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Organizational Models in Developmental Education: A Taxonomy

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LOYOLA UNIVERSITY CHICAGO

ORGANIZATIONAL MODELS IN DEVELOPMENTAL EDUCATION:
A TAXONOMY

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL OF ARTS AND SCIENCES
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

EDUCATIONAL LEADERSHIP AND POLICY STUDIES
IN HIGHER EDUCATION PROGRAM

BY
GAIL D. LENN DANTZKER

CHICAGO, ILLINOIS

JANUARY 1997

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CHAPTER I

INTRODUCTION AND OVERVIEW

Introduction: A Metaphorical Beginning

A formal statement of organization may be described as a "blueprint to which organizations are to be constructed and to which they ought to adhere" (Etzioni, 1964, p. 20). This classical approach to organization may be applied in general to institutions of higher education in the United States. However, it might be historically uncharacteristic of the subsystems within these institutions that provide programs involving activities designed to assist students in developing the attitudes and skills essential to accomplishing their academic goals in college, frequently termed "developmental education." It seems likely that most programs of developmental education have come into existence more like the sidewalks of the, perhaps apocryphal, newly-opened college campus where, according to the story, the initial buildings were constructed, but no sidewalks were built to connect them. Instead, the architects waited to see where paths became worn as members of the college community chose the most direct, or utilitarian, or delightful ways to make their way from one place to another on campus. The architects then had the sidewalks built along the routes of the paths.

This story may serve as a loose metaphor for the development and structure of programs of developmental education in higher education in the United States. Although forms of developmental education programs can be identified from almost the earliest Colonial colleges, developmental education was seldom an intentional part of the formal organization, seldom a part of its original "blueprint." Instead, it most frequently seems to have been an unplanned phenomenon, developing its own structures and pathways within each institution as the best available ways from "here" to "there" became evident and institutionalized.

Perhaps American higher education has developed to the point where it is possible to examine the organizational landscapes of postsecondary institutions, capture a record of the pathways and structures associated with developmental education, and attempt to study similarities and differences among them. It may even be possible to extract a generalizable "blueprint" or a typology of "blueprints", in the form of a model or

typology of models, that can assist in development, operation, and evaluation of programs of developmental education. The general purpose of this research is to begin work toward those ends.

Defining Developmental Education

What is developmental education? One of the ongoing problems in discussing developmental education is the multiplicity of definitions used and notions associated with the term in common usage. (See, for example, Carriuolo, 1994; Lively, 1993, 1995; Manno, 1995.) However, the National Association for Developmental Education (NADE) and the College Reading and Learning Association (CRLA) have been working together for nearly a decade to standardize the terminology of developmental education and have recently released a standardized glossary as an appendix to the volume, NADE Self-Evaluation Guides: Models for Assessing Learning Assistance/Developmental Education Programs (Clark-Thayer, 1995) (hereafter referred to as Self-Evaluation Guides). That glossary is attached as Appendix A, with permission of the publisher, and is used as a guide to terminology in this study.

The title of the NADE guide itself suggests some of the terminological ambiguity prevalent in this area of higher education, with its "learning assistance/developmental education programs" phrasing. The Glossary of the NADE guide (Clark-Thayer, 1995) defines the term "learning assistance" as follows:

- 1: supportive activities, supplementary to the regular curriculum, that promote the understanding, learning and remembering of new knowledge, remediation for prescribed entry and exit levels of academic proficiency, and the development of new skills. May provide study skills instruction, tutoring reviews, supplemental instruction, study groups, special topic workshops, exam preparation, and various types of self-paced instruction, including computer-assisted instruction. Usually provided in a center that can be staffed with professionals, paraprofessionals and/or peers.
- 2: programs which include instruction and activities for developing learning skills . . . [ellipses in original] study skills, reading, mathematics, writing, critical thinking and problem solving. Subject matter tutoring, graduate exam preparation courses and time management workshops may also be offered (Materniak & Williams, 1987).
- 3: programs that enable students to develop the attitudes and skills that are required for successful achievement of their academic goals. These programs are based on research findings in the areas of teaching, learning, and human development. (p. 170)

This same source defines "developmental education" as "1: a sub-discipline of the field of education concerned with improving the performance of students. 2: a field of research, teaching, and practice designed to improve academic performance. 3: a process utilizing principles of developmental theory to facilitate learning" (p. 167). Developmental programs, in turn, are defined as being "1: an organized system for delivering

instruction, academic support, and personal development activities to college students. 2: any program designed according to the principles of developmental theory for the purpose of promoting intellectual and personal growth" (pp. 167-168).

The term "developmental", itself, is defined as

1: in the normal/expected sequence of learning. Usually used in counterdistinction to accelerated and/or remedial learning. Use of the term in college education assumes/takes cognizance of the notion that there is a gap between 'high school' and 'college' that needs to be filled in for many students. The claim is, thus, that these students need to learn skills they have not previously been taught . . . and that the fault is not with their ability, but with their preparation. Compare with REMEDIAL, a term that suggests that skills have been taught, but not learned (or not learned correctly), and that, therefore, the student must be re-taught. Remedial instruction may be a tool used in a developmental program

2: Instruction designed to improve a student's competencies in the basic skills areas and allow increased mastery over the student's environment to facilitate effective learning and communication. (p. 167)

"Developmental students", then, are "1: students assessed as having potential for success if appropriate educational opportunities are provided. 2: students who, while meeting college admissions requirements, are not yet fully prepared to succeed in one or more introductory courses" (p. 168).

"Remedial" is defined in the NADE Self-Evaluation Guides Glossary as "instruction designed to remove a student's deficiencies in the basic entry or exit level skills at a prescribed level of proficiency in order to make him/her competitive with peers" (p. 172). "Remedial programs" are "a group of courses and/or activities to help learners needing remediation to achieve basic skills in their identified deficit area" (p. 172) and "remedial students" are "students who are required to participate in specific academic improvement courses/programs as a condition of entry to college" (p. 172).

Working from these definitions, the third and least restrictive definition of "learning assistance" is used in this study to bound the meaning of "developmental" as referring to programs necessary for students to develop the attitudes and skills essential to accomplishing their academic goals in college. Developmental programs, thus, may be reasonably delimited to those meeting the first definition advanced by the Self-evaluation Guides, that of a "system for delivering instruction, academic support, and personal development activities to college students" (pp. 167-168). This is consistent with the definition of "developmental students" as being those "assessed as having potential for success if appropriate educational opportunities are provided"

(p. 168). These limits are not overly restrictive, yet seem able to subsume the other categorical definitions given above.

Whether support offered to accelerated students falls outside the area of developmental education is left open by this definition. While such assistance falls outside the Self-Evaluation Guides definition of "developmental" and is used in counterdistinction to identify what "developmental" is not, some of the definitions offered for "learning assistance," "developmental education," and "developmental students" do not preclude inclusion of accelerated students in developmental programs. Given this lack of clarity on the point of inclusion/exclusion of accelerated students by the NADE Glossary, for the purposes of this study the lead of Wright and Cahalan (1985) is followed. They argue that what is considered "remedial" or "developmental" is more nearly a function of institutional or program type or selectivity than of any particular quality of a student. What is considered developmental in one institution (or program, or course) of higher education might not be so considered in another, nor even in another program or course within the same institution. Therefore, some forms of learning assistance available to accelerated or sufficiently prepared students may be considered developmental in nature. By the same token, it is likely that most, if not all, institutions of higher education have developmental students and offer interventions to these students that are developmental in nature.

Overview: Organization and Developmental Education.

Although the specific contributions from the literature will be reviewed and discussed in Chapter Two, it may be helpful to provide an overview of the conceptual framework underlying this study at this point. Most research and writing in the field of developmental education in higher education in the United States has been more involved with practice than with theory. This literature is replete with "how-to" articles, that are largely confined to study of practices and results on an input-throughput-output model with little regard to the placement of developmental education programs within the organization or their interaction with other subsystems of the organization. The principal typologies that have been developed as a result of this work, Keimig's (1983) hierarchy of learning improvement programs' activities and the Self-Evaluation Guides (1995) with its division of program types into tutoring, adjunct instruction, and developmental/ remedial courses, have

been application-oriented as well; they are intervention typologies, or classifications of the types of practices involving students and developmental educators.

As the field now stands, specific intervention activities or processes can be identified and classified. However, how the programs within which these interventions are carried out are structured, where they are placed within the greater organizational structure of the institution of higher education as a whole, and their articulation or interpenetration with other subsystems of the institution are largely unknown. Attribution of outcomes to intervention types, without consideration of such organizational factors, may be overly simplistic and potentially misleading. Others interested in study of organizations (e.g., Blau, 1970, 1974; Hall, 1977; Keimig, 1983; Miller & Friesen, 1980; Pfeffer & Salancik, 1978) have suggested that both structures and processes, and their interaction, may affect outcomes. It seems logical to suppose that the same might be true of developmental education programs. In the absence of information about the organizational structure of such programs, their placement within the framework of the greater organization of the institution of higher education, and their articulation and interpenetration with other organizational structures within that framework, however, outcomes are solely attributable to intervention processes.

Such attributions would appear to reflect assumptions that all colleges and universities are either essentially the same or are completely different in terms of structure and interaction with regard to developmental education. Those assumptions seem unlikely to be true. Moreover, they offer no way to distinguish one institution from another, meaning that all colleges and universities must be treated analytically either as a unit of one or as N analytical units, where N equals the number of institutions in the population. Neither of these treatments appears to be useful for making comparisons and contrasts among developmental program outcomes.

Inwardly looking study, like Keimig's (1983) and the NADE Self-evaluation Guides (1995), of input assessment, interventions, and output evaluation processes has been important in the field of developmental education. However, it would also seem important to look outwardly and to attempt to study programs of developmental education as organizations themselves and as parts of the larger organization of the educational institution. In making comparisons among programs and program outcomes it would seem helpful to have

some formalized means for comparing the structures of individual programs of developmental education. It might be of utility to note linkages between identified programs of developmental education and other parts of the institution. It might be useful to locate programs within the greater organization's structure. If such knowledge could be developed and a meaningful set of classifications identified, they could lead to development of a more rational method of selecting and developing programs of developmental education in order to achieve desired outcomes.

However, very little research is available discussing the nature of developmental education as an organizational unit, or units, itself, or as a part of the greater organization of the institution. The internal structure, or structures, of developmental education programs have not been identified. Neither has their linkage with the balance of the institution as an organizational whole, or with other subsystems, been developed. In the absence of such study, it is difficult to make meaningful comparisons among developmental education programs.

Development of a structural typology for subsystems formally identifiable as comprising programs of developmental education and of the subsystems informally involved in developmental education within institutions of higher education should make it possible to classify individual programs and facilitate comparisons among them. Thus, development of a program classification typology based on program structure, placement within the greater organization, and articulation with the organization's other subsystems may be an important task in developing tools for research and practice in developmental education within American colleges and universities.

Colleges and universities are forms of organizations and research has been done involving their structures as unitary organizations. Scholars researching higher education institutions as organizations have found it possible to categorize them in a number of different ways (e.g., Carnegie type, public/private, proprietary/nonproprietary, bureaucratic/collegial, open/closed systems). Such typologies are convenient tools for comparing and contrasting institutions in order to inform program selection and development decisions.

Research has also been conducted involving parts of these institutions as subunits, or subordinate organizations or subsystems, acting as structural and functional parts of the institutional organizational unit.

Studies of schools within universities, of departments within schools, or of administrative offices, have not been uncommon and have also produced typologies (e.g., collegial/ bureaucratic, open/closed, tightly/loosely coupled, technical/political). These, too, have been shown to have utility in making it possible to make meaningful comparisons among schools or programs.

Furthermore, if organizational structure can be seen to vary among institutions of higher education as a whole, and among other subunits or subsystems of those institutions, it seems likely to vary among the subunits or subsystems involved with developmental education. Therefore, attributions based solely on intervention processes appear likely to be inadequate, or only partially correct, and unlikely to prove adequate guides to making choices that maximize desired outcomes.

Systems theory. Conceptually, the college or university can be viewed as an open system to society as a whole. It can also be viewed as an organizational whole, a unitary system bounded from society as a whole by virtue of being classified as "college" or "university," rather than some other form of organization, and having a specific set of qualities generally recognized as characterizing that classification. The organization, "college" or "university," receives input and feedback from its external environment, society as a whole, and provides output and feedback to that environment. Thus, the institution and its external environment might be said to complement one another, to be articulated, or to interpenetrate or impinge upon one another. In addition, the university or college, although an organization unto itself, can also be said to be a subsystem of the society and the society can be said to form the environment in which the university operates (Boulding, 1956; von Bertalanffy, 1968).

Similarly, the university or college as an organizational whole, contains subunits or subsystems and forms the environment in which they operate. The organizational whole is affected by the subsystems and the subsystems are affected by the organization and by other subsystems. Each subsystem receives input from the organization as a whole (as well as from the external environment) and from other subsystems. Each subsystem provides output to the organization as a whole and to other subsystems.

In some instances, some subsystems may be processing the same input simultaneously or almost simultaneously. For instance, during a given school day, a college or university student (viewed as

"input/output") might well be involved with the developmental program staff, regular classroom faculty, the financial aid staff, and the staff of the athletic department, or other subsystems of the organization, all in situations where the student's status as a developmental student was salient. In such an example, it could be said that these various subsystems are processing the same student-as-input/output almost simultaneously and that both the organizational structures of these subsystems and their processes are likely to be articulated, complementary, or interpenetrating. Any changes in the student could be attributed to any one, all, or some combination of these subsystems.

This notion can be conceived of as represented in Figure 1, where the area outside the largest oval represents society as a whole. The largest oval represents the organization, "College" or "University." The partially overlapping smaller ovals marked "Formal" and "Informal" represent, respectively, the subsystem(s) within the college or university institution formally charged and represented as being responsible for developmental education (the formal system of developmental education) and the subsystem or subsystems which, although formally charged and represented as being responsible for other activities, also engage in activities that may be identified as developmental education (the informal system of developmental education). While this figure obviously oversimplifies the organizational structure and processes of the college or university as an organization, a system, and a subsystem, as well as those of the formal and informal subsystems dealing with developmental education, it seems useful in helping to conceptualize this study and to suggest why developmental education might be an important part of the field of higher education.

When the environment external to the organization of higher education provides input in the form of students who vary in their degree or recency of preparation to successfully undertake a college education and demands that colleges and universities further educate these students to some higher level, structures and processes must (and can be shown historically to) develop in higher education to ensure that a sufficient number of these students successfully complete their further education. Even when allowances are made for a continuum of institutions of higher education that tends to distribute this student input by means of varying degrees of selectivity, size, expense, geographical dispersion, gender or racial preference and/or diversity, etc., it must become evident that all institutions have some students who fall below the median for that institution

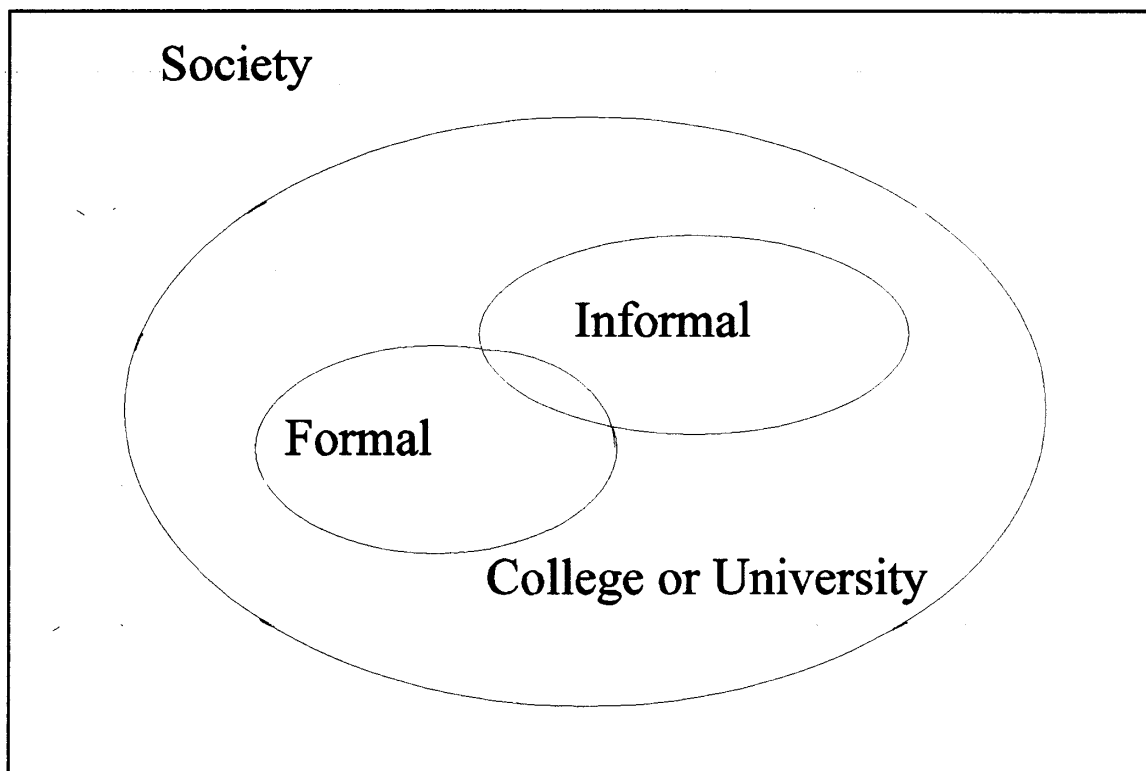


Figure 1. System and Subsystem Relationships

and that some institutions of higher education have a significant proportion of students who are not adequately prepared for success in contemporary higher education.

As the college or university as a whole assumes the role of environment to its subsystems, these students compose the environmental input to the subsystem formally involved with developmental education. This subsystem's role is to assist these students develop the skills, knowledge, behavior, and attitudes necessary to be successful in the larger system of the college or university as whole and to support them in doing so. Thus, the external environmental input to the college or university includes developmental students and these students are environmental input from the college or university to the developmental education subsystem of the higher educational organization. Successful output from this subsystem back to the organization of higher education includes students who are sufficiently prepared to be successful as college students.

While it is often possible to clearly identify the subsystem formally responsible for developmental education, to do so may be insufficient in identifying all parts of the college or university actually involved, at

least in part, in developmental activities. That is why in Figure 1 there is a larger subsystem identified as "Informal" that overlaps, in part, the Formal subsystem. Although depicted as one subsystem for the purposes of simplicity, the Informal subsystem could be conceived of as composed of any number of other subsystems, each of which has some functions that are in fact developmental educational in nature and overlap or complement the Formal subsystem. Attribution of outcomes solely to the Formal subsystem's structure or processes, without consideration of the contributions of the Informal subsystem, might overestimate the results of the Formal subsystem and underestimate the extent of developmental educational efforts within higher education.

Attribution of student success/failure solely to the efforts of the formal developmental education program and its staff may seriously misrepresent the effect of those efforts. Imagine the example of the developmental student nearly simultaneously interacting with several subsystems of the institution, as noted on page 11. Efforts of regular classroom faculty--perhaps from several academic departments--working directly with the student or with the staff of the developmental education program in support of the developmental education program may not be represented. The athletic department's concern about athletic eligibility may lead to special advising and academic assistance efforts--perhaps counterbalanced by requirements for time spent in practice and fatigue that may be harmful to the student's academic success--; neither effect may be adequately considered. The financial aid office's concerns with the student's ability to benefit from additional education, academic progress, scholarship eligibility, and satisfaction of credit hour requirements for financial aid may not be adequately considered as contributions to the student's academic success or lack thereof. Identifying contributions from outside the formal system may be an important step in accurately identifying the scope of developmental education in colleges and universities. Comparison of how these are structured among institutions may be a useful addition to comparisons of how the formal system is structured.

