERVIEW: WRITTEN CONSENT FORM;
PROFESSOR INTERVIEW AND OBSERVATION: WRITTEN CONSENT FORM

TEACHER INTERVIEW:
WRITTEN CONSENT FORM

- I. I, Marianne Everett, am a graduate student (Ed.D. candidate) in the Integrated Day Program at the School of Education, University of Massachusetts at Amherst. I have been studying the Integrated Day Program and its undergraduate component, the Interdisciplinary Program (formerly called "Designs"), as a model for teacher education. I am conducting a follow-through research study to see what has happened to graduates of the program. This is being done through interviews, observations of their classrooms, and questionnaires.
- II. You are being asked to be a participant in this study. The observation of your classroom will take place by arrangement for one entire school day. The interview will take place after school the same day. The interview will focus on what it is like to be a classroom teacher. We will also talk about how you came to be enrolled in the Integrated Day Program ("Designs" or "Interdisciplinary Strand") and what your experience was like there.
- III. The interviews will be audio-taped and later transcribed. My goal is to compile and analyze the material. (You will be one of several graduates of the Program who will participate.) I will use the material from the interviews, the observations, and the questionnaires for the following:
 - (a) a dissertation on the Integrated Day Program and its undergraduate component, the Interdisciplinary (Designs) Program (it has been the same program for many years, though with different names);
 - (b) journal articles based on this dissertation;
 - (c) possible books on teacher education and related subjects in the future.

In all written materials and oral presentations in which I may use materials from your interviews, the observation of your classrooms, and the questionnaires, I will use neither your name, names of people close to you or your students, nor the name of your school. Transcripts will be typed with the initials for your name, the names of people close to you, and the names of your students and school.

After the interview and observation, I would appreciate your filling out questionnaires similar to the forms I use for observations.

- IV. While consenting at this time to participate in this interview, you may at any time withdraw from the actual interview process.
- V. Furthermore, while having consented to participate in the observation/interview process, and having so done, you may withdraw your consent to have specific excerpts from your interviews used in any printed materials or oral presentations if you notify me within one week of your interview.
- VI. In signing this form, you are agreeing to the use of the materials from your interview, as indicated in III. above. If I were to want to use the materials from your interview in any way not consistent with what is stated in III., I would contact you to get your additional written consent.
- VII. In signing this form, you are also assuring me that you will make no financial claims on me for the use of the material from your classroom observation, interview, and/or questionnaires.
- VIII. Finally, in signing this, you are thus stating that no medical treatment will be required by you from the University of Massachusetts should any physical injury result from participating in these interviews/observations/questionnaires.

I, _____, have read the above statement and agree to participate as a graduate of the University of Massachusetts teacher education program called:

_____ Designs

_____ Interdisciplinary Strand

under the conditions stated above.

(Signature of Participant)

(Date)

(Interviewer)

PROFESSOR INTERVIEW AND OBSERVATION:
WRITTEN CONSENT FORM

- I. I, Marianne Everett, am a graduate student (Ed.D. candidate) in the Integrated Day Program at the School of Education, University of Massachusetts at Amherst. I have been studying the Integrated Day Program and its undergraduate component, the Interdisciplinary Program (formerly called "Designs"), as a model for teacher education. I am conducting a follow-through research study to see what has happened to graduates of the program. This is being done through interviews, observations of their classrooms, and questionnaires, as well as interviews with professors.
- II. You are being asked to be a participant in this study. The interview will take place in your office, by appointment. We will talk about your role in the Interdisciplinary Program (the undergraduate component of the Integrated Day Program), the history of the Program, and how certain teacher roles and characteristics are fostered in your course and in the Program. I will also observe your college classes, by appointment.
- III. The interviews will be based on my written description after observing your course. They will be audio-taped and later transcribed. My goal is to compile and analyze the material. (You will be one of several professors in the Program who will participate.) I will use the material from the interviews and the observations for the following:
 - (a) a dissertation on the Integrated Day Program and its undergraduate component, the Interdisciplinary (Designs) Program (it has been the same program for many years, though with different names);
 - (b) journal articles based on this dissertation;
 - (c) possible books on teacher education and related subjects in the future.

In all written materials and oral presentations in which I may use materials from your interviews and the observation of your classroom, I will use neither your name nor the names of people close to you or your students. Transcripts will be typed with the initials of your name, the names of people close to you, and the names of your students.

- IV. While consenting at this time to participate in this interview, you may at any time withdraw from the actual interview/observation process.

- V. Furthermore, while having consented to participate in the observation/interview process, and having so done, you may withdraw your consent to have specific excerpts from your interviews used in any printed materials or oral presentations if you notify me within one week of your interview.
- VI. In signing this form, you are agreeing to the use of the materials from your interview, as indicated in III. above. If I were to want to use the materials from your interview in any way not consistent with what is stated in III., I would contact you to get your additional written consent.
- VII. In signing this form, you are also assuring me that you will make no financial claims on me for the use of the material from your classroom observation and interview.
- VIII. Finally, in signing this, you are thus stating that no medical treatment will be required by you from the University of Massachusetts should any physical injury result from participating in these interviews/observations.
-

I, _____, have read the above statement and agree to participate as a professor of the University of Massachusetts teacher education program, called the Interdisciplinary/Integrated day Program, under the conditions stated above.

(Signature of Participant)

(Date)

(Interviewer)

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