Goals of the Study

Historical evidence of developmental education. This research study is intended to provide an overview of the history of developmental education as practiced in American postsecondary and higher education. The goal of the historical overview is to establish that developmental students and programs to

assist them are not temporary phenomena that may be expected to disappear in the near future, but rather are longstanding characteristics of the American postsecondary educational environment having considerable impact on educational policies and practices. Therefore, developmental education should be worthy of serious scholarly study.

Structural models of formal organization in developmental education. A second goal of this work is to examine the literature of postsecondary and higher education with regard to developmental education for evidence of such study. Of particular interest is identifying attempts to develop structural models for developmental programs that would be useful in classifying empirical data and findings reported in the literature as attributable to a particular model, or combination of models, if evidence of such work is available from the literature.

Structural models of informal organization in developmental education. The third goal of this project is to explore possible interrelationships between developmental education programs and the greater milieu of the institution. The author suspects that developmental programs do not operate in a vacuum, with success or lack thereof attributable solely to the internal mechanisms and processes of the programs themselves. She suspects, instead, that there may be a complex interaction involving many parts of the educational institution, including parts not overtly identified as part of the developmental education program.

Formal and informal structural models from theory and research. Finally, the author seeks evidence in the literature of organization theory, the theory of organization as applied in higher education in general, and in the specialized literature of developmental education for research- and theory-based structural models of developmental education programs, both formal and informal. These include nearly a century's worth of study of organizational structure and management, and nearly a half-century's worth of study of organization in institutions of higher education. In the subfield of developmental education, however, there appears to be little study of the structure of developmental education programs. Furthermore, there is no published evidence that explores the articulation of the formally-designated programs of developmental education with other institutional subsystems (the "informal" organization) involved with the same students and the same goals, nor

is there information about the articulation of either the formal or the informal subsystems with the greater system of the institution as a whole.

Development of a typology. In the absence of evidence of structural models available in the literature, data collection and analysis are undertaken to attempt development of a typology. Primary emphasis is placed on development of a typology of structural models that formal programs of developmental education may take in higher education. Secondary emphasis is placed on tentatively identifying and exploring the informal organization involved with developmental education.

The General Research Questions.

How pervasive is developmental education within institutions of higher education? How are programs of developmental education structured and what part of the greater structure of the institution as a whole do they form? Is there variation among the structural forms they take? Do the parts of the institutional organization that are formally identified as the developmental education program include all the parts of the organization actually providing developmental education? These questions have not been fully explored or answered to date.

The significance of identification of general types of structural models of organization for developmental education programs, when no such classification system exists, lies in the utility of typology development. A typology makes possible identification and definition of individual programs, as well as facilitates comparison and contrast between individual program and the typological model, among individual programs or groups of programs, and among model types, for purposes of further research or program evaluation. That is to say, as recently noted by Smith and Mukherjee (1994, p. 225), answers to first order questions involving existence/affirmation, instance/identification, and substance/definition appear to be necessary first steps before any further research agenda involving questions of function, concomitance, equivalence/ difference, relationship, association/correlation, super- or subordination, or causality can be meaningful taken. Such a structural typology does not now exist in the literature and it is the purpose of this study to attempt its development.

In doing so, the following questions serve as guides to beginning the exploration:

1. Do programs of developmental education in postsecondary educational institutions in the United States assume different structural forms?
2. If so, can these forms be identified?
3. If these forms can be identified, can a reasonably limited set of structural models, or a typology of forms, be extracted from them?
4. Do developmental education programs form subsystems of the greater institutional organizational system?
5. If so, at what points do they articulate with other parts of the system?
6. Is this articulation patterned in some identifiable way(s)?
7. If so, can the pattern(s) be traced to identify an informal developmental education organization larger and more pervasive than the formal developmental education organization?
8. Are there distinctive patterns or relationships of informal organization that can be identified?

Because this study attempts something that evidently had not been previously attempted in the field of developmental education, it is considered exploratory in nature. Therefore, it is designed to achieve flexibility in exploring unanticipated phenomena, to maintain an open-ended and inclusive attitude toward phenomena that emerge as data collection and analysis continue. In this sense, the above-listed research questions may be thought of as guides or starting points for exploration and certainly may not be inclusive of all possible questions of interest. It seems probable that some of them will prove to be fruitful guides for inquiry and others less so.

Overview of the Study and Methods Used to Gather Data

Exploration of the formal and informal organizational structures associated with developmental education within institutions of higher education, with the intent of typology development, seems to require a method of investigating and comparing their presence in a large number of colleges and universities.

According to the National Center for Educational Statistics (1993), about 96 percent of all public 2- and 4-year colleges and universities offered some form of remedial assistance to their students, as did about 86 percent of

all private 4-year colleges and about 80 percent of all private 2-year colleges, in academic year 1991-92. For the purposes of this research, source(s) of data about these institutions should be recent, comparable across all institutions of interest, accurate, comprehensive of each institution's subsystems (to provide opportunity to identify the informal organization involved with developmental education), and accessible to the researcher. Furthermore, given the number of institutions in the population, the source(s) of data should be as economical as possible in terms of number of sources it is necessary to examine, their respective locations and availability, and the financial expense involved in using them.

Review of possible sources of data, their strengths and limitations, methods of analysis, and the economics of data collection and analysis leads the researcher to conclude that institutional self-studies prepared for accreditation/reaccreditation site visits from the six regional accrediting agencies are acceptable sources of data. They are available for every institution of interest, yet consist of a limited number of documents per institution. None is much more than a decade old and the most recent are less than one year old. Full institutional self-studies describe the organization and activities of the entire institution in considerable detail, and they may be expected to be reasonably accurate. Although the self-study document format varies among the six regional accrediting agencies, the purpose across all six is to require institutions of higher education to demonstrate that they are organized and function in support of their stated goals and objectives (among which educating students is almost universal). Therefore, self-studies may be expected to mention developmental educational programs and activities when they occur and to be comparable across the entire population of postsecondary institutions. Finally, collections of recent institutional self-studies are available at the six regional accrediting agencies' offices and are available to the researcher for use on-site, thus facilitating their review and limiting the expense of collecting data. Therefore, documentary research involving a sample of full institutional self-studies prepared for accreditation/reaccreditation site visits from the regional higher education accrediting agencies is selected as the principal sources of data for this research.

Limitations of the Study

Selection and use of theory. There does not appear to be a general unifying theory of organizations. In the absence of a unified theoretical stance toward organizational research, no single theory developed to date

seems fully comprehensive and explanatory in itself. Aware of a number of competing approaches to understanding organizations, the researcher is faced with a dilemma: more than one of the theories that might be used as a basis for exploration seem plausible, but none seems perfect. Moreover, each theorist and each theory seem to have their own set of underlying assumptions, seldom mutually exclusive in every nuance but also not fully commensurate with one another.

Each of the organizational theories the author encounters seems an imperfect choice, taken alone. Therefore, she chooses, as will become apparent as this study is explicated, to use parts of several organizational theories that seem most relevant and most compatible to the problem at hand and most commensurate with one another. In making any choices among competing theories, though, it must be noted that other, alternative, and potentially valuable theoretical approaches and understandings must be omitted. Selection of any one theory, or a limited number of theories, when others are available is itself a limiting process. That is, while it is true that a theory can serve as a "perceptual lens" permitting a clearer look at some aspects of the subject of interest, it can also be considered a "perceptual filter" that systematically filters out other aspects that might be of value to consider.

Level of analysis and data collection. Certain decisions have to be made about the level of analysis and the levels at which data collection would occur; these also pose possible limitations on the study. It would have been possible to study institutions of higher education in the United States as part of the population of all institutions of higher education in the world. It would also have been possible to study higher education organizations in the United States in comparison with other types of organizations in the U.S. Or, alternatively, institutions of higher education in the United States could have been classified in various ways and aggregated by classification for study. Subsystems or suborganizations within colleges and universities could have been classified according to intervention processes used and aggregated by classification for study. Social psychological study of individuals or groups of individuals within institutions of higher education could have been undertaken. Organizations might have been studied from any number of theoretical perspectives. A small number of institutions could have been scrutinized through in-depth case studies. They could have been studied

longitudinally. Each of these different ways, and any combination of them, might yield a different perspective, and each might have been valuable in its own way.

Nevertheless, every possible method cannot be applied simultaneously with every possible institution, or every possible level of every institution. Some limits have to be set; the scope has to be diminished. For the purposes of this study, the number of organizations studied and the time period in which their self-studies were written are limited. The most macro- and micro-levels of possible study are ignored and concentration is focused on the middle levels--the college or university as an organization and on selected systems or subsystems within it. A limited number of theoretical and empirical approaches are used in this work. These choices inevitably pose opportunities and limitations that might not have been the case if other choices had been made.

The population of interest. The general population of interest is all postsecondary institutions in the United States accredited by one of the six regional accrediting agencies--Middle States Association of Colleges and Schools, New England Association of Schools and Colleges, North Central Association of Colleges and Schools, Northwest Association of Schools and Colleges, Southern Association of Colleges and Schools, and Western Association of Schools and Colleges. This population consists of about 3600 institutions of higher education according to the U. S. Department of Education (Postsecondary Education Statistics Division, 1992). This study concerns itself only with the private and public nonprofit institutions among that group, consisting of about 3260 institutions, with the highest level of education offered ranging from less than one year to the doctoral degree (Postsecondary Education Statistics Division, 1992). Of this group, all highly specialized institutions (e.g., seminaries, art schools, schools of nursing), as well as institutions offering only graduate or professional studies, are omitted. The final group of interest is composed of approximately 3000 regionally accredited public and private nonprofit institutions offering undergraduate education at the vocational, technical, baccalaureate transfer, and baccalaureate levels.

The sample. Each institution in the population of interest is not necessarily available for inclusion in the study and the method of selecting the sample does not guarantee that the sample is representative of the population as a whole. There are several reasons for this. First, the regional accrediting agencies all operate on

a basic ten-year cycle for accreditation and reaccreditation, meaning that each of the institutions of interest could be expected to write at least one institutional self-study preparatory to a site visit and to receive at least one site visit during any decade. Site visits occur generally (but not always) on the anniversary year of initial accreditation; thus, about ten percent of all institutions of higher education may be expected to undergo accreditation/renewal visits during any given academic year if there is no reason to suppose that there is a systematic bias in the dates of initial accreditation. No effort is made, however, to determine whether such a bias exists. Moreover, use of the anniversary method for accreditation renewal on the part of the accrediting agencies means that the institutions preparing self-studies for accreditation visits in any given academic year are not necessarily representative of the population of interest as a whole.

Furthermore, some self-studies are unavailable for purposes of research for several reasons: a few are records of contested accreditation recommendations still under review, a few have not yet been completely processed, and some are simply misplaced and cannot be located during the time the documentary data collection is being carried out. Other institutions consider the records completely confidential and choose not to allow the researcher access to them. Thus, all of the self-studies prepared for accreditation/reaccreditation site visits are not available, a possible further limitation on representativeness of the population as a whole.

Finally, because institutional self-studies are typically begun well in advance of the actual accreditation/renewal site visits and because the full accreditation cycle for all colleges and universities is a decade-long period, the information contained in the oldest self-studies in the current cycle could be more than twelve years old. In the interests of both obtaining the most current information and having a manageable sample size, it has been decided to limit the documentary data collection to self-studies prepared for full accreditation/reaccreditation site visits occurring only in the academic years 1992-1993 and 1993-1994, the most recently completed academic years when data collection began. Although it is anticipated that this would yield a sample composed of about twenty percent of the population of interest and it is hoped that this sample would be at least roughly representative of that population in terms of institutional type (by Carnegie

classification), institutional size, geographic distribution, etc., there are no *a priori* guarantees that this is the case.

The data sources. It seems likely that any method of collecting data and any source of data have some set of inherent limitations. In this instance, selection of institutional self-studies prepared for use in full accreditation/reaccreditation site visits by teams representing the regional accrediting agencies poses its own set of limitations, or--at least--cautions. The self-studies were probably written to make the institutions, and their integral component units, look as positively as possible as seen through the eyes of their constituencies, as well as to make them appear as much in compliance as possible with the regional accrediting agencies' guidelines and recommendations.

They were also typically the work of committees that had to reach consensus about what was to be studied and written about and what was not. The committee process is potentially both a strength and a weakness in these documents. That is, if committee members represented different points of view and did their work diligently and with integrity, it is likely that all essential issues were aired and considered for inclusion in the final document. Such a process would have tended toward accuracy in representing the structure, processes, strengths and weaknesses of the institution in each area of committee consideration. On the other hand, however, committees may be unduly influenced by specific individuals or coalitions which have power, standing, or simply determination to prevail over other viewpoints. Additionally, committees usually work on a majority-rule principle in making decisions; it should be noted that the majority may prevail, but be completely wrong.

Finally, the final drafts of self-studies are typically written by one person, or a very small group of individuals. Of the self-studies reviewed for this project, this is overwhelmingly the case. These authors often acknowledge their gratitude to the various committees for the quantity and quality of work submitted to them and write of the task they face in preparing a final document to combine that work in an abbreviated document while retaining the voice and concerns of the individual committees.

Self-studies also contain information noting that the final draft had been approved by a self-study steering committee, the chief executive officer of the institution, sometimes other officers and councils, and--

usually--an external board of directors of some kind. Thus, authors of the final draft had not only to be concerned with accurately expressing the sense and tone of various committee reports, they also had to prepare a document that was agreeable to other groups with interests in it, especially where findings and recommendations had financial, political, organizational, technical, planning, policy, or legal implications, in addition to being a factor in accreditation/reaccreditation. It is remarkable that so many institutional self-studies were so apparently forthcoming in the face of these constraints.

Causality versus structure. The focus of this study is limited to attempting to identify the organizational structure(s) of the formal and informal developmental education systems and to locate them within the greater structure(s) of organizations of higher education. It is not intended to explore the causes of structure or organization; nor is it intended to explore the causes or processes of change and development in organizational structures. Finally, it is not intended to explore any causal relationship between internal processes or outcomes in developmental education programs and their organizational structure.

Simplification. While a very considerable effort is made to identify the formal and informal organizations of developmental education in detail from the data, and to make some tentative identifications of a typology, this inevitably presents a simplified, and probably incomplete, picture of colleges and universities and their subsystems, as reported here. This is a limitation particularly inherent to use of comparative and quantitative analysis in typology development (although it could be argued that no research report--regardless of the methodology used in research--can fully represent the object of research). In short, development of a typology is conceived as development of a set of one or more templates that could be used to facilitate making comparisons among developmental education efforts, while possibly failing to be fully representative of any particular organization.

A further simplifying factor that should be acknowledged is omission or near omission of consideration of influences impinging on developmental education efforts, whether formal or informal, directly from the external environment of society at large. However, as the goal of this study is to identify structure, not processes or causal factors, this decision seems justified; although, it is possible that provision of developmental education via external organizations unrelated to the college or university might affect the

formal or informal systems' structures, should such external organizations have occurred. Self-studies are simply not a good source of information about programs completely external and unrelated to the institutions.

The researcher. A further limitation that should be noted is the researcher herself. She cannot claim to be completely without bias or opinions regarding developmental education, having worked in that field of postsecondary education. While her *a priori* understandings probably shape the work in various ways, attempting to specify her understandings is helpful to the author in conceptualizing the study and in recognizing her biases. Another benefit, during the course of the study, is to make more evident points at which the data sources do not appear to support her understandings, thus inviting further study. In stating the following beliefs, she wishes to alert the reader to her own potentially biasing *a priori* understandings:

1. Most people have sufficient innate ability to successfully complete some form of postsecondary education.
2. Individual students' underpreparation, outdated preparation, and learning style differences contribute more to lack of success in academic work than the nature of academic work itself.
3. Most, if not all, individuals are developmental students in one way or another at some level in some field of academic endeavor; that is, there is probably no person who excels with ease at every level in every field of study.
4. Academic success is not solely dependent upon intelligence or academic preparation, but--for many students and would-be students--is related to social, psychological, and economic factors at work both within the educational institution and outside it; therefore, efforts intended to assist students in achieving academic success must take into account and mitigate negative influences in these other factors as well as provide academic assistance as needed.
5. Developmental education programs are valuable resources for many college students and many such programs make essential contributions to the well-being of students, their individual academic programs, and their colleges and universities.
6. Many students who are involved in developmental education are ultimately successful in achieving their postsecondary educational goals.

7. Such programs, and the students, faculty, and administrators involved with them, are frequently undervalued, misunderstood, or treated negatively by individuals and groups of individuals both within and without academia.
8. Hunter Boylan(1983, 1993), and others (e.g., Keimig, 1983), are correct in the idea that programs of developmental education frequently have little basis in research.
9. There is insufficient theory of developmental education to drive decision-making; therefore, it is difficult to make decisions about program development rationally or to defend the need for such programs and the use of resources to support them.

The researcher hopes that this study will be the beginning of an ongoing research agenda aimed at developing empirical evidence and theoretical underpinnings useful to developmental educators and administrators in institutions of higher education.

CHAPTER II

LITERATURE REVIEW

The literature reviewed provides background information about developmental education in American higher education and an overview of prior research in developmental education as appropriate to the topic of this study. A brief history of developmental education in American higher education is reviewed and instances provided to suggest that, far from being a recent and unfortunate aberration in higher education, the presence of students requiring developmental assistance is a longstanding phenomenon, traceable back to the earliest Colonial colleges. In addition, developmental interventions (i.e., activities carried out with the intent of assisting students to achieve and succeed in higher education) in use today can be demonstrated to have been used since the Colonial era as well. Thus, the purpose of this first section of the literature review is to establish that developmental education, its students and its intervention practices are not transient phenomena, but rather are a robust part of American higher education and worthy of scholarly study.

Second, the review of the literature dealing with developmental programs as organizational structures and as organizational subsystems of institutions of higher education is undertaken. The purpose of this portion of the review is to examine previous explanations of the organizational structure of programs of developmental education, both as systems and as subsystems, in an attempt to discover a system of classification, or typology/taxonomy, appropriate for programs of developmental education. This review thus focuses on the identification of underlying theory and empirical evidence suitable for use as organizing principles for the research questions and data collection and analysis methods used in this study. At points, the literature of developmental education proves inadequate to provide such underpinnings.

Therefore, the literature review turns first to the organizational theorists and researchers in higher education and then to the general literature of organization theory and research for guidance. Theories of organization that are applicable to organizations in general should be applicable to subsets of organizations, or

even to subsets of subsets; that is, patterns observable at macro levels should be observable at micro levels, and vice versa, as well as at interim levels (Gleick, 1987). Both common sense and the philosophy and practice of science suggest that inductive reasoning should be useful in generating conceptions or hypotheses about organizations that may be used for guides to appropriate theoretical and methodological approaches. An inductive approach also allows assumption of the truth of general claims, while allowing for the single disconfirming instance.

Finally, the findings, suggestions and theories reviewed provide direction for this study and justify it. The research questions outlined in Chapter One are revisited, in light of the literature reviewed, and general hypotheses for this study are stated.

Developmental Education

Historical overview of developmental education. Developmental education is not a new phenomenon in American higher education, although the form and terminology associated with it have varied over time and from institution to institution. From earliest days, American colleges found it necessary to operate pre-collegiate academies or preparatory departments to prepare students for entry-level college studies (Brier, 1984; Brubacher & Rudy, 1976; Burke, 1982; Westmeyer, 1985). Would-be college students sometimes studied with local individuals known for their scholarship, or their library, in order to prepare for college studies prior to matriculation (Brubacher & Rudy, 1976). In the late 19th to mid-20th centuries, it was not uncommon for secondary teachers to "take an interest in" particular high school students and help them become better prepared to undertake college-level study by providing them with academic work, materials, and out-of-class time and attention beyond that provided to other students (Ravitch, 1983). Among those who could afford them, private tutors and prep schools before and tutoring during college have never been uncommon among American students throughout the history of American higher education (e.g., Cash, 1941).

Not only have students themselves recognized a need for additional preparation in order to successfully undertake college work across the years, but an examination of the historical literature of American higher education often indicates that institutions of higher education and their faculties have also long recognized the shortcomings of entering students (e.g., Brier, 1983, 1984). The following are indicative of the

sorts of instances to be found in the historical literature:

- The Yale Report of 1828 (Yale College, 1828) notes the presence of students with "defective preparation."
- By 1852, the University of Michigan had established programs to assist students who came to college inadequately prepared (Mickler & Chapel, 1989).
- Of the 331 students registering at the University of Wisconsin in 1865, only 41 were actually enrolled in regular college courses; the balance of 290 students were enrolled either in the preparatory department or as "special" students (Dunbar, 1935).
- In his 1869 inaugural address at Harvard, Charles William Eliot referred to the necessity for colleges to provide instruction supplementing the inadequate knowledge of entering college students, saying "The American college is obliged to supplement the American school. Whatever elementary instruction the schools fail to give, the college must supply" (Hofstadter & Smith, 1961, p. 404).
- Cornell University, although presenting itself as academically selective and without remedial or preparatory programs, had a faculty admissions committee to deal with "doubtful cases" (Faculty Minutes, 1864) and, at the insistence of Ezra Cornell himself, allowed students to retake failed admissions tests (Boyeson, 1889).
- Even as late as 1889, a report to the National Council of Education stated that only 65 of the approximately 400 institutions of higher education in the United States did not have preparatory departments offering noncollegiate academic work (Canfield, 1889).

The reader willing to examine nearly 300 years of committee minutes, speeches, correspondence, and other published works of the faculty and administrators of American colleges and universities could almost certainly develop an extensive bibliography in which the academic qualities of the contemporary crop of undergraduates, throughout that entire span of years, have been documented and lamented as being sadly lacking in the preparation needed to undertake college-level work. Arguably, comments and reports of the types indicated above may be taken as historical evidence of recognition that some students with capacity to benefit from and succeed at college-level work required additional learning opportunities to acquire college entry-level academic and study skills (e.g., Orton, 1871). To the extent that the provider of academic assistance also recognized the necessity of providing not only academic preparation but also preparation for

college life, the information imparted may also have included socialization to college and assistance in development of appropriate coping mechanisms. There is historical, documentary evidence that information of this type was given along with academic advice (e.g., Vassar Miscellany, 1882).

Clearly, there has been a persistent understanding throughout the history of American higher education that prevailing elementary and secondary educational practices did not adequately prepare all potential college students to successfully undertake studies in higher education. Official programs and unofficial assistance were proffered to close the gap between students' levels of readiness and the level required to successfully begin college study. As Brier (1984) notes,

It can be asserted accurately that bridging the academic preparation gap has been a constant in the history of American higher education and that the controversy surrounding it is an American educational tradition. . . . The popular belief that the academically underprepared student and developmental education efforts are by-products of the open admissions of the 1960s is no more than a widely believed myth. (p. 2)

Martin Trow (1989) adds that the absence of a highly centralized federal governing and standardizing authority, tasked with maintaining high academic standards limiting admission to an intellectual elite, and the presence of a buyer's market have combined to force institutions of higher education in the United States to "find ways to serve other institutions and groups in their constant search for support. We have not been able to afford the luxury of high academic standards across all our degree-granting institutions" (p. 17).

Brier further argues that, even after a system of public elementary and secondary education was established in the United States, inadequately prepared students continued to be admitted to colleges and universities in part because of movement toward "educational egalitarianism" (1984, p. 2), influenced during the second half of the 19th century by the rise and general acceptance of Jacksonian democracy. Trow (1989) agrees that advocacy of near-universal access to higher education without requiring evidence of academic ability or level of preparation is a peculiar characteristic of American thinking and public policy. He writes, "Private attitudes and public policy--so consensual across the political spectrum that they occasion hardly any comment--affirm that the more people who can be persuaded to enrol [sic] in a college or university, the better" (p. 5) and suggests that universal access to means of personal advancement through higher education may be a political necessity to avoid class warfare. Due to attitudes of these sorts and their reflection in public policy,

the recent history of American public education has increasingly come to be an expectation that the K-12 public education system should produce graduates who are prepared to enter college if they choose to do so (Solmon, 1992). In the light of history, this expectation may be an unrealistic one.

Certainly, the expectation has not been fulfilled (Boyer, 1983; Clark, 1985). According to one national survey, 85 percent of all responding U.S. colleges and universities perceived entering freshmen to have inadequate or poor academic preparation (Lederman, Ribaud & Ryzewic, 1985). Another study reports about one third of all entering freshmen at both two- and four-year institutions of higher education require remedial or developmental education in reading, writing, and mathematics (Plisko & Stern, 1985). In the National Center for Education Statistics' 1993 report, Table 300 indicates that nearly 89 percent of all four-year colleges and nearly 91 percent of all two-year colleges reported offering remedial instruction or tutoring in academic year 1991-1992, an increase from about 79 percent and 84 percent, respectively, in 1980-81, although a slight decline is noted from academic year 1990-1991 to academic year 1991-1992.

It is possible to hypothesize that elementary and secondary schools are failing to meet their educational responsibilities and that is why so many students need developmental work in college to bring their academic skills up to the necessary levels. However, as Roberts (1986) notes,

It is impractical to expect adults to return to primary or secondary school to acquire the skills they need to be of value to themselves and to society. A choice must be made. Developmental education programs demonstrate that society has decided to help individuals overcome their skill deficiencies. The alternative would be to allow those individuals to remain a liability not only to themselves but also perhaps to society as well. (p. 18)

Whether the causes of underprepared college students have been due to failures or shortcomings within American K-12 education, to more nearly universal college attendance, to increased college attendance by "non-traditional" adult learners (Cross, 1976), or to some other factor, or combination of factors, developmental educational responses that have been pandemic in American higher education virtually since its inception continue. These responses have taken a limited number of forms, identifiable in historical documents from colleges and universities through expert analyses by researchers in higher education.

The forms of responses by American colleges and universities to underprepared students have historically included academies associated closely with individual institutions of higher education, preparatory

departments within them, pre-college courses offered by regular college departments but carrying no standing toward graduation, both individual and group tutoring, conditional admissions, revisions in course responsibilities and grading, and tutoring schools (Brier, 1984).

The preparatory departments of many colleges enrolled as many or more students than the colleges to which they were attached, until late in the 19th century, and as Brier (1984) notes may be more accurately described as "preparatory schools with college departments than colleges with preparatory departments" (p. 3). Even relatively large and prestigious universities frequently provided large and longstanding preparatory programs in order to prepare students to undertake college-level academic work. For example, the University of Wisconsin ran a preparatory department for over 31 years, beginning in 1849 (Curti & Carstensen, 1949).

While it is known from institutional reports (see, for example, Brier, 1983) that individual colleges and universities offered non-credit pre-college courses, it is almost impossible to determine how common this practice was, given the idiosyncrasies of course titling and description. However, it is quite clear that this occurred and, given the fact that it relieved colleges and universities of the odium of preparatory departments, may have been more common during the 19th century than previously recognized.

Tutoring also has a long history in preparing students for and in getting them through higher education. Whether the tutor imported from Europe to help young men of means master the intricacies of languages, mathematics, sciences, or music (Cash, 1941); the instructor who offered extra class sessions or made himself available to students for additional work (Ravitch, 1983; Veysey, 1965); or informal peer tutoring as always occurs between students, there can be no doubt that students in need of academic assistance often received it from a tutor throughout the history of American higher education.

Other, more commercial, forms of tutoring or developmental education programs were more or less generally accepted, although probably less common (Brier, 1984). The Cascadilla School, for example, was a "tutoring school" specifically intended to prepare students to enter Cornell University and operated by Cornell faculty (Brier, 1983, 1984). It and schools like it apparently operated on the English "cram school" model in which students were tutored by drill-and-practice methods to remediate specific deficiencies or to pass admission examinations for specific colleges and universities.

Based on the foregoing discussion of historical precedents, it may be safe to conclude that the forms of teaching/learning used in developmental education in the late 20th century are deeply rooted in nearly 300 years of American higher education. Neither the developmental student, the general forms of developmental educational interventions, institutional perceptions of the general unpreparedness of entering undergraduate students, nor the reluctance of institutions and their faculty members to admit that the current generation of student academic preparation--or lack thereof--is not just an aberrant dip in an otherwise sterling history of scholarly undergraduates, are *rara avis in terra*.

In recent years, there has been a rising level of criticism about the students coming to college. . . . that students' standardized test scores have dropped precipitously, with only a slight recovery in recent years; that student abilities in basic skills--reading, writing, and arithmetic--have diminished; that students' mastery of advanced skills has fallen behind that of students in other industrialized nations; that students' general knowledge in key areas such as history and geography, has declined. . . . These are not the high school graduates we want. There is a widespread feeling that students used to be much better. (Levine, 1992, p. 7)

The problem with all too many of our students isn't a lack of high expectations, it is that they have high expectations, but they haven't been equipped with the means, the proper tools, to achieve them (Bennett, 1992, p. 20).

When individuals noted, respectively, for their liberal and conservative views of education as Drs. Levine and Bennett are in agreement that contemporary students graduating from high school and entering colleges do not have satisfactory academic preparation as a result of their K-12 educations, it may represent consensus or near-consensus on the topic.

This consensus is supported by evidence reporting the situation in American colleges and universities. Survey results from 1,297 of approximately 2800 institutions of higher education admitting first-year undergraduates indicating that 28 percent of all entering freshmen required assistance in developing college-level reading skills, 31 percent in developing college-level writing skills, and 32 percent in developing college-level mathematics skills (Lederman, Ribaud & Ryzewic, 1985) certainly seem to support Levine's and Bennett's perceptions. Abraham (1991, 1992) reports more recently that over 90 percent of public and 70 percent of private two- and four-year colleges and universities in the Southern Educational Regional Board (SREB) states provide remedial and developmental educational assistance for their students. Abraham (1992) observes that about 36 percent of all entering college freshmen in SREB institutions require remedial or

developmental work in reading, mathematics, or writing. Among students requiring remediation before undertaking college-level academic work in SREB colleges and universities, about 60 percent are white students and about 40 percent are members of minority groups; however, African American and Hispanic students enroll in remedial courses at a rate nearly double that of white students (Abraham, 1992).

Furthermore, need for remediation is not restricted to non-selective institutions in the South: Abraham (1992) reports that about 25 percent of all freshmen admitted to doctoral-granting universities also require assistance in developing appropriate academic skills.

Pat Cross (1976) has documented trends in developmental education in higher education as evidenced by changes in academic assistance programs. She notes that trends in the sorts of academic assistance provided have followed trends in student enrollments, with changes in the types of academic assistance paralleling changes in types of students, or perceptions of changes in students' types. Before World War II, academic assistance programs consisted principally of "how to study" courses because it was virtually inconceivable to educators that students were academically unprepared for college, according to Cross. Instead, it was assumed that immaturity and lack of self-discipline led to inadequate study habits and, thus, to poor grades.

Cross (1976) suggests that the influx of non-traditional students to higher education following World War II made the heterogeneity and diversity of preparation of the student body manifest; in order to diminish educational differences among these students, a wider range of academic assistance programs were required. She surmises that institutions of higher education became more sensitive during this period to the possibility of psychological and sociocultural influences on students' academic success. Cross (1976) argues that institutions attempted to use these influences as means to differentiate between underachieving students (those with capacity to succeed in college) and low-ability students (those without capacity to succeed in college). It is her contention that, by the late 1960s, almost all academic assistance programs were developed to assist underachievers and students who were judged to be of low ability received little assistance.

During the late 1960s, 1970s, and 1980s, college attendance became more widespread than ever before, perhaps because of desegregation and equal rights campaigns, increased federal financial aid, a generally healthy national economic climate, avoidance of the Selective Service draft, and a sense on the part of

the Baby Boom generation that college was just the natural thing to do following high school (Ravitch, 1983). As Roueche and Roueche (1993) note, "...each succeeding generation was better educated than the one before it..." (p.3), and this seems to have been a societal expectation in the United States (Ravitch, 1983).

During this period of greatly increased participation in postsecondary education across all strata and groups in American society, a greater perspective on the diversity of needs of students was gained by educators. Roberts (1986) argues that "[f]actors associated with sociocultural differences in aspiration, career choices, and attitudes toward intellectual development were beginning to be diagnosed and planned for in academic support programs" (p. 15). He also discusses, however, the longstanding customs of many historically black colleges and universities in providing not only basic academic assistance and support when it was needed, but also the personal attitudinal and affective support and development needed by some students in coping with the demands of college life. Thus, it might be argued that recognition of the diversity of assistance programs may be associated with the diversity of social background, economic class, etc., of students, as well as with differing levels of academic preparation, and has been for over a century.

Going hand-in-hand with recognition of factors legitimately required to level the playing field for this diversity of needs, it might be argued, are advances in understanding of neurobiology, cognition, linguistics, social psychology, sociology, and cultural anthropology occurring during this era. Differences in how and why students learn, how they store information, and how information is retrieved and communicated were made increasingly clear through research (Fiske & Taylor, 1991; Solso, 1991) and have become increasingly salient to learning assistance programs (Roberts, 1986). As Roberts notes, "The piecemeal or bandaid approaches of former days are inadequate" (p. 16) in light of greater understanding of the characteristics of developmental students, both as individuals and as groups. Traditionally, such students and groups of students could be characterized as having poor self-concept or low self-esteem, academic weaknesses associated with lack of success in schooling, difficulty in framing academic or career objectives, as well as other personal impediments to success (Roueche, Baker, Mullin, & OmahaBoy, 1987; Roueche & Roueche, 1993).

Research in Developmental Education of Interest for This Study

Roberts (1986) further argues,

American colleges have accepted responsibility for helping students overcome impeding weaknesses in academic background and skills. The academic support programs have a variety of philosophical orientations and organizational patterns. To a large extent, the program diversity appears to be a natural reflection of the differences in purpose, organization, and clientele of American higher education. (p. 12)

As the foregoing discussion of the history of developmental education makes evident, there is a wide range of developmental education intervention forms of long standing in American higher and postsecondary education. However, other than anecdotal evidence, there is very little assistance available from the literature to guide decision-makers in choosing which, if any, form of developmental education program is best-suited to achieving desired outcomes in a particular environment and with various clientele.

The working hypothesis of the Director of the National Center for Developmental Education, Hunter R. Boylan, as expressed in a speech to the Ohio Association for Developmental Education in October, 1993, is that most developmental education programs are begun on what he calls "the program down the road" plan, a concept akin to mimetic isomorphism (DiMaggio & Powell, 1983). According to Boylan, educators thinking about providing developmental education programs hear about the program at a nearby institution, go visit it, take that model back to their home institution, and then put it in place without evidence either that it was working at the institution down the road or is likely to be successful at their institution given the characteristics of the student body; the faculty; the administration; the institutional type, culture, and climate; or the intended outcomes. Without a well-researched and documented decision tree, however, it is difficult to imagine how selection of developmental programs might be more scientifically managed.

While Roberts (1986) may be correct in suggesting that "program diversity appears to be a natural reflection of the differences in purpose, organization, and clientele of American higher education" (p. 12), it would seem beneficial to determine which program or programs appear to yield the intended results when used in conjunction with differing purposes or intended outcomes, intervention type(s), organizational and implementation patterns, and stakeholders within institutions of higher education. In reviewing the relevant literature, it becomes evident that three areas of interest are generally intertwined throughout much of the

literature, and a fourth, the matter of stakeholders, is less considered than the other three. The three principal areas of interest are interventions, the formal organization of developmental education programs, and--less overtly--the informal organization involved with developmental education and its articulation with the formal organization.

As becomes apparent in the following review, those studying and reporting on research in developmental education in higher education seldom fully disentangle these factors. Frequently, while discussing literature, developing strategy for research, and in discussing findings and making recommendations, authors seem not to recognize the possibility that these factors are separate variables, or sets of variables. Therefore, the literature cannot be neatly separated into discussions of interventions, formal organization, and informal organization. Rather, these strands are found commingled throughout much of the available literature.

Typology/Taxonomy Development. The literature of developmental education shows evidence of limited work toward classification of intervention types, as a first step in evaluating program results. There are two well-known typologies of intervention forms derived from the applied research and practical experience of developmental education practitioners: the joint standards of the National Association for Developmental Education (NADE) and the College Reading and Learning Association (CRLA), and those proposed by Ruth Keimig (1983) in Raising academic standards: A guide to learning improvement.

Keimig notes that learning improvement programs are essential in colleges and universities as responses to students who are inadequately prepared to undertake college-level academic work. Distinguishing between "remedial" education, that required to eliminate deficiencies in preparation, and "developmental" education, learning experiences provided as appropriate, she classifies the two as subsets of "learning improvement programs"(p. 2). Keimig argues that it is difficult to accurately attribute outcomes to learning improvement programs due to commonly, and inappropriately, used research practices, including: (1) inadequate or inconsistent terminology used to describe objectives, structures, methodology, or evaluative techniques; (2) quantitative measures that are derived from different types of programs and statistically treated as though qualitative differences among programs either do not exist or are not significant; and (3) attribution

of program outcomes strictly to the learning improvement program being evaluated without consideration of institutional or organizational factors external to the program itself.

Keimig (1983) proposes a hierarchy of learning improvement programs, consisting of four basic types, and argues that these types form a hierarchy based on effectiveness, expressed in terms of student outcomes taken in combination with degree of institutionalization within the individual organization of higher education. "Most common and least effective" of these are "isolated courses in remedial skills"(p. 5), followed successively by assistance provided to students on a one-by-one basis (e.g., individual tutoring), learning activities linked to specific courses (e.g., adjunct or supplemental instruction), and, finally, "comprehensive learning systems in academic courses" (p. 5).

These program types, according to Keimig (1983), delineate the possible organizational structures that learning improvement programs may take. She further asserts that structure contributes to or limits student achievement and program outcome(s) more than any other single program factor. While admitting the unavailability of conclusive evidence for her claim, Keimig also claims that the common characteristics of successful learning improvement programs are comprehensiveness of support services and, citing Grant and Hoerber (1978) and Roueche and Snow (1977), complete institutionalization within the organization, including being organizationally structured with divisional or departmental status.

Examination of Keimig's four types suggests that they are not necessarily structural types, however; but are, instead, types of interventions. That is, they are forms of activities designed to intervene with students, in instances where students are experiencing or might be expected to experience academic difficulty, to help resolve or prevent their problems. While it is useful to have such an intervention typology available for use in classifying developmental and remedial strategies, Keimig's typology appears to have little to say about how developmental educational programs are formally organized and structured, where they fall within the greater organization of the institution of higher education, or how they articulate with other parts of the organization. In that absence, her typology appears to be more useful in identifying and comparing intervention activities than in identifying and comparing the programs or divisions charged with carrying out such activities within organizations.

It is clear, however, that she recognizes that developmental education may have a place in the formal structure of the organization as a whole, and that it may articulate with other parts of the organization. She argues that successful programs have either departmental or divisional status--a formal organizational structure consideration--and that interaction must occur between developmental educators and other faculty members, counselors and advisors, and administrators outside the developmental department or division if maximal gains in GPA and retention are to be obtained. Following Stufflebeam's (1971) lead, Keimig recommends that the "regular" (nondevelopmental) programs' policies and practices lend to the success, or lack thereof, of the developmental program and must be evaluated with it if accurate attribution of outcomes is to be made.

To that end she lists "Critical Variables for Learning Improvement Programs". Those are as follow:

- Goals, Objectives, and Rationale for Instruction
 1. Developmental program goals
 2. Perceptions of institutional responsibility
 3. Methods for choosing instructional objectives
 4. Rationale for learning services
 5. Compatibility of developmental goals with regular program and institutional goals
 6. Attitude toward nontraditional students
 7. Structure of the developmental program
- Instructional Methods and Content
 8. Methods of instruction
 9. Responsiveness to students
 10. Development of cognitive and basic skills
 11. Affective development of students
 12. Control for learners success
- Institutional Policies and Standards
 13. Directing students into appropriate courses and programs
 14. Definition of competencies in academic courses
 15. Credit earned for remedial developmental study
 16. Systematic procedures for advisement
 17. Organization of the developmental program within the college
 18. Institutionalization of developmental services
- Professional and Paraprofessional Staff and Roles
 19. Regular course instructor's role
 20. Developmental program staff and role
 21. Counseling staff and role
 22. Faculty and staff development

- Evaluation of Learning Improvement Programs
 23. Institutional context and outcomes
 24. Student outcomes
 25. Academic standards and the grade point average
 26. Ongoing evaluation (p. 27)

Examination of these variables, singled out by Keimig as being "critical," suggests that over half of them (variables 2, 5, 6, 7, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, and 25) fall outside the direct control of the learning improvement program. Therefore, it seems evident that, to Keimig at least, successful articulation with other parts of the organization of higher education is a necessary condition if learning improvement programs are to have desired outcomes.

To summarize the discussion of Keimig: her typology appears to be an intervention typology rather than an organizational or structural typology. However, she seems to suggest that the structure or organization of developmental programs makes a difference in outcomes and that outcomes are not solely contingent upon the formal program of developmental education, but also reflect articulation with, and the activities of, other parts of the organization.

Keimig is further concerned about use of available research as a basis for program planning. She indicates that inadequate or inconsistent terminology, quantitative measures derived from different types of programs and statistically treated as though qualitative differences among programs are nonexistent, and attribution of program outcomes strictly to the learning improvement program being evaluated without consideration of institutional or organizational factors external to the program itself, may be misleading. In this she not only expresses practical concerns, but also concerns having implications for research in developmental education.

The NADE self-evaluation guides: Models for assessing learning assistance/developmental education programs (1995) (hereafter, Self-evaluation guides), prepared by the Joint Professional Standards and Evaluation Committees of the National Association for Developmental Education (NADE) and the College Reading and Learning Association (CRLA), represents the understandings of the memberships of the two principal professional organizations in postsecondary developmental education as to the required and desirable characteristics of three forms of developmental intervention programs, and resolves one of Keimig's concerns

by presenting a glossary of terms associated with developmental education as currently practiced and in common use among practitioners. (This glossary is reproduced as Appendix A.) This should assist researchers in standardizing terminology and, as noted in Chapter One, the glossary is the basis for terms used in this study.

The intervention program types represented in Self-evaluation guides are tutoring services, adjunct instructional programs, and developmental coursework programs, with a separate section on the teaching/learning process in developmental education in general. Although the Self-evaluation guides describes required and desirable characteristics and practices within each type of developmental program, it does not describe desirable placement of such programs within the organizational structure of the institution. Self-evaluation guides also fails to suggest a reasoned decision-making process for choosing which of the alternative developmental program types is best suited to a particular environment in which particular outcomes are expected. In short, developmental educators involved in developing Self-evaluation guides have looked quite minutely at the internal mechanisms of their intervention programs but largely have failed to examine placement of those programs within the larger context of the entire institution of higher education.

Nevertheless, Self-evaluation guides indicates that articulation and interaction with other subsystems of the institution are an important part of learning assistance/developmental education programs in the statement, "The Self-evaluation guides can direct effective program development by facilitating consideration of all components relevant to quality programs" (p. vii). That such organizational components are considered essential to the developmental education process is indicated by including evaluative statements regarding the presence of contacts with other institutional subsystems or the developmental program's role as a subsystem of the institution in program evaluation. Examples of statements from Self-evaluation guides include supporting and serving as a resource to academic departments and their faculty, compatibility and cooperation with other departments, making referrals to other parts of the institution, institutional organizational charts, and representation on extradepartmental committees and activities. (For a complete summary of indications to be found in Self-evaluation guides, please see Appendix B.)

The statements from the greater discussion in Self-evaluation guides of assessment of interventions noted above and presented in Appendix B help make manifest the tacit understanding that formal and informal organizational structures associated with programs of developmental education can be identified and that they may make important contributions to program success. While included as parts of guides to assessing three different developmental education intervention types--tutorial services, adjunct or supplemental instruction, and developmental courses--, they clearly imply that these interventions and the programs providing them do not operate in an organizational vacuum. Instead, there is recognition of organizational factors at work in developmental programs. These may include recognition of the importance of the formally structured organization within colleges and universities, as represented by references to organizational charts. They may also represent recognition of the concept of an informal organization acting in support of developmental education programs, as represented by references to academic departments, other student support services, and so forth.

Linda Tomlinson's 1989 ASHE-ERIC Report, Postsecondary developmental programs: A traditional agenda with new imperatives, argues that the growing diversity of postsecondary students has triggered a matching diversity of developmental program models. She lists among these: campus-based tutorial/remedial programs, outreach programs, assistance centers, as well as off-campus programs. She further describes the activities designed to assist developmental students as "interventions" (p. iii). Tomlinson categorizes the teaching/learning process, counseling, peer support, and supplemental use of media and the arts as examples of developmental interventions.

Significantly, Tomlinson (1989) distinguishes between types of intervention and types of programs, stating "program descriptions indicate which services are offered, and types of interventions indicate the manner in which those services are provided and their affective intent" (p. 26). However, when she discusses programmatic models, she suggests that the most common types are either the "tutorial/remedial" model (p. 29) or the "interdisciplinary" model (p. 29), each of which actually appears to be a way of describing the manner in which intervention activities are carried out (i.e., as special developmental courses or as activities

integrated in regular, college-level courses). These approaches might be described as , respectively, vertical and horizontal models.

These ways of describing models appear to be consistent with the inwardly-looking approach of Keimig or the Self-evaluation guide. However, Tomlinson (1989) further notes, "From a global perspective, successful programs are found to have two characteristics in common: comprehensiveness in their support services and institutionalization within the academic mainstream" (p. 41). Roueche, Baker, and Roueche (1984), Ross and Roe (1986), and Davis, Burkheimer, and Borders-Patterson (1975) are cited in support of this contention that supportive institutional policies and articulation with other programs within the institution are necessary for successful outcomes in developmental programs.

Although her work does not attempt to explore the formal and informal organizational patterns of developmental programs within institutions of higher education, Tomlinson (1989) seems to recognize that these have considerable impact on program success. She recommends that programs become integral parts of existing schools or departments within the organization as means of obtaining academic recognition, better institutional funding, and increased opportunities to work cooperatively with other academics in curriculum development and research. These recommendations appear to imply both formal and informal structural articulation.

A very limited review of the literature, Developmental Instruction: An Analysis of the Research, compiled by Kulik and Kulik and published by the National Center for Developmental Education with support from the Exxon Education Foundation in 1991, suggests several ways in which developmental education efforts might be categorized. First, colleges and universities have established remedial or developmental programs which "often include special recruiting, financial aid, and intensive counseling. . . [and] a course or set of courses covering content and skills usually mastered in precollege courses" (p. 2). Secondly, colleges and universities have accepted use of mastery learning (Bloom, 1968), personalized instruction (Keller, 1968), or similar instructor-based techniques. Finally, colleges and universities have developed programs specifically aimed at overtly teaching learning strategies to developmental students.

While the Kuliks' review appears to overlook other useful sources while overemphasizing their own publications, it is worth noting as a categorization of some types of developmental education efforts. An intervention typology can be extracted from the three efforts noted by the Kuliks. They mention two types of teaching strategies presented as interventions: overt efforts to help students learn-to-learn and course-based developmental efforts. They further mention the establishment of recruitment, financial aid, and counseling efforts specifically aimed at contributing to the success of developmental students in colleges and universities. Where such services fall in offices and departments whose officially-recognized responsibilities are not specifically developmental education, they may indicate aspects of an informal network engaged in developmental education that not overtly recognized as being part of the formal or official developmental education program. Despite discussing programmatic interventions, the Kuliks do not discuss how those programs are organized, either internally or as parts of the larger organization of the institution of higher education.

A geographically-limited study of remedial and developmental education, consisting of responses to survey research from 606 two- and four-year public and private institutions in the South, is available from the Southern Regional Education Board (SREB) (Abraham, 1992). Respondents represent about 73 percent of all SREB institutions, with response rates ranging from 50 percent from private two-year institutions to about 88 percent from public four-year colleges and universities. Between 41 percent and 58 percent of all responding institutions indicate that developmental courses were offered by academic departments, while about one third of all respondents note a separate division providing remedial courses in basic academic subjects. The SREB report, then, supports the notion that developmental programs may be organized differently or located variously within the institutional organization.

The SREB study also finds a variety of intervention activities being carried out in its responding institutions. Abraham (1992) notes that, overall, about 97 percent of respondents report providing remedial/developmental courses, about 82 percent providing peer tutoring and about 64 percent providing faculty tutoring, just over 60 percent report the provision of additional diagnostic testing, nearly 87 percent provide counseling, and about 86 percent have learning assistance labs or centers on campus. Another 14

percent reported using other approaches such as summer programs, learning and study skills development in special courses, computer-assisted instruction, and special testing services to identify students with learning disabilities.

Another attempt to develop a typology for developmental education programs is represented by the work of Baker and Reed (1980) who identified three approaches to the process of identifying developmental students and placing them in learning assistance programs. They suggest that programs may be classified as being "free choice" models, "assessment" models, or "rigid choice" models. In the first of these, students freely elect--with advice from an admissions counselor having access to the students' prior records--whether to take developmental courses or not. Institutions using the assessment model actively encourage, but do not require, students to use a variety of diagnostic instruments designed to be interpreted by learning professionals in advising students about need for remediation. The third model, rigid choice, involves mandatory assessment and placement, including required course sequences, for all incoming students.

The Baker and Reed classification is useful in suggesting that it is possible to distinguish among various institutions' developmental education programs on some basis other than types of academic interventions. This classification seems to indicate that institutions using the same intervention strategy could well use different assessment and placement models. While the Baker-Reed classification does not necessarily imply different forms of organizational structure, it does indicate that intervention type is not the only variable potentially involved in determining outcomes of developmental programs.

In an earlier review of the literature on developmental education, Sharma (1977) reviews reports of developmental programs in a number of institutions. However, she fails to cite her sources adequately, making it difficult to assess the comprehensiveness of her review. She develops a list of program components and objectives that she claims to be generalizable for use in program evaluation for developmental student academic support programs. She concludes that there are seven basic components of academic support services programs: tutorial assistance, academic and special counseling, career counselling, summer orientation, reading and study skills laboratory, writing laboratory, and student recruiting and selection.

Sharma states the objectives of tutorial services to be reduction of attrition, development of confidence among, and provision of tools necessary for effective competition for developmental students. The objectives of counseling include, according to Sharma, improving course selection, reducing frustration and attrition, providing "relatively smooth going" (p. 50) for developmental students, and making appropriate career choices. The objectives of summer orientation programs include reducing "hazards experienced by high-risk students upon entering institutions of higher learning" (p. 50), failure, and the attrition rate. The objectives of the reading and study skills laboratory, Sharma writes, are to assist in "gain of academic success by furnishing the skills of reading and studying" (p. 51) and "to establish the vehicle to which reading and study skills are easily and advantageously aligned" (p. 51). The writing laboratory is to help students improve class grades by improving writing ability, to assist students in "developing a sense of strength as a writer" (p. 51) and perceiving personal progress in writing, and to increase student potential for completing the college degree. Finally, the objectives of the student recruitment and selection process are to improve student awareness and understanding of various support services, to improve students' chances of being admitted to a university, and to improve public relations between institution and community.

Sharma's identification of component parts of intervention programs has utility and is more comprehensive than the Self-evaluation guides in recognizing the extent to which intervention programs and activities are likely to be spread across the entire organization rather than located strictly in the areas formally recognized as being "The Developmental Education Program." However, her most significant contribution to the field might lie in sets of questions she poses with regard to programs instituted by colleges and universities to serve the marginal student:

1. What is good for academic achievement motivation as a middle-class phenomenon? Is it applicable to generate this motivation for students with marginal high school academic records?
2. Also, given the possibility that ethnic culture components control to some extent the characteristic responses to a given stimulus, are there variations in the most effective interventional strategies for the different sub-groups?
3. What, indeed, are the support strategies, and what forms do they take in different kinds of higher education climates? What strategies appear most effective, and what personal, programmatic, or institutional factors moderate their effectiveness?
4. What is the attitude of the host institutions toward the enrollment of these students and the support programs? What is the attitude of other students, faculty, and administrators toward the programs and their students? What changes, if any, may be directed in institutional

policies, curriculum, or climate? Is there any evidence that these programs are changing the face of higher education or that these programs are being influenced by traditional mechanisms of the host institutions? (pp. 31-32)

In posing these sets of questions, it appears that Sharma is suggesting that the design and activities of successful developmental education programs cannot simply be prescriptive remedial programs segregated from the remainder of the institution, but rather must be integrative programs sensitive to the varying needs of students, situated variously in differing organizations, and both sensitive to and involved with organizational structure, administration, policy and planning, culture, and climate. In short, she argues that the "best" program for a particular situation or clientele might vary with several institutional factors and appears to include subsystems (von Bertalanffy, 1950, 1968; Boulding, 1956; Katz & Kahn, 1966; Thompson, 1967) of the organization that may not be overtly "remedial" in nature (e.g., counseling, career services, admissions).

Sharma attempts to do two things. One of these is to identify appropriate parts of a comprehensive developmental education program and their objectives, and the other is to consider the relationship of developmental students and programs with the larger context of the institution of higher education. It would appear that she at least partially succeeds with the former concern but does no more than to raise the latter issue. However, it seems clear she recognizes that micro-examination of component interventions used in developmental programs is necessary to developing successful programs but not sufficient in absence of understanding the interrelationship of efforts on behalf of developmental students with the institution as a whole.

In a later look at developmental interventions as remedial course-based interventions, Wright and Cahalan (1985) analyzed data reported by a sample of 511 colleges and universities drawn from the Higher Education General Information System enrollment report for 1982. They stated the objectives of their study as follow:

to provide a national picture of the extent of remediation, characteristics of current programs and measures of program effectiveness at the college level Specifically the study focused on providing reliable national estimates of: 1) the number and type of courses offered; 2) the percent of students taking remedial courses; 3) changes in enrollment in recent years; 4) characteristics of remedial programs; and 5) rough measures of remedial program outcome (course completion, student retention and self-evaluation measures). (p. 1)

It is worth noting some characteristics of the Wright/Cahalan approach. First, although they used the term "program," the authors limited themselves largely to course-based remedial or developmental interventions. Second, they recognized that what is considered "remedial" or "developmental" is more nearly a function of institutional type and selectivity than a descriptor of a particular quality of a student. That is, "the identification of students lacking the skills to perform college level work is a function of the selectivity of the institution and not a uniform standard. What is considered remedial in one institution may not be so identified in another" (p. 7).

Wright and Cahalan (1985) identified several characteristics of remedial program interventions. They found that about 90 percent of the responding colleges and universities offered basic skills assistance, diagnosis of learning disabilities and assessment for deficiencies, learning assistance laboratories, tutoring, and counseling. In about one-third of responding institutions, the remedial and developmental studies portions of the institution formed a separate department or division within the institution. Twenty-four percent of responding institutions had pre-matriculation summer programs for developmental students.

It is clear from their report that developmental or remedial education is widespread among colleges and universities of all types. It is also clear, despite the authors' focus on course-based remediation, that intervention activities extend beyond the remedial classroom. Furthermore, they report that about one fourth of the programs are formally organized as a separate structural division of the college or university, while not clarifying how the remainder are structured or where they fall in the formal structure of the organization. It is unclear how or why any institutions choose the type of program offerings they have, the organizational structures (formal and informal) programs take in the responding institutions, or how type of program and its articulation with the institution and its stakeholders effects program outcomes, as Wright and Cahalan do not investigate those areas.

Perhaps the most important contribution Wright and Cahalan make to thought about developmental education, however, might not rest in their statistical analyses. Their article's persevering contribution to thinking about developmental education may be the idea that every institution probably has students who are remedial or developmental for that institution, or a particular program--or even a course--within it, and need

assistance to be successful in that particular instance. Put another way, by definition, half of the students in any course, program, or educational institution will fall below the median for that course, program, or institution, regardless of how academically selective or elite the program or institution may be. By extension, therefore, most, if not all, institutions of postsecondary education are likely to have students who are developmental or remedial for that institution, even if for no other. It is possible, then, that most, if not all, institutions of postsecondary education have some program or system intended to assist those students in being successful.

The value of this line of thinking may be severalfold: (1) it suggests a pervasiveness for need of developmental education that is nearly universal among colleges and universities of all types; (2) it suggests that students' need for interventions and the programs that provide them are not necessarily limited to non-elite educational institutions and non-elite student populations and, thus, helps remove some of the potential for stigma from developmental education; and (3) it suggests that close examination of a number of representative colleges and universities may discover developmental organizational forms and/or intervention types not commonly recognized as being developmental in nature due to the obscuring association of developmental education with non-elite students or non-elite educational institutions.

In yet another look at developmental interventions, Ross and Roe, in their 1986 Phi Delta Kappa Fastback--The Case for Basic Skills Programs in Higher Education--, also take a developmental course-based approach to developmental education. They suggest that such courses be supplemental to regular college courses. Keys to success, they argue, are institutional commitment to developmental programs, adequate finances, and a fulltime director. While incomplete in their consideration of types of developmental intervention possibilities, Ross and Roe seem to conclude that integration with the larger institution and a climate of support are necessary, if not sufficient, for the success of developmental programs.

Formal and Informal Organizational Structure. Boylan, Bingham and Cockman (1988) address the placement of programs of developmental education within the larger context of the institution. Their article reports a re-analysis of data gathered by Spann and Thompson (1986) in an effort to identify exemplary developmental education programs. While warning that the data collected by Spann and Thompson were limited and might not be generalizable due to sampling and reporting problems, Boylan et al. (1988) argue that

they represent a "pool of information that can be used to identify general trends in the organization and administration of developmental programs" (unnumbered document). Their re-analysis of the Spann/Thompson data concludes that 79 percent of all reporting institutions include developmental education programs within Academic or Instructional Affairs, twelve percent include them with Student Affairs/Student Development, and 9 percent fall into some other configuration. Of the nine percent falling into "other," nine of thirteen program heads report directly to the president of the institution.

Boylan et al. also investigate the reporting, or supervisory, patterns for developmental programs in the Spann/Thompson data. They find that most developmental programs tend to report directly to the chief academic affairs officer, while only about ten percent report to an administrator whose rank is less than that of dean. Forty-nine percent of the programs are headed by an individual with the title of "Director," 18 percent by a "Coordinator," and 13 percent by a "Department Chair or Head" (Boylan et al., 1988). Of the balance of programs reporting, only 4 (or, 5%) are led by an individual whose title was lower than Assistant Dean. Taken in balance with the location of developmental programs and the reporting chain, the authors suggest that developmental programs are considered important enough to be placed in a prominent division of the institution, to have direct access to administrators with influence in making institutional policy, to be headed by an individual whose position in the campus hierarchy is at least as high as that of a department chairperson, and to have recognition of at least the level of an academic department.

Boylan et al. noted the evident importance of developmental education programs, as indicated by their placement within the administrative and organizational structures of the reporting institutions. However, they did not attempt to develop a rationale for making decisions for those placements. Therefore, their re-analysis of the data notes only where formal developmental education programs are placed, according to data collected no more recently than 1986, and to whom reports are made by whom.

An earlier work dealing with the organizational aspects of remedial education, Roueche and Kirk's (1973) Catching up: Remedial education, suggests that some programs of remedial or developmental education (the authors use the terms interchangeably) may be described as "a block-type, vertical team operating within a separate division of the college" (p. 14). They describe this subsystem within Tarrant County Junior College-

South Campus (Tarrant County, Texas) and El Centro College (Dallas, Texas) as being a separate division of the college staffed by academic instructors representative of, but not members of, the regular academic departments of the colleges. Cohorts of "educationally-disadvantaged students" (p. 15) are enrolled in this division for remediation, are block-scheduled, and are team-taught by the divisional academic staff, who evidently remain with the cohort for an extended period of time.

While the authors use the term "vertical" to describe the organizational aspects of the developmental education programs described above, they also discuss several other programs, organized differently, for which they develop no special identifying term. They identify developmental education programs at San Antonio College (San Antonio, Texas), Southeastern Community College (Whiteville, North Carolina), and Burlington County College (Pemberton, New Jersey) as being examples of programs that are not separated into a freestanding division of the organization.

These appear to be the results of interdepartmental liaison among academic departments or the efforts of individual academic departments to provide course-based or individualized remediation for entering students. These efforts might be characterized as limited to development of introductory, or basic, academic skills, with very flat organizational characteristics and little or no concern with other aspects of student development. While Roueche and Kirk do not use this term, such programs might be characterized as "horizontal" or "lateral" in contradistinction to the "vertical" organization of programs at Tarrant County and El Centro. This distinction between vertical and non-vertical program structures presages those of Tomlinson (1989).

Roueche and Kirk (1973) make a number of recommendations about the organization and operation of programs of developmental education. Among these are three that seem especially relevant to the study undertaken here. They recommend that "a separately organized division of developmental studies [the vertical organizational form] should be created with its own staff and administrative head" (p. 83), arguing that such an organizational structure facilitates communication among faculty and students, allows students to experience success, helps students to develop positive feelings about themselves and their role as a student, and provides opportunities for meaningful career guidance. They further recommend that the transition from developmental

to the regular courses should be smoothed and made less abrupt. This seems to suggest a considerable amount of articulation between the separate developmental program and other academic programs and college departments and offices. Finally, Roueche and Kirk advocate development of special recruiting strategies to identify and enroll students requiring developmental assistance to be successful in college. They state unequivocally, "Traditional recruiting strategies (like traditional teaching and counseling) are likely to be ineffective in reaching the nontraditional student" (p. 91). This recommendation, too, seems to suggest that subsystems of the organization outside the developmental program *per se* (e.g., enrollment and admissions) need to be actively involved with the developmental educational subsystem.

Roueche and Kirk's very early appreciation of the importance of developmental education, as developed in the book reviewed here, is noteworthy. Further, their hint that the organizational structures of programs of developmental education may vary is suggestive, especially when compared with that of Boylan et al. (1988). In the fifteen years between the Roueche and Kirk book and Boylan et al.'s article, the basic structures identified by Roueche and Kirk seem to have endured, while developing minor variations within each type. Finally, their recommendations about integrating work of the developmental education program with that of other institutional organizational subsystems may be important in broadening recognition of what is entailed in developmental education. However, it should also be noted that generalizations based on this work must be guarded as it is based on a sample of only five community colleges self-reporting that 50 percent or more of their developmental students were retained after completion of their developmental programs.

One of the most recent studies of developmental education is The National Study of Developmental Education, commonly referred to as the "Exxon Study". (Information from this study is used with permission of the researchers; see Appendix C.) Funded by the Exxon Education Foundation and executed by the National Center for Developmental Education, this national study has several goals. These include:

1. To describe how developmental education programs deliver their services in representative American colleges and universities;
2. To assess the effectiveness of this delivery in improving students' academic performance (e.g., grade point averages, grades in specific courses);
3. To assess the effectiveness of this delivery in improving students' retention and graduation rates;
4. To determine which delivery methods are most successful in which institutions;
5. To determine what is not known about developmental education; and

6. To establish a new research agenda for the field of developmental education based on the findings of this study. (Boylan, 1992b, unnumbered document; Boylan, Bonham & Bliss, 1992, p. 1)

As of November 1992, the researchers described goals one through three as completed, with goals four through six yet to be completed.

In addition to a comprehensive review of the literature of developmental education, descriptions of individual developmental programs were collected for this study. Information collected from participating colleges and universities included information about the characteristics of students participating in developmental education programs, descriptions of the components of individual programs of developmental education, and descriptions of characteristics of participating institutions of higher education (Boylan, Bonham, & Bliss, 1992). These include organizational structure, administration, purpose, assessment, placement, developmental course offerings, tutorial services, advising/counseling services, program evaluation, and related information regarding personnel, space, and budgets (Bonham & Bliss, 1992).

A sample of 150 institutions was selected as representative of the entire population of American institutions of higher education (Boylan & Bonham, 1992). (See Appendix C for a list of participating institutions.) The respondents are described as community colleges (28 percent), 4-year private colleges (33 percent), 4-year public colleges (21 percent), research universities (9 percent), and technical colleges (10 percent) (total equals 101 percent, presumably due to rounding error) (Boylan, Bonham, & Bliss, 1992). Institutions are categorized as representing five general geographic areas: (1) New England/Mid Atlantic, 24 percent; (2) South Atlantic, 16 percent; (3) Great Lakes and Plains, 31 percent; (4) East & West South Central, 16 percent; and (5) Mountain & Pacific, 13 percent (Boylan, Bonham, & Bliss, 1992).

As the systems used for grouping and classifying the responding institutions in the Exxon Study are somewhat idiosyncratic, it is difficult to determine the degree to which they are actually representative of American institutions of higher and postsecondary education. It might have been made simpler for readers of research to assure themselves on this point had the researchers used some more widely used and recognized standards for grouping institutions--perhaps the Carnegie Classifications of institutional types and the regional

accrediting agencies' geographical bounds. Comparison with the Carnegie Classification categories suggests that the sample of participants may not be representative of the universe of institutions.

The 1994 edition of A Classification of Institutions of Higher Education distributes the numbers of educational institutions among the Carnegie categories as set out in the first through the fifth columns of Table 1, and the classifications and findings from the Exxon Study are presented in the sixth and seventh columns. Research and doctoral-granting institutions appear to be overrepresented by nearly 50 percent. There is a considerable difference in the percentage of institutions apparently consigned to the "four-year" category. It is also difficult to conclude whether the Exxon Study's "Community Colleges" and "Technical Colleges" should be grouped together as comparable to the Carnegie category "Two-Year Colleges", to which they are about equal in percentage, or how the Carnegie classification "Specialized" was treated in the Exxon Study. While the differences between Carnegie numbers and the Exxon findings are not necessarily significant, there are differences among them that cannot be readily reconciled on the basis of the information available from the Exxon Study reports.

Further, although the authors state that 150 institutions "representative of all colleges and universities in the United States" (Boylan, Bonham, & Bliss, 1992, unnumbered) were asked to be a part of the study as a result of "circular systematic random sampling process. . . [to ensure] that institutional types would be represented in the sample consistent with their representation in American higher education" (Boylan, Bonham, & Bliss, 1992, unnumbered), it seems evident that all 150 did not actually participate, based on reports from the study. The number of participating institutions is variously reported as being 108 (Boylan & Bonham, 1992); 112, 116, 123, 137, and 144 (Boylan, Bonham, & Bliss, 1992, unnumbered); and 112 (H.R. Boylan, personal communication, November 20, 1995). Depending upon which of these numbers one chooses to use, from four to 28 percent of institutions in the sample are missing and there is no clear evidence that the responding institutions were as representative of all colleges and universities as the original sample was intended to be.

Moreover, the boundaries used to develop the geographic areas used in the Exxon Study are not described, nor do they correspond to the six subsample lists composed of the participating institutions (See

Appendix C for lists.). Therefore, it is also difficult to tell whether the sample is geographically representative of all American colleges and universities. Given these questions about the representativeness of the sample by institutional type or geographic location, it is open to question whether the Exxon Study's authors met their sampling criterion of complete representation of all colleges and universities in the United States.

Nevertheless, the study is a useful step in the evolution of research in postsecondary developmental education. Goals Two and Three are much advanced as a result of this work and it is possible to suggest--with substantial amounts of supporting evidence--that developmental education is effective in improving students' academic performance and retention/graduation rates, overall (Boylan, Bonham, & Bliss, 1992). It has also provided potentially suggestive information about the ways in which developmental education programs are structured.

Table 2, "Highlights of Findings on Developmental Programs", is an updated synopsis of findings forwarded by Hunter R. Boylan in accompaniment to personal communication dated November 20, 1995. This table shows that just over half of the 112 two- and four-year institutions reporting have a centralized organizational structure and that a majority of all programs involved advising and counseling services and tutoring. Another undated, unnumbered document prepared by Bliss, Boylan and Bonham, titled "Characteristics of Developmental Programs" (distributed at the 1st National Conference on Research in Developmental Education, Charlotte NC, November 1992), defines "Organizational Structure Centralized/Decentralized" as :

Courses and support services may be offered by a separate division, center or department of developmental studies. This is referred to as a centralized organizational structure. Alternatively, these courses and support services may be offered by individual academic departments. When this arrangement occurs, it is referred to as a decentralized organizational structure. Student affairs/Academic affairs/Other division Developmental education programs may be organizationally situated in various parts of the administration structure of an institution.

Taking the two of these sources of information together, it may be supposed that a "vertical", or separate division, organizational structure exists in just over half of the institutions responding to the Exxon Study. However, it is not immediately evident from published reports whether the centralized and decentralized structures are actually mutually exclusive. That is to ask, does reporting of a centralized structure mean that no

services are provided by individual academic departments? Furthermore, no details are provided as to how these centralized organizational structures are fitted into the overall structures of their home colleges and universities, or whether all separate divisions are structured identically. Neither is information provided as to the structuring of the remainder of programs. Thus, further work is needed to clarify these matters. Additional research may also be needed to clarify whether student assessment, tutoring, advising and counseling, and evaluation of program components are tasks that are carried out by the program of developmental education themselves, or are responsibilities of another part or parts of the institution. If these, or other similar tasks, are not a part of the "centralized" developmental programs, then the programs may be far more decentralized than reported in the Exxon Study documents.

Roueche (1984) develops a list of institutional elements critical to success of developmental programs. These include strong support from institutional administration, mandatory entry-level student assessment and placement based on the results of assessment, tight interface with nondevelopmental course sequences, monitoring of developmental students' behavior, and comprehensive data collection for use in program evaluation. He is joined in this suggestion that outcomes of developmental programs are influenced by other parts of the educational organization by Flamm et al. (1984) who recommends precollegiate outreach and consultation, Cramer and Liberty (1981) who urge coordinating services with probationary actions and status, and Stumhofer (1984) who suggests that admissions offices should develop academic profiles of each entering student. Bray (1987) argues, "The premise that individual student success is closely related to an institution's ability to organize for directing the student to this success is important to the discussion" (p. 38).

While these activities are posited as factors contributing to the success of developmental programs, they may also be seen as examples of ways in which the formal developmental program structure is articulated with that of other subsystems of the educational organization in support of developmental aims. Such activities cannot be effectively carried out in most colleges or universities without the cooperation of offices engaged in student recruitment, admissions, enrollment, and records; the various academic departments and programs; faculty, counselors, and guidance personnel; and institutional research. It might be argued, therefore, that the

informal system supporting developmental education in the organization may be much larger and more pervasive than the formal system of developmental education.

Table 1.--Comparison of Classifications of Institutions of Higher Education in the Exxon Study with the Carnegie Classifications

Type of Institution by Carnegie Classification	Number of This Type	Percent of All Institutions: Carnegie Classification	Aggregated Carnegie Types: Number of These Types	Aggregated Percent of All Institution	Type of Institution Exxon Study	Percent of All Institutions: Exxon Study
Research I	52	1.8%	173	6.1%	Research Universities	9.0%
Research II	40	1.4				
Doctoral I	53	1.9				
Doctoral II	28	1.0				
Comprehensive I	323	11.0	1177	41.4	4-Year Public & Private Colleges	54.0
Comprehensive II	133	4.6				
Liberal Arts I	146	5.1				
Liberal Arts II	575	20.3				
2-Year	1063	37.5	1063	37.0	Community Colleges	28.0
Specialized	424	14.9	424	14.9		
					Technical Colleges	10.0

Bray (1987) further suggests that student assessment at three stages is necessary to provide information needed to aid students' in achieving their academic goals. Entry-level assessment should be done with all entering students, while exit-level assessment should be conducted both at the end of individual

Table 2.--Highlights of Findings from the Exxon Study

Program components related to academic success	Percent of programs with component		
	Two-year Colleges	Four-year Colleges & Universities	All Colleges & Universities
Centralized organizational structure	52%	52%	52%
Mandatory assessment	68	91	76
Mandatory placement	35	69	55
Tutorial program with tutor training	55	80	70
Tutorial program evaluation	25	48	39
Advising/ Counseling services	73	69	71
Evaluation of Advising/ Counseling	27	32	30
Program evaluation	14	25	20

Source: National Study of Developmental Education
 Prepared by Hunter R. Boylan, Barbara S. Bonham & Leonard B. Bliss

courses and at program or degree completion. Bray conceptualizes this in operation as comprising four separate but interrelated systems: the guidance/placement system, the program delivery system, the research/evaluation system, and the assessment system. The guidance/placement, research/evaluation, and assessment systems are necessary to provide information guiding student counseling and instruction, focusing on achievement in learning. Although Bray does not explicitly name the subsystems of the educational organization she expects to be parts of these four systems, their functions seem to imply extensive cooperation

among units involved with recruitment, admissions, guidance and counseling, as well as the developmental education program, academic departments, institutional research, and systems-level administrators.

In an early report produced by the Southern Regional Education Board (SREB), Roueche and Roueche (1977) foreshadowed this point of view, writing,

Developmental education cannot be characterized by a limited definition of verbal and quantitative skill remediation for the low achiever. It spans a wider base. It signifies (1) efforts to take a student from where he is to where he wants (needs) to go, and (2) efforts to provide both the academic and human skills to make that movement. (p. 1)

They suggest these efforts must include the policies and processes used in recruitment, placement, evaluation, and follow-up of students. In addition, they argue that institutional financial support for developmental programs is a key characteristic of successful programs, at least in part because institutional support represents a level of commitment and positive attitude toward developmental education on the part of administrators that is recognized and reflected by the remainder of the institution.

In discussing the components of formal program design, Roueche and Roueche (1977) identify four basic patterns: "isolated developmental courses in disciplined curricula," "an interdisciplinary group of instructors who remain attached to their disciplines organizationally, and who coordinate with instructors from other disciplines and with counselors," "a division or department of developmental studies which plans, coordinates, and allocates funds for instruction, counseling and other support services," and "others" (p. 20-21). Among "others" they note the presence in community colleges of combinations of the first three, course-based programs in occupational or continuing education programs, sequencing departmental courses with developmental courses, and learning assistance centers available to all students. Among four-year institutions, the pattern of "others" varies from that in community colleges, with more formally structured development plans, greater counseling center involvement, peer tutoring, and more emphasis on faculty advisors. Community and senior colleges reported using the four types of structures as Summarized in Table 3.

The authors state that the separate division organizational structure is the most successful, but argue that overall compatibility with institutional mission is the key factor in program success. However, they also urge that institutional policies be considered in light of the needs and biases of nontraditional students. For example, they state that such students are often suspicious about efforts to obtain more than the essential

information from them during application and enrollment processes; therefore, they urge information collection be minimized during these processes. Further, the traditional curriculum may seem irrelevant to nontraditional students because of their lack of familiarity with college; therefore, they urge stressing the practical and personal relevance of each program offering to the developmental student in meeting his or her goals. Finally, counseling, financial aid, and other services need to be keyed to the needs of the developmental student, especially where limited basic skills or orientation to the culture of college may limit students' ability to cope.

Table 3.-Summary of Structures of Developmental Education Programs

	Community Colleges	Senior Colleges
Isolated Developmental Courses	34%	32%
Interdisciplinary Group of Instructors	18%	11%
Independent Division or Department	30%	24%
Others	18%	32%

Source: Data from Roueche & Roueche (1977), p.21.

Thoughtful reading and consideration of the Roueche's report for SREB indicates that they predict at least three definable formal patterns of organization that developmental education programs may take, based on Roueche and Snow's (1977) study. Furthermore, it is obvious that they recognize the necessity for support from and cooperation with other subsystems of the educational organization, although these linkages are much clearer in the interdisciplinary, separate division/department, and "others" forms of developmental organizations than in the apparently course-based, isolated developmental course approach. They make no effort to work out the form of the informal organization implied by these linkages.

In a mid-1980s report, the results of a national mail survey study dealing with American colleges' and universities' responses to the pervasive presence of developmental students are reported by Roueche, Baker, and Roueche (1984). Among a dozen research questions addressed by this study are the following three:

How are low achieving students identified, assessed, and placed into basic skills courses and programs?

How is the institution organized to accomplish basic skills development?

What are the elements (variables) in basic skills programs common to most colleges? (p. 4)

Although recalculation of their reported response rate suggests that it falls somewhere between 35 percent and 42 percent, rather than the 58 percent calculated by the authors, responses from 890 institutions is a sizable number, considerably larger than any other reported by researchers in developmental education. On that basis alone, this study deserves careful examination.

The authors assert that institutions with different Carnegie classifications respond differently to the presence of students who are low-achievers in each particular institutional type and cite Levine (1978), Roueche and Kirk (1973), Roueche and Roueche (1977) and Roueche and Snow (1977), in support of their assertion. Furthermore, they cite Trillin et al. (1980) in arguing that there is more than one way in which programs for such students may be effectively structured, taking a pragmatic stance in support of whatever form works best in particular organizations. They hypothesize that responses would, however, fall into one of the following organizational forms: "(1) a comprehensive division of basic skills; (2) a comprehensive department of basic skills; (3) a separate basic skills department; or (4) basic skills courses as part of an academic department, such as English or math. . ." (p. 39).

Roueche, Baker, and Roueche (1984) find that the most common form is that of offering basic skills courses as part of an academic department in all reporting Carnegie categories, except major research universities. Major research universities report a greater percentage of organizations following the separate divisional form. The authors speculate that the greater number of developmental students to be served in such institutions is the principal factor influencing this organizational choice in large research universities. Other reported findings are summarized in Table 4.

These findings suggest a variety of organizational patterns taken by developmental education programs in higher education and attempt to associate them with Carnegie type. Curiously, however, the Roueche, Baker, and Roueche study does not include placement of tutorial programs, learning assistance centers, or other academic support programs within institutions' organizational structure. Without inclusion of

these overt contributors to the developmental education program, this study appears to offer a useful but incomplete picture of the organizational patterns within higher education.

Table 4.--Structural Organization of Developmental Skills Programs by Institutional Type

Institutional Type	Comprehensive Academic Division for:	Separate Comprehensive Department for:	Separate Basic Skills Department for:	Basic Skills Offered in Discipline Area for:
	R* W* M*	R* W* M*	R* W* M*	R* W* M*
Research University	38% 38% 31%	8% 8% 7%	23% 23% 23%	23% 50% 46%
Doctoral Degree-Grant University	19 28 25	12 12 12	9 12 9	44 56 62
Comprehensive University or College	15 11 13	16 15 12	11 13 12	47 62 59
Liberal Arts College	12 10 9	14 13 10	9 10 13	40 58 52
Community College	18 18 17	18 17 15	13 12 14	50 58 57

R* = Reading W* = Writing M* = Mathematics

Source: Organizational patterns reported by Roueche, Baker, and Roueche (1984), per Table D in College responses to low-achieving students: A national study.

The study provides two other contributions that may be of use in studying developmental education in higher education. The first of these is a weighted rank order of retention efforts (Table N in the 1984 Roueche, Baker, and Roueche document), simplified and presented as follows.

Weighted Rank Order of Retention Efforts

- 1 Institutional orientation program for new students
- 2 Job placement program
- 3 Special services for low-achieving students
- 4 Special academic programs for low-achieving students
- 5 Self-study to determine success of institution
- 6 Program to determine attrition rate
- 7 Career development program
- 8 Early warning system to identify students likely to drop out
- 9 Marketing plan for targeting recruiting of students

- 10 Exit review process for students leaving the institution
- 11 Campus-wide retention committee
- 12 Exit testing of students moving from basic courses
- 13 Staff development relating to retention
- 14 Retention task force within department or division

The importance of this listing of retention efforts may lie more in what it implies, rather than what it overtly states: a considerable number of reporting institutions appear to have gone well beyond remediation of academic shortcomings in their efforts to increase developmental students' college success and retention. If this is an accurate representation, then not only course-based developmental assistance and other academic support services are important to the success of developmental students, but a wide-ranging set of programs and activities--many of which are not commonly designated as being part of the developmental education program--are also considered important to their success by the reporting institutions. This is in accord with prior work of Roueche and Roueche (1977) in which they note

If indeed the institution assumes the responsibility for meeting the needs of low-achieving students, then developmental efforts are institutional in nature. In effect, the program will assume a position of undergirding institutional objectives, and the institution is in position to support these developmental efforts.

Developmental studies programs, to be integral parts of the institution's offerings, must be a consideration of every aspect of the institution's recruitment, placement, evaluation, and follow-up procedures. In other words, if the institution accepts the idea that incoming students are characterized by diverse abilities and deficiencies, then it will not limit the consignment of development studies to a narrow set of skills remediation or development or to a select few entering students. . .(p. 10)

Roueche and Baker return to this theme in the company of Mullin and OmahaBoy in their 1987 look at the role of open-door colleges, Access and excellence: The open door college. Focussing on the model of services provided for developmental students at Miami-Dade Community College, they note the roles of those involved in admission of students as being the first line of assessment, followed by formal assessment testing for basic skills and advisement of students. Students needing additional development of academic skills at Miami-Dade, according to their report, are advised into specific sets of developmental courses and restricted in the "regular" courses they may take concurrently with developmental courses. Exit from the developmental level requires an additional round of assessments before students may enter the general education core curriculum. The authors also note Miami-Dade's commitment to developmental students as represented by an academic "early warning" system used to identify students before academic difficulties become overwhelming

and ongoing advisement, attached to standards for and tracking of academic progress for each student enrolled at Miami-Dade, as well as individualized supplementary education services.

These tasks comprise what the authors represent as "the responsibility of matching the student to the appropriate educational program" (p. 47). They clearly involve many portions of the college outside the strictly "developmental" programs and they clearly are not limited to services provided to a few, specially selected students by a few, specially selected developmental educators. Roueche et al. (1987) sum up the inclusiveness of the program by quoting an academic dean as saying, ". . . student learning is what we are all about. Policies and procedures, programs and courses should all be evaluated in terms of their contribution to student learning" (p. 124). For a sizable proportion of students who had been involved in developmental education at Miami-Dade, the program was successful (as measured in terms of completing an Associate of Arts degree and in passing the State of Florida's mandatory exit assessment examination).

The difficulty in making program evaluations, however, is reflected in the authors' conclusion that, although they could draw a positive correlation between participation in the developmental education efforts and success at Miami-Dade, they could not determine which portions of the efforts (if any) caused the successes. This inability to identify all subsystems of the institution contributing to developmental educational efforts--a common phenomenon in the literature of developmental education--may make it difficult to isolate the variables and their effects, or to work toward understanding their interactions. Even when these can be identified (e.g., Boylan, Bonham, & Bliss, 1991; Campbell, 1981; Dickson, 1991; Montgomery, 1992), there is apparently no effort made to distinguish among the contributions of the variables.

The second potential contribution of the 1984 Roueche, Baker, and Roueche study is methodological. The mail survey instrument used by Roueche, Baker, and Roueche (1984) consisted of a cover letter and a seven-page instrument. The instrument was composed of 140 items, five of which called for checking or circling responses that best described the institution, to be used for the purposes of developing classification information. These five items comprised Section I of the instrument. An additional eight, open-ended items falling at the very end of the instrument called for the respondent to fill in information about him/herself and his or her supervisors. The balance of the instrument was composed of a series of items which merely required the

respondent to read and check appropriate response columns. The number of possible response columns ranged from three to six, with from one to three columns potentially being used for any one item. These items were intended to elicit relatively straightforward information about policies and procedures, organization for delivery of basic skills, retention programs, and plans for the next academic year. For the most part, they called for responses based on simple "yes/no" knowledge or estimations.

The methodological significance of this form of data collection lies in the fact that 42 percent of the surveys mailed were not returned at all. Of those returned, 402 institutions completed only Part I, the first five items identifying the institution, of the survey. Although the instrument does not ask for sensitive or difficult-to-obtain information and can be read in less than ten minutes, the cover letter is well done and provides contact information for respondents with questions and concerns, and a free copy of findings is offered, the percentage of complete responses returned is disappointingly low. Based on the results of this effort, mail surveys may not be the best method for gathering the data necessary to explore organization of developmental education programs in higher education. They may be especially unserviceable in getting at the ill-defined or sensitive aspects of such programs.

An example of an ill-defined aspect of developmental education may be its basic parameters; that is, where should the bounds of the developmental program be drawn? In addition to consideration of developmental education from a strictly academic viewpoint, it may also be considered from a student affairs perspective.

Student affairs organizations and student retention. Aspects of both the formal and informal organizations supporting developmental students in colleges and universities have been investigated from a student affairs perspective, usually emphasizing retention, as well as from the perspectives of developmental educators. Examples of work by student affairs and retention experts include that of Beal and Noel (1980); Noel, Levitz, Saluri, and Associates (1986); Ewell (1985); and Stodt and Klepper (1987). Beal and Noel (1980) note that intervention strategies commonly used to improve student retention include entry-level testing, counseling, and college-readiness or orientation programs, ongoing individual counseling by professionals or peers, peer tutoring, and basic academic skills development. They suggest that all forms of interventions may

be subsumed under three categories: "academic stimulation and assistance. . . .Personal future building. . . .[and] Involvement experiences" (pp. 90-91), which must be coordinated institution-wide and directly and overtly supported and overseen by senior administrators. Beal and Noel caution that close coordination of efforts is essential to avoid confusing and frustrating students in need of assistance.

Continuing to consider retention efforts, a chapter by Noel (Noel, Levitz, Saluri, & Associates, 1986) claims that students matriculate and persist in colleges and universities when they can realistically develop plans for their futures, gain information about their talents, and develop, both academically and personally, in the academic environment. While noting that student growth may occur in classrooms, on athletic fields, in fine arts programs, as well as in student organizations, Noel argues that

. . .there is a feeling at many campuses that retention is the responsibility of student services; student success is someone else's concern. A fallacy that exists among many faculty is that enrollment maintenance is a function of the admissions office. The message to the admissions office is, 'Go out and bring some more students, and while you're at it, make them a little smarter.' Too often retention activities are carried out almost exclusively by student services, even though it is now clear that the key people on campus in a retention effort are those on the academic side of the institution: classroom teachers, academic advisers, and academic administrators. (p. 9)

Interestingly, these statements appear to mirror those of developmental educators when they recommend that efforts to attract and retain their students must be comprehensive institutional efforts, more widespread than merely those of the subsystem formally charged with developmental education.

Valverde's chapter in the same volume (Noel, Levitz, Saluri, & Associates, 1986) dealing with retention of low-income college students makes some interesting points about the characteristics of such students and the programs designed to assist them in colleges and universities. These may be especially appropriate in programs designed to assist developmental students, as some-federally funded programs (e.g., Title IV) limit assistance to students who receive financial aid, who are first-generation college students, and who are educationally disadvantaged. Valverde asserts that low-income college students may be characterized as lacking in self-confidence and self-motivation in the academic setting, as having low levels of verbal assertiveness, and as generally having no or unclear career goals. Additionally, low-income students are also typically first-generation college students, according to Valverde (citing Adolphus, 1979, in support), and, so, lack familial role models to help in preparing students for the tasks and culture of college life. Thus, low-

income students may come to college completely unacculturated or unsocialized to college life and encounter an environment that seems at best unresponsive and, at worst, actively hostile (p. 81).

Valverde contends that one purpose of all organizations is to act as a socialization agency for their members, to provide processes by which they "learn the value system, norms, and required behavior patterns of the organization and group they are entering" (p. 83). For low-income students this process may be essential to success in college, especially if Atkinson and Birch's (1970) notions of achievement are correct. According to Atkinson and Birch, the probability of students continuing to participate in pursuing education is related to their prior experiences: the more negative the prior experience, the less likely continued engagement; the more positive the prior experience, the more likely is continuation. Valverde argues that it is necessary to provide a complex socialization and support system to encourage low-income students in successfully internalizing the norms of college life and in having positive experiences, academic and otherwise, in college. The structural organization of the support system for developmental students can also be thought of as representing a "hidden curriculum" (Dreeben, 1968; Gordon, 1982, 1990) helping students to identify and operate by the norms of the institutional environment with regard to developmental education.

In discussing programs that colleges and universities do or should provide in support of low-income students, Valverde develops a three-level typology of intervention strategies:

Intervention Type I: Need-Specific Intervention. . . is made up of recruitment, admission, and orientation services focused on the specialized needs of nontraditional students. After such a program is established, a remedial laboratory to help students develop their basic skills might be added. A related but not necessarily coordinated service could be financial aid.

Intervention Type I retention programs are usually initiated to respond to federal requests for proposals (RFP's) and thus are drafted and designed to match specific criteria described in the RFP. The guidelines are often inconsistent with the needs of the student population to be served and available funds inadequate to provide the aid required by students. . . .

Intervention Type II: Comprehensive Strategies. . . should include the following components: (1) recruitment; (2) admissions; (3) orientation; (4) a diagnosis and prescriptive center; (5) an academic development laboratory; (6) a counseling unit directed at personal development, career interest identification, and goal setting; (7) financial aid; and (8) a unit which deals with social integration via extracurricular involvements. . . .

Intervention Type III: Systemic Solutions. . . Instead of retention efforts being limited to particular units, add-ons, and temporary programs, Type III intervention involves a systemic solution, that is, faculty changing their teaching methods, curricula being altered, administrators changing their attitudes, and governing boards modifying their administrative criteria and rules and regulations to make admissions and retention of nontraditional students

possible. These changes should reflect the view that all students are equally qualified when we are willing to look at their situation from an alternative perspective. (pp. 89-91)

Although Valverde presents the foregoing as an intervention typology, Types I and II may be more nearly organizational or structural in nature. While Valverde's description of the components of Types I and II implies intervention activities, much of what he lists and the terms which he uses (e.g., "unit") to name intervention components seem more likely to reflect subsystems or organizational components of the educational institution. Thus, it might be argued that Valverde's intervention typology lends itself far more readily to examination of the organization of developmental programs, both formal and informal, in institutions of higher education than to examination of interventions as defined by Keimig or the Self-study evaluations, previously discussed.

Valverde's use of the word "typology" seems deliberately chosen to reflect a deductive or intuitive approach to classification building in keeping with Haas, Hall, and Johnson (1966); Pugh, Hickson, and Hinings (1969); Gordon and Babchuk (1959), Etzioni (1961); Blau and Scott (1962); Katz and Kahn (1966); and Perrow (1967). This is an accurate reflection, as reported in this 1986 chapter, of his method of classification development; that is, he appears not to have collected data or done other fieldwork, but instead derived his typology from reflection and intuition. The accuracy or utility of his typology has yet to be tested.

Examination of the organization of developmental education programs from a student affairs perspective by Kuh (1983) focuses on operations and organizational concerns, rather than retention. As part of his discussion, Kuh models a typical student affairs organization as headed by a vice president/dean assisted by two associate deans, one for student development and one for student services and minority affairs. The associate dean for student development would be expected to oversee the director of residence halls, the director of the counseling center, and the director of student activities/student union. His/her counterpart, the associate dean for student services and minority affairs, would oversee the director of career planning/placement, the director of financial aid, the director of learning skills, and veterans affairs/handicapped students. Kuh predicts a direct functional link among career planning/placement, financial aid, and learning

skills, but none of these are linked directly with counseling.

Kuh's structural elaboration is interesting on two levels. First, placement of learning skills within student affairs rather than under an academic dean is suggestive both in terms of organizational structure and socialization toward student support. One might assume that concern with academic support services would be stronger on the academic side of the institution than on the student affairs side (and a "typical" organizational structure drawn by someone other than a student affairs specialist might place the learning skills program there), yet Kuh locates it not only in student affairs but also under student services and minority affairs in functional association with career planning/placement, financial aid, and services specifically provided to special nontraditional student populations. This seems to suggest that the population to be served by the learning skills program is expected to be principally low-income and minority. It may imply lowered expectations of developmental students on the order of, "Get them financial aid so they can get basic educational skills so they can get a job." Kuh's "typical" organizational plan for student affairs shows this process to be functionally unrelated to counseling services, residence life, or student social activities, perhaps implying these are less germane to low-income or minority students.

Second, Kuh discusses whether student affairs organizational units are tightly or loosely coupled (Weick, 1979). He argues that, while units are normatively tightly coupled as indicated by organizational charts, loose coupling is the predominant mode of operation and expectations of interdependence among organizational units in student affairs organizations, based on organizational charts or bureaucratic assumptions, are likely to be unfulfilled. This argument appears to lend support to the idea that investigation of formal organization alone is unlikely to yield a real understanding of the extent or operation of the developmental educational program; it may be necessary also to study the informal organization, linking not only student affairs units but also quite likely including units from the academic structure of the institutional organization, to develop a more adequate understanding.

More recently, Kuh (1995) suggests that what he refers to as "the other curriculum: out-of-class experiences" (p. 123) contributes greatly to the intellectual, social, and emotional development of college students. He writes that it may be tentatively concluded that out-of-class experiences, "interactions between

students and their institution's environments, broadly defined" (p. 126), are related to learning and personal development in students. Therefore, he argues, colleges and universities should be accountable for establishing policies and practices intended to increase students' opportunities to interact with individuals from other groups in a variety of campus settings, to practice new skills and knowledge transferred from classroom activities in extracurricular activities, and to take individual responsibility for managing their own affairs as students within the environment of their institutional ethos.

Kuh bases his study on a "college impact model" (p. 126), rather than focussing on internal, psychological changes occurring within individual students as a result of stages/phases of intellectual development or maturity as suggested by others (e.g., Baxter Magolda, 1992; Chickering & Gamson, 1987; Chickering & Riesser, 1993; Erikson, 1978, 1982; Flavel, 1985; Kohlberg, 1984; Perry, 1970). He argues, with Pascarella and Terenzini (1991) as well as Ewell (1988), and Astin (1977, 1993), that college impact depends more on interactions among student and institutional characteristics than on internal developmental or maturational processes in students. Thus, identification and classification of organizational models, both formal and informal, not only of institutions as wholes but also of the subsystems within them, should be a useful step in identifying variables that might be manipulated to produce desired college impacts when taken with other student and institutional variables.

In another recent article written from the student personnel services perspective, Chickering (1994) suggests using the concepts of moving in, through, and on out of college (Schlossberg, Lynch, & Chickering, 1989) as meaningful heuristics in designing student personnel services and academic advising. According to Chickering, moving into college successfully is perhaps the most critical part of the college experience for students and, thus, is the "most important responsibility" (p. 3) of student support professionals. He writes:

Every transition means coping with new roles, new routines, new relationships, and new assumptions--about oneself, about others, about the culture being entered. To make an effective transition, it is important to take stock of one's situation, supports, and coping strategies and of oneself. We can help students do that stock taking, and we should. (p. 3)

For many students, the process of moving through college also calls for student personnel services support, according to Chickering (1994). He suggests that moving through college successfully calls for definition of a suitable major, developing ways to maximize learning from both coursework and out-of-class

activities, and engaging in appropriate interpersonal relationships. In discussing ways to maximize learning, Chickering essentially recommends actively working with students in learning-to-learn activities involving career guidance, learning style analysis, active and collaborative learning, time-on-task expectations, and motivation toward learning.

"Moving on" involves helping students to position themselves to take advantage of their collegiate experiences and successes. Students may require assistance both in dealing with their new situation in life and in beginning to execute an ongoing plan for lifelong personal development. This appears to involve placement and job search issues, as well as family and lifestyle issues related to vocational and avocational developments resulting from the collegiate experience.

While Chickering (1994) writes of college students in general, his issues and suggestions for coping with them appear to be at least as meaningful for developmental students as for students who are "regular" students. The tasks involved in making an effective transition to college seem likely to be even more daunting for developmental students who are less well-prepared than expected of entering students,--perhaps especially difficult for first-generation students who, as discussed previously, may lack role models to provide insight about coping techniques for this critical transition. Developmental students may need even more assistance with the "moving through" process than nondevelopmental students; certainly, it is unlikely they will need less. Finally--and especially for economically-disadvantaged or first-generation students--changing expectations and life situations necessitated and/or facilitated by increased education and vocational opportunities appear likely to make the "moving on" transition more difficult when it might also be interpreted by family and friends not similarly situated as abandonment of or embarrassment about old ways of life on the part of the college student.

Coping with these moving into, through, and on, crises for the developmental student probably, as implied in Chickering's (1994) discussion, requires assistance from and interaction with portions of the college or university not specifically identified as being part of the developmental education program. Yet, failing to meet the needs of developmental students in dealing with these crises may impair their educational progress. It has long been argued (e.g., Boylan, 1980) that student personnel services such as counseling, advising, career search and planning, extracurricular activities, job search and placement activities, and special programs for

first-generation, economically- or educationally-disadvantaged students (e.g., developmental students) and students from minority ethnic and cultural groups may in many cases be essential to students' successful academic careers. Furthermore, academic advising from regular faculty members, enrollment assistance and entry-level screening and placement, and financial aid may also be critical to success in moving in, through, and on.

These functions may be carried out by offices, departments, faculty, staff, and administrators not formally considered part of the developmental education program, yet be distinctly supportive of or involved with the developmental education program in at least a portion of the activities and programs carried out by these other subsystems of the institution. These, then, might be conceptualized as forming an informal organization, or set of subsystems, involved with developmental education.

Habley (1983) and Habley and McCauley (1987) engage in a thoughtful and ongoing consideration of the matter of research in organizational models for student services in colleges and universities (viz., student advising services). They argue that two trends in the literature regarding student services tend to shift the focus of researchers and practitioners away from study of organizational models. The first of these counterinfluences from the literature is representation of every institution of higher education as being "unique" (Habley & McCauley, 1987). If this were the case, they argue, it would be impossible to generalize organizational models across institutions. The other trend they note is a "tendency to blur the distinctions between organizational models and the *delivery* of services *within* those models" (p. 27). Habley and McCauley suggest that it is possible to deliver similar or the same types of services (which might be defined as "interventions") within differing organizational frameworks and that it is possible to identify and classify the organizational models in use.

These concepts may be important in interpreting the literature of developmental education. As Habley and McCauley (1987) suggest has occurred in student advising services, it is possible that focusing on the "uniqueness" of each program and its target population, as well as upon the interventions carried out on behalf of that population, has tended to obscure or limit study of organizational models in developmental education.

Further, the organizational models suggested by Habley and McCauley (1987), as follow, may roughly correspond to organizational models taken by programs of developmental education:

- a. The "Faculty-Only Model" (p. 28)--faculty in academic departments provide services solely;
- b. the "Supplementary Advising Model" (p. 28)--faculty in academic departments are principally responsible for services, but are assisted by an academic advising office as a resource to faculty and a source of referrals to other support services;
- c. the "Split Advising Model" (p. 29)--academic faculty take responsibility for some services and others, often those with special needs, are managed by specific academic advising offices;
- d. the "Dual Advising Model" (p. 30)--academic faculty provide services associated with the major area of study and an academic advising office provides all other advising;
- e. the "Total Intake Model" (p. 30)--a central academic advising office has initial responsibility for students until each student meets some predetermined institutional criterion;
- f. the "Satellite Model" (p. 32)--academic advising offices are set up by and controlled by each academic subunit; and,
- g. the "Self-Contained Model" (p. 32)--a separate, centralized academic advising office responsible for all academic advising.

Summary of the Literature of Developmental Education. What might reasonably be argued based on the foregoing review of literature associated with developmental education? Perhaps the following statements may be viewed as being accurate summaries:

1. Students needing academic assistance to succeed in college and interventions designed to provide that assistance are not recent phenomena in American higher education.

2. Intervention activities typologies may be developed and it can be seen that many of the intervention types have been in existence since the earliest days of American colleges and universities.
3. There is a longstanding and pervasive understanding that students may need not only academic development interventions in order to succeed in college, but may also require other forms of personal developmental assistance in order to become acculturated to college sufficiently that academic development becomes meaningful, or possible, for them.
4. There is no obvious reason to assume that the number of developmental students, or the nature or number of their needs, will change in the foreseeable future.
5. Those who plan, develop, and evaluate programs of developmental education have tended to look inwardly at the intervention practices of programs.
6. Currently, there is no way to systematically evaluate the variables contributing to programs' successes or failures and choose programs and interventions which are more likely to be successful in the presence/absence of certain variables or collections of variables.
7. Researchers have tended to attribute program success/failure solely to intervention activities, without regard for other environmental variables.
8. Failure to identify and separate, even grossly, groups of variables other than intervention activities tends to confound findings in research about developmental education.
9. The internal organizational structure of programs of developmental education, their placement within the larger organization, and their articulation with other subsystems of those organizations have been briefly noted, but have not been adequately explored as potential variables in a success/failure "equation."
10. Typologies permit comparison of intervention activities.
11. Lack of typologies inhibits comparison of structural factors.
12. Research in developmental education has largely been descriptive and practitioner-

oriented, aimed at selecting and improving intervention strategies. The modest amount of study of organizational characteristics suggests a limited set of categories (e.g., vertical and horizontal, Academic Affairs and Student Affairs locations, tutorial/remedial model and interdisciplinary model). However, this work neither determines whether these categories include all organizational forms nor whether they are too inclusive for functionality and need further internal differentiation and refinement.

13. While no novel theories of organization have arisen from the research reviewed here, little effort has been made to examine available theories of organization to see if the organization of developmental education programs conforms with known theories. If points of conformity can be identified, then available theories may serve as guides to application and further research. If no points of conformity can be found, then the matter of organization of developmental programs needs to be studied *de novo*.

14. The literature of developmental education suggests that there might be two organizational structures involved: the formal and the informal organizations.

Searching for Explanatory Theory. Since *de novo* organizational theory generation has not occurred as a part of the research process in developmental education, it may be appropriate to widen the scope of the literature review to include studies of organizational theory in colleges and universities. Because developmental education programs are subsets of the larger institution, organizational structures observed in or theorized for the whole should also apply to its parts.

Organization Research and Theory in Higher Education

One goal of looking at organizational research and theory in higher education is to see whether evidence is available to support the notion that one or more classification systems based on characteristics other than intervention types can be found in the literature. A second goal is identification of a theoretical basis regarding formal and informal organizational structures in developmental education. The next section is composed of a discussion of classification schemes yielding taxonomies and typologies of institutions of higher education.

structure) whose technical competence (Parsons, 1947) as highly-educated individuals is sufficient for them to organize and manage the tasks of the college or university. The idea of the university as a political system reflects Baldrige's (1991) writings in which colleges and universities are portrayed as the setting for interest group conflicts. These are resolved, in the authors' opinions, through negotiation and *quid pro quo* policy construction. The necessity for negotiation among *ad hoc* alliances seeking to shape institutional policy (and, thus, practice) severely undermines the influence that otherwise might accrue to formal authority.

Baldrige et al. (1991) suggest that, in their estimation, the collegial model is more nearly normative than descriptive, while the political model is highly descriptive of the ways in which individuals, groups, and offices in institutions of higher education actually go about managing the politically critical activities of the institutions. They conclude, however, that it is likely that most day-to-day functions are managed bureaucratically over the long term due to the bureaucratic nature of institutional structures that tend to channel activities and decisions. They sum up their comparison of models, "Finally, we are not substituting the political model for the bureaucratic or collegial model of academic making. In a sense, they each address a separate set of problems and taken together, they often yield complementary interpretations" (p. 42).

Peterson (1991a) attempts to catalog organizational models associated with higher education and arrives at 20 organizational models, divided into five basic categories, as shown in Table 5. Peterson expresses concern that, apart from Weick (1976) and Cohen and March (1974), all of the models have been generated by theorists working in organizations other than colleges and universities, claiming "many have been distorted or modified to fit our postsecondary context" (p. 20). Furthermore, Peterson calls attention to the "fragmented nature of the models themselves and with how one deductively builds theory" (p. 20).

Arguing that these models have different foci, purposes, and underlying assumptions, Peterson writes:

The concern is that little attention has been given either to *mapping* the organizational territory covered by these borrowed theories or to *examining* comparatively the nature of each model. The need to relate our theoretical models to organizational phenomenon (the territory) to identify gaps is noted by Bess (1983) in his edited volume of Review of Higher Education. . . Mapping our theories in relation to organizational phenomenon and analytic comparison of models offers useful ways of reducing fragmentation and/or discovering overlaps. . . (pp. 20-21)

Table 5.--Peterson's Classification of Organizational Models in Higher Education

Internal Purposive Models	Environmental Models	Technological Models	Emergent Social Systems Models	Interorganizational Models
Formal-rational Collegial Political	Open Systems Contingency Strategic Life Cycle	Task Information System/ Resource	Temporary Organized Anarchy Loosely- Coupled Social Networks Culture/Values Learning Organizations	Systems Networks Ecological Industrial

Source: Adapted from, Peterson, M.W. (1991a). *Emerging Developments in Postsecondary Organization Theory and Research*, p. 20.

In his 1985 doctoral dissertation, Toward an Explanatory and Predictive Theoretical Model of Organization for Institutions of Higher Education, Reyes attempts to map existing theories onto the universe of college and university organizations. He proposes a five-level "structural" (p. 200) taxonomy of colleges and universities as organizations, relating each level to both Carnegie Classification types and specific organizational theories largely as proposed by the Baldrige et al. (1991) reprint of an article originally published in 1977. Reyes' taxonomy may be summarized as presented in Table 6.

Reyes argues,

The implications for practice are that once one has an empirically defined taxonomy of organizations, colleges and universities can be better understood by those who participate in the governing process of these institutions. Understanding how a university or college functions obviously will improve the operation of it. . . . This taxonomy not only provides a new way of looking at institutions, but it does provide for a deeper understanding of the formal and informal structure of an organization. The formal structure is provided by institutional missions, while the informal structure is revealed by the way these institutions organize themselves. (p. 202)

Table 6.--Reyes' Classification of Organizational Models in Higher Education

Structural Level	I	II	III	IV	V
Theoretical Frameworks	Political / Bureaucratic	Political/ Collegial	Bureaucratic	Bureaucratic/ Collegial	Collegial
Carnegie Type	Two-Year Colleges	Comprehensive Universities and Colleges I	Doctoral Granting Universities II, Comprehensive Universities and Colleges II, Liberal Arts Colleges II	Research Universities II, Doctoral Granting Universities I	Liberal Arts Colleges and Research Universities I

Source: Adapted from Reyes, P. (1985). Toward an explanatory and predictive model of organization for institutions of higher education, p. 200.

This is in keeping with arguments (Baker, 1972; Hendrickson & Bartkovich, 1986; McKelvey, 1982) that the interrelationships among members of any population can be understood only by discovering a natural arrangement into which the entities of which that population is composed may be ordered. Reyes suggests that taxonomy development for institutions of higher education has utility in facilitating comparisons across institutions. Moreover, he holds that classification of organizations such as colleges and universities should have utility in identifying specific organizational behaviors as being macro- or micro-level events.

Millett (1974) discusses the complexity of institutions of higher education in the United States. He argues that institutions may be classified on the bases of public-private ownership; type of student body served; type of instructional program; continua based on levels of instruction or expenditures per student; geographic location, residential/commuter, single campus versus multicampus, and Carnegie classification, among others. According to Millett (1974),

There is no classification scheme yet devised that can bring order and simplicity out of the many diversities that inhere in the structure of higher education in the United States. Each classification is at best a partial ordering of institutional characteristics--a considerable simplification of reality. (p. 41).

Thus, while it seems apparent that typologies and taxonomies of colleges and universities can be developed, it

should also be apparent that the dimensions used to develop classification systems may vary considerably and institutions may be grouped differently depending on the dimension(s) or attribute(s) used to generate the classification system used.

Theories and research in organization in American higher education. The general organizational forms, or attributes of organizational structures, of American colleges and universities are longstanding, in some instances reflecting roots in Europe stretching back to the medieval period or earlier (Brubacher & Rudy, 1976; Duryea, 1973; Gutek, 1987; Levine, 1978; Thelin, 1982; Westmayer, 1985). Others, as Veysey (1965, 1990) notes, can be dated to the period between the American Civil and the First World War. This latter period was a time of sweeping changes in American higher education, culminating in structures and practices in higher education that persist to the present time (Veysey 1965, 1990). It can be, and has been, argued (e.g., Duryea, 1973; Trow, 1991) that the organizational structures of American colleges and universities have persisted largely unchanged over the past eight or nine decades.

As this eight- or nine-decade period coincides almost exactly with span of time since the beginnings of formal studies of organizations in this country, it is perhaps not surprising that colleges and universities have been the objects of study, as organizations, over much of this period of time (Hoy & Miskel, 1987). Nor should it be surprising to discover that, as organizational theories were developed or came into vogue, many were applied to colleges and universities and the congruity (or lack thereof) between theory and organization discussed in journal articles and scholarly books. It will be the purpose of this portion of the literature review to identify prominent theorists and theories of organization that have been applied to institutions of higher education, to discuss them briefly, and to consider their relationship to the research at hand.

Duryea (1973) argues forcefully and persuasively that the basic organizational structures of American colleges and universities have been little changed over the last ninety years. These relatively fixed organizational structures, he writes, reflect the dichotomous arrangement of functions--academic and managerial--in most colleges and universities (see also Blau, 1973; Corson, 1960), with a single overall manager, the president. (It should be noted, however, that Renihan, 1985, argues against the trend toward dichotomous theorizing about organizations.) Vesting final authority for academic matters in the faculty,

organized into departments reflecting specialized preparation and competencies, has tended to remove individual faculty members from managerial function or student interactions, which have come to be managed largely by professionals with specialized training, according to Duryea (1973).

In its earliest manifestations (e.g., Veblen's 1918 "Captains of Erudition"), the division of responsibilities in colleges and universities on the basis of special competencies was likely to have been reflection of enthusiasm over "Scientific Management" (Fayol, 1949; Taylor, 1916). However, Weber's (1947) theories of bureaucracy seem to more completely encompass the theories-in-use (Argyris & Schön, 1974) of organization in higher education in the United States (Abbott & Caracheo, 1988; Blau, 1994; Lerner & King, 1992; Meyer & Rowan, 1978; Salem & Gratz, 1984; Smith, Lippitt, Noel, & Sprandel, 1981).

A useful analysis of the history of organizational research in education is that of Hoy and Miskel (1987), who propose three general influences or schools of thought. They argue that the three overlap somewhat, continue to be developed by students of organizational theory, and may be identified in use in contemporary educational organizations.

The first of these might be referred to as "classical" organizational or "administrative" theory, founded on the writings of Taylor, Fayol, Gulick, and Urwick, beginning around 1900. This approach, according to Hoy and Miskel (1987), features division of labor into job classifications calling for similar specialized knowledge or skills, or dealing with similar goals or clientele, and aggregated into work groups, or departments, under an administrator. Each administrator has a limited number of subordinates whom s/he directly controls ("span of control") (Boone & Bowen, 1980; Hoy & Miskel, 1987; Luthans, 1985; Morgan, 1986). A common contemporary manifestation of the classical theory of organization is the bureaucratic form of organization (Blau, 1994; Boone & Bowen, 1980; Luthans, 1985; Morgan, 1986; Weber, 1947).

The second general school of thought about organizations, often referred to as the "human relations" school, began during the 1930s and is based on the work of Follett, Mayo, and Roethlisberger (Hoy & Miskel, 1987). Studies conducted by Mayo and Roethlisberger during the late 1920s and early 1930s in an industrial plant raised questions about the comprehensiveness of classical organizational theories (Boone & Bowen, 1980; Luthans, 1985; Morgan, 1986). Rather than supporting prior assumptions about the machine-like nature

of organizations and workers, these studies suggested that social interaction among workers led to formation of informal structures not recognized on formal organizational charts and interacting with the formal structures of the organization in unanticipated ways (Boone & Bowen, 1980; Luthans, 1985; Morgan, 1986).

The final general influence, according to Hoy and Miskel (1987), has been that of the behavioral sciences, using not only the concepts of structure and social relationships pioneered in the classical and human relations schools of thought but also contributions from researchers and theorists in psychology, economics, sociology and political science. This school was pioneered by the work of Barnard (1938) in his seminal work, The Functions of the Executive, and Simon. Hoy and Miskel (1987) summarize,

Barnard provided the original definitions of formal and informal organizations and cogently demonstrated the inevitable interaction between them. Barnard himself summarized the contributions of his work in terms of structural and dynamic concepts. The structural concepts he considered important were the individual, the cooperative system, the formal organization, the complex formal organization, and the informal organization. His important dynamic concepts were free will, cooperation, communication, authority, the decision process, and dynamic equilibrium. (p. 15)

Theories drawn from social (and, sometimes, physical) sciences contributing to this school of organizational thinking include systems theories (e.g., von Bertalanffy, 1968) as translated to facilitate thinking about humans and human organizations, contingency theories (e.g., Lawrence & Lorsch, 1967), and ecological theories (e.g., Tolbert, 1985), among others (c.f., Morgan, 1985).

Millett's notion of "institutional characteristics" (1974, p. 41) as the sources of classification schemes suggests analysis of the internal structures or workings as one way of understanding the differences and similarities among colleges and universities and as a way of developing classificatory systems that may be applied to them. In fact, there is a considerable body of literature dealing with the internal structures and workings of colleges and universities. These writings are developed from the viewpoints of both practitioners and theoretical researchers, yet it is striking that some concepts recur in this literature despite differences in the institution or institutions studied or differences in orientation of authors.

One of the more common of these is the concept of "structure" in organizations of higher education. Weick (1984) notes, "...most university organizations can be described as an adhocracy, organic organization, clan, decentralized structure, loosely coupled system, organized anarchy, garbage can, or situation of pooled

interdependence. What all of these descriptions share is the specification that. . .structure exists" (p. 27). When Weick, who is noted for his theories of "loose coupling" (1976), in contrast to the more tightly structured and highly controlled organizations theorized by Weber (1947) and others, argues for the existence of structure then it may be supposed that structure is likely to be a universal characteristic of organizations.

Such a supposition is readily supported in the literature of higher education. While many examples could be gathered in addition to references to structure presented in the foregoing discussion, the following suggest the general tenor of the discussion of the matter of structure as a characteristic of colleges and universities. Bobbitt and Behling's (1981) useful review of the literature of organizational behavior defines "structure" in organizations of higher education as "the systems of communication, of authority (or other roles), and of work flow" (p. 34), adding, "Structure provides for the division of work and its coordination toward a common goal" (p. 34). Blau (1994) writes, "Formal organizations need an administrative structure, a skeleton or structure that sustains the work of the people in the organization--the activities carried out to achieve its objectives" (p. xviii). Corson (1974) quotes Burton Clark (1971, p. 499) as writing of "structural" bonding "consisting of patterns of relation and interaction of persons and groups" (p. 166) as being one of the ties that binds colleges or universities together as organizational wholes.

Structure in higher education has been conceived differently by those who study it. Structure may be described as "the exercise of formal control by direct authority, by enforcement of rules, or by limiting the discretion (autonomy)" of subordinates (Abbott & Caracheo, 1988, p. 254). It may be assumed to be more capable of adaptation and restoration than in other types of organizations (Bennis, 1964). Organizational structure may be one of several characteristics affecting an educational organization's ability to respond to circumstances and may pose an important portion of its culture (Michael, 1986). Organizational structure, in institutions of higher education, is commonly conceptualized as being a characteristic determined by the missions, objectives and goals of the institution, and to vary in differing subunits of the organization as best suits accomplishing those goals, objectives and missions (Dressel, 1987; Nash, Hicks, Laswell, Lewis, Lillich, Mullins, & Roth, 1989; Owens, 1991). Dressel (1987) specifies that "Structure and function are indeed related" (p. 109).

The formal organizational structure of any college or university appears to be relatively easy to identify. The organizational chart, in most institutions, presents a formal organizational structure (Corson, 1974; Rogers & Agarwala-Rogers, 1976; Uehling, 1981). Nevertheless, it also appears likely that the organizational chart, or the formal structure of organization, fails to accurately reflect all the organizational structure(s) involved in carrying out institutional objectives in most colleges and universities (Corson, 1973; Salem & Gratz, 1984; Uehling, 1981). Thus, the organizational chart may serve as a guide to the formal structure of any college or university, but cannot be used as a guide to the informal organizational structure(s) that may coexist within the institution.

Stevens and Williams (1988) suggest that structures of successful colleges and universities will include considerable internal differentiation and high levels of integration, obtained through "flexible and participatory" (p. 178) processes. Within individual departments, Biglan (1973) proposes that such structuring may be the norm based on "informal" and "egalitarian" relationships among peers. Owens (1991) refers to this as being part of the "interaction-influence system of an organization" (p. 180).

The interaction-influence system, as described by Owens (1991), is a central concept in organizational behavior and is closely related to and interactive with the organizational structure in any educational institution. Owens notes that

the role of the organizational structure within any college or university is to establish patterns of human interaction to get the tasks accomplished (who deals with whom, in what ways, and about what). Thus, departments, teams, schools, and divisions are typical formal structures, while friendship groups, people who work in close proximity with each other, and coffee-klatch groups are typical informal structures. (p. 180)

This notion of both formal and informal structures coexisting within colleges and universities is well-established. Although the concepts of "formal" and "informal" organizations can be traced back at least to Barnard (1938), use of the terms and the practice of conceptualizing both formal and informal structures within institutions of higher education have currency. Perkins (1974) describes the university as being one of the most complex organizations in existence, with a formal organizational structure encompassing the board of trustees, a charter, a chief executive officer, administrators, faculty and students. This structure, originally developed to cope only with the transmission of knowledge, has, according to Perkins (1974), become increasingly complex

because of demands to also incorporate the newer missions of research, public service, and service to democratic ideals. Because the additional missions cannot be successfully discharged through the formal structure, an informal organizational structure has developed to facilitate their execution (Perkins, 1974).

More recently, Bobbitt and Behling (1981) describe Burns' and Stalker's (1961) "mechanistic structures" (p. 35) and "organic structures" (p. 35). Mechanistic structures are characterized as having a hierarchical structure in which tasks and roles are highly and precisely defined, are specifically assigned, and carry defined authority. In contrast, organic structures are described as reflecting an ill-defined and flexible system where authority is not vested in hierarchical positions, but rather in problem-solving ability. Mechanistic structures are pictured as "vertical" and organic structures are presented as horizontal, or "lateral" (p. 35), structures.

It may also be suggested that mechanistic structures are necessarily formal, in the sense of representing accurately the hierarchical, defined, and intended organizational structures of colleges and universities. While it is possible that the organic structural type is well-defined and intended, it is not likely to be hierarchical (by definition), and it may be equally likely to represent an *ad hoc* development occurring to deal with the unanticipated missions of research and service (Perkins, 1974) accruing to institutions of higher education. In this latter sense, organic structures may be truly "informal" by lack of acknowledgement in the institutional charter, statements of policies and procedures, or organizational chart.

The dichotomous nature of the organizational structures--academic and managerial--in most colleges and universities, previously discussed, may have contributed to the development of coexisting formal and informal organizational structures as well. Because of the specialized knowledge and task differentiation of academic and managerial groups, because of the distinctive patterns of formal organization into the highly differentiated departments and offices found in most colleges and universities, and because of an organizational plan developed to meet the educational mission (but not necessarily the research and service missions), difficulty in carrying out interactions among the various subsystems of the organization in support of the various missions appears probable.

Weick (1984) reports that "cross-departmental linkage is done on an individual basis, feedback is unreliable, decisions do not need consensus. ..." (p. 16). He continues

The extreme degree of individualism found in universities is reinforced because when linking is important, individuals rather than administrative units are supposed to do it. A dean, the senior person in an area, the expert on a topic, the person who has least status, or the person with extra time are chosen for locally idiosyncratic reasons to represent larger interests, which themselves are not homogenous. The resulting contacts become links between individuals rather than links between administrative units. . .
(pp. 16-17)

Under such circumstances, it appears almost inevitable that an informal structure, supplementing the formal structure of the institution, should develop. Perhaps, indeed, an informal organizational structure of this type must develop in order for the multiple tasks and missions of the modern institution of higher education to be accomplished without radical revision of the traditional structures and functions.

Writing of "knowledge oriented enterprises, such as universities" (p. 345), Topley (1990) suggests that the informal organizational structure is adaptive for institutions of higher education, providing them with systems elastic enough to cope with change. In colleges and universities, Topley notes, "The structure of influence frequently is not coincident with the structure of formal positions of power. Authority resides with individuals or groups which demonstrate achievement or competence or charisma" (p. 345). Although not based on studies of colleges and universities within the United States, these comments about the informal organizational structure(s) within organizations of higher education seem to reflect the observations of organizational theorists working in this country. If these observations across educational systems in different countries are reasonably accurate, then it might be possible to argue more strongly on behalf of the existence of formal and informal organizational structures in colleges and universities. That is, if the same general sorts of organizational structures appear in colleges and universities in both the United States and Australia, then this may be taken as more nearly universal evidence supporting the existence and association of formal and informal structures in postsecondary educational organizations.

Few organizational scholars are, however, concerned solely about institutions of higher education and even fewer theories have been developed primarily from research pertaining to colleges and universities. As noted above, Peterson (1991a) claims that only Weick (1976) and Cohen and March (1974) have developed

organizational models purported solely to be based on or applicable to colleges and universities. However, it might be argued that Clark's (1970) work on "distinctive" colleges is a form of classification scheme for colleges and universities using a somewhat complex set of factors designed to identify institutions that are unlike most, in desirable ways. While this scheme deals with colleges and universities as organizations, its author does not appear to have been intent on developing a general organizational theory for colleges and universities.

Weick's (1976) notion of "loose coupling" among subunits, or subsystems, of an educational organization appears metaphorically structural in nature, on its face, and is generally associated with lack of hierarchical structure or accountability (Lerner, 1992). However, closer examination of Weick's (1976, 1978) writing may suggest that it is, in fact, much more nearly a managerial, or operational, theory. That is, rather than proposing any specific way or ways in which educational institutions may be organized structurally, Weick emphasizes the way their subsystems function in interacting or failing to interact with one another. While virtually all educational organizations have an organizational chart, and thus a formal structure and hierarchy, Weick argues that actual day-to-day operations may not be carried out as might be inferred from the formal organizational chart. In this respect, the idea of "loose coupling" within educational organizations may more nearly reflect informal organizational structure(s) coexisting with the formal organizational structure.

Cohen and March (1974, 1986), Cohen, March, and Olsen (1972), and March and Olsen (1976) formulated what has become known as the "garbage can model" of organization. This model may be thought of, alternatively, as a model of choice or decision making in colleges and universities, as an administrative or managerial model, or as a leadership model. It is concerned with the interrelationships of "streams" (Cohen et al., 1972) within an institution and the ways in which academic managers use them to gain desired ends. According to Cohen et al. (1972) it is the characteristics and persistence of problems, solutions, participants and choice opportunity "streams" that shape outcomes and, sometimes, influence structures. This model, too, then is concerned principally with operations or function, and not structure(s).

As noted by Lerner (1992) and Meyer and Rowan (1983), "loose coupling" or "garbage can" analogies are action theories and are probably limited to those activities that are not, or do not appear to be,

highly salient to the success of colleges and universities. They are not structural theories. Furthermore, Lerner (1992) presents the very reasonable argument that they are, in some respects, outdated theories for the operation of modern institutions of higher education both because the operational systems in most colleges and universities are already overloaded and because institutional activities are closely monitored by significant external constituencies.

Although less restrictive than Peterson (1991a), Bess (1984), too, takes a fairly restrictive view of studies and theorizing dealing with higher education organizations. Bess (1984) proposes several different ways of thinking about organization in colleges and universities. His first framework, titled "The Traditional Topical Map and Gaps" (p. 9), separates organizational theory and research into four basic categories: system states, structure, transformation processes, and human resource management. Bess classifies Weick's work as falling into the subcategory, "Quality and climate factors", under system states on the Traditional Topical Map. Using a second perspective, Parson's (1951) functional approach, Bess groups Weick with Shaw and Van Maanen as having a process rather than a structural orientation.

While not necessarily completely definitive, the works of Meyer and Rowan (1983), Peterson (1991a), and Bess (1984) tend to support the proposition that the theories most applicable to study of formal and informal organizational structures in colleges and universities are not those developed by scholars specializing in higher education organizational theory. Instead, the most widely used organizational theories appear to be drawn from the more general literature of organization as a general field of study. Thus it is necessary to turn to a broader literature to achieve more complete understanding of the underpinnings of both theories of classification and theories of organization, particularly structural theories.

Summary of Organizational Research in Higher Education. Before doing so, however, a summary of the literature specifically concerned with higher education organization reported above includes the following:

1. Classification schemes abound and taxonomies and typologies for colleges and universities, based on attributes other than student interventions, are widely available and widely accepted.

2. Classification systems are useful in comparing colleges and universities at both macro- and micro-levels.
3. Such classification schemes may also be useful in identifying which components exist at the macro-organizational level and which are characteristics of micro-level, or subsystem, units of organization.
4. These classification schemes are based on different attributes or sets of attributes and, thus, are not themselves directly comparable.
5. Gaps may be found between existing classification schemes, suggesting that either extension and closure of existing schemes or development of alternative classifications may yet be done.
6. Classification schemes developed for institutions of higher education facilitate comparing institutions as wholes (the macro-level), rather than at subsystem, or micro-, levels.
7. Colleges and universities have been the objects of study by organizational theorists, researchers, and practitioners for nearly a century and most of the major schools of thought with regard to organization have been mapped onto them. Few of these theories were developed specifically for higher education, but rather were derived from general organizational theories.
8. No organizational theory, including those developed specifically for institutions of higher education, explains all organizational phenomena in colleges and universities.
9. Organizational structure, both formal and informal, seems to be acknowledged either openly or tacitly by all of the organizational theories applied to colleges and universities.
10. The most useful theories for studying structure in colleges and universities appear to be theories applicable to organizations in general drawn from the larger literature of general organization theory.

General Organizational Theory

Study of organizations and theorizing about their organizational patterns, structures, development, management, and leadership is a much wider field of study than the study of colleges and universities as organizations. Few theorists are concerned solely about institutions of higher education and even fewer theories have been developed primarily from organizational research conducted using colleges and universities as the organizations under study. However, if general organizational theories are, in fact, applicable to all organizations, then there should be a theoretical model (or models) available that may be reasonably applied to organizations of higher education. Furthermore, widely accepted techniques and principles supporting and guiding classification schemes for the purposes of developing organizational taxonomies and typologies available in the physical and social sciences may be generalizable to the development of classification schemes useful in organizations of higher education.

Classification schemes and their development. Classification schemes may themselves be classified and compared. In thinking about and working with the concepts of "typology" and "taxonomy" it may be helpful to examine the definitions and attributes assigned them in the literature and draw comparisons between the two. McKelvey (1982) defines "classification" as "construction of a classification scheme and the identification and assignment of organizational forms to formally recognized classes" (p. 454). He further defines a typology as "essentialism", or "a theory of classification holding that groups of entities exist, each group being composed of members who share a few essential attributes; it is the basis of typological groupings of organizations" (p. 455), holding that they are "one- or two-dimensional schemes based on a priori theorizing" (p. 13) and citing the work of Etzioni (1975); Blau and Scott (1962), Parsons (1956), Katz and Kahn (1978), Perrow (1967), and Thompson (1967) as examples of typologies. Silverman (1971), however, describes typologies as being developed on the basis of a variable which appears to discriminate among organizations. He adds that typologies are developed for the purposes of "explanation and prediction" (p. 15).

Mayr (1969) is cited by McKelvey (1982) as inspiring the definition of "taxon (pl. taxa)" as a "taxonomic group distinct enough to be formally recognized and named as a definite category" (p. 462). He then attributes his definition of "taxonomic character" to Sneath and Sokal (1973), and Mayr (1969), defining it

as "a property or attribute that varies from one entity to another and has discriminatory power" (p. 462). This definition is similar to Silverman's (1971) description of the defining characteristics of typologies, as noted above. Finally, McKelvey (1982) defines "taxonomy" (crediting Hempel, 1965) as "development of theories and methods for classifying organizations; the theory and practice of classification" (p. 462) or as "the development of theories and methods for separating organizations into different kinds, including the understanding of the causes of the stability of organizational forms over time, as well as the mechanism by which they evolve as the result of environmental forces, or in other words a *theory* of classification" (p. 13).

Clegg and Dunkerley (1980) distinguish between taxonomies and typologies on the basis of *a priori/a posteriori* reasoning. They suggest that typologies rely on *a priori* reasoning, while taxonomies are classification systems using the *a posteriori* method. They claim that organizations often are classified according to the typological method, which refers to differences between organizations. However, Caldwell and Black (1971) define a typology as being "a collection of types having certain characteristics in common but also sufficiently different to be distinguishable from another" (p. 66).

Miller and Mintzberg (1980) suggest that organizations naturally cluster into types based on a limited number of variables. Mintzberg (1982) then notes that groupings developed on the bases of such sets of variables may be referred to as "types" (p. 292) and that these form typologies or taxonomies. He distinguishes between the two--taxonomies and typologies--on the basis of how formally they are developed, noting that typologies are composed of "pure types" or "ideal types" (p. 292). "Pure" or "ideal" types may infrequently occur, or not occur at all, in the population, but are derived on the basis of common tendencies or attributes of actual members of the "type", according to Mintzberg (1982).

McKelvey (1982) defines "empiricism" as "approach to classification that posits the existence of naturally occurring groupings, tries to keep classificatory decisions as free from *a priori* theories as possible, weights all possible attributes equally, and assumes that repeated empirical studies using numerical clustering methods will ultimately define a classificatory framework" (p. 455). This appears to be consistent with the definitions of "taxonomy" advanced above.

In keeping with the general tenor of the foregoing review of the definitions of and distinctions between typologies and taxonomies, for the purposes of this study both typologies and taxonomies will be considered classificatory systems capable of being used with groups of organizations. The principal difference between them appears to be the occurrence of *a priori* theorizing or hypothesizing of classifications in association with typology development as opposed to *a posteriori* development of classifications in association with taxonomy development. Association of "pure" or "ideal" types with typology development, as noted in the foregoing discussion, appears to be necessary to the *a priori* theorizing or hypothesizing characteristic of typology development. That is, in the absence of a conceptualization of "pure" types, or at least of their defining parameters, *a priori* classificatory schemes could not be developed (Pfeffer, 1985). However, this does not necessarily mean that "pure" types could not occur in taxonomical classifications. It is possible that one or more members of any empirically determined class could have all the characteristics associated with that class, and none that are not associated with it, and, thus, could be considered "pure" types.

Furthermore, the issue of *a priori*/*a posteriori* theorizing or hypothesizing as a basis for distinction seems artificial in instances where such theorizing or hypothesizing is actually accompanied by data collection and analysis. Few, if any, individuals undertaking such work seem likely to be completely free from *a priori* understandings or conceptions (theories/hypotheses) (Kuhn, 1962; Pfeffer, 1985; Popper, 1970). Indeed, it is difficult to see how any person could undertake to study, or theorize about, a subject of which s/he is completely ignorant (DiRenzo, 1967). It also appears unlikely that any reputable researcher would be so bound by his/her *a priori* theories or hypotheses that collection of data, its analysis, and its reporting *a posteriori* would be completely unaffected by unanticipated findings (Lurie, 1958). Indeed, hypothesis-testing is the basis of the scientific method and demands both *a priori* hypothesizing and *a posteriori* examination of support of /failure to support hypotheses and re-examination of both data and underlying theories or understandings (Miller, 1991). Thus, "typology", as defined above, appears to apply only to those classificatory theories or hypotheses that have not been empirically tested, and all other classificatory schemes appear actually to be taxonomies.

The basis for taxonomy/typology development in organizations. Organizations have long been noted to make claims of "uniqueness" for themselves (e.g., Selznick, 1957). If such claims are true, then it is pointless to conduct comparative studies of organizations or to attempt to develop generalizable theories of organization. However, there is reason to suppose that few, if any, organizations are actually unique. The mythology of organizational uniqueness may be an example of "enactment" (Weick, 1979), or the process of ongoing construction of commonly-accepted organizational reality by participants in the organization. Selznick (1957) argues that this process is a part of the definition of distinctive competence, or the self-identification process, for organizations and their members. Martin, Feldman, Hatch, and Sitkin (1983) refer to this "uniqueness myth" among organizations as the "uniqueness paradox" (p. 439), arguing that a "claim to uniqueness is expressed through cultural manifestations that are not in fact unique" (p. 439). Additionally, as Cyert (1975) argues, educators tacitly stress that organizations and organizational issues are not unique by emphasizing the general applicability of theories and lack of proliferation of specialized schools of management, one for each type of organization; ergo, organizations must not be unique because principles of organizational and managerial theories are transferrable.

If organizational uniqueness does not exist, then it should be possible and practical to develop taxonomical or typological classification schemes applicable to organizations. That such schemes exist for organizations of higher education has been demonstrated in the foregoing review of the literature of higher education. However, the literature of higher education does not provide a comprehensive theoretical basis for the development of such classification schemes. Therefore, it is necessary to turn to the more general literature of organization, social sciences, and natural sciences to identify the underlying principles and schemata of typologies and taxonomies.

"There are variety of reasons to believe that the world of organizations--like the world of ants and of stars--tends to order itself in certain natural clusters" (Mintzberg, 1983, p. 292), a physical science argument. Typical of arguments in favor of categorizing from the social sciences might be, "It is a basic tenet of sociology that an organised pattern can be discerned in all social life" (Silverman, 1971, p. 8), or "Man must classify phenomena in order to be able to think about them" (Hall, 1972, p. 39). A typical argument on behalf of

classification of organizations from organizational researchers and theorists might be represented by Clegg and Dunkerley (1980):

Then it follows that the extent to which organizations (and their structure) differ from or are similar to one another should be questioned. . . . Those interested in organizations are interested in questions such as these. It has long been the task of the organization theorist to establish the characteristics of particular organizations that differentiate them from other types. Even within one type of organization. . . there are obviously differences of many kinds. (p. 140)

Derivation of classification schemes from the physical sciences Those who study and conduct research in the natural sciences have long considered classification schemes necessary to developing systematic understandings about the similarities and dissimilarities among objects of study (Miller, 1991). Classification schemes used may be based on any number of factors, and the same objects of study may be classified variously, depending on the purpose of the study. For example, any given collection of subjects of study might be variously classified simply as animate/inanimate, solid/liquid/gas, animal/mineral/vegetable, through any number of potential classification schemes, including being divided into subsets of classifications (e.g., kingdom/phylum/class/order/family/genus/species). These systems not only make it possible to group similar and dissimilar objects, but also facilitate study and comparison of their structures, origins, and functions; development of hypotheses; and selection of directions for research that seem likely to be fruitful. As Nagel (1961) notes, "The discovery and classification of kinds is an early but indispensable stage in the development of systematic knowledge" (p. 31).

The classificatory approaches used by natural scientists can also be classified into approaches that may be termed "phyletic" (McKelvey, 1982, p. 42) and "phenetic" (McKelvey, 1982, p. 42). The phyletic classification system is based on essentially evolutionary principles (Hendrickson & Bartkovich, 1986), using contemporary evidence as well as that from earlier evolutionary forms to develop classification schemes (and, sometimes, making predictions about further evolution based on historical evidence). It might be argued that this method relies on the availability of classification schemes accounting for contemporary forms and, thus, is theory-dependent. This approach might be thought of as being a typological approach.

The phenetic approach, by contrast, does not necessarily assume *a priori* hypothesizing. Instead, this method of developing classification systems assumes that there must be identifiable similarities and differences

among objects of study and that these can be apprehended if sufficient empirical evidence is collected (Hendrickson & Bartkovich, 1986; McKelvey, 1982). This method relies upon collection and analysis of data to reveal emergent classification systems to the researcher and might be described as a taxonomic approach. Both phyletic and phenetic approaches, while derived from the natural sciences, appear to be applicable in social science research as descriptors of methodological approaches.

McKelvey (1982) assumes that a biological metaphor is applicable to organizations in arguing that all organizations have evolved from a common ancestor, becoming differentiated in response to environmental adaptations driving the course of their evolution. While application of a biological metaphor may be debatable as applied to organizations, there can be little question that the concept of classification schemes (typologies/taxonomies) as useful tools has been widely accepted by students of organizations, or that McKelvey's (1982) conception of

organizational systematics. . .the science of organizational differences: the study of differences among the forms of organizational populations, the development of taxonomic theory, the recognition and classification of important differences, and the discovery of how and why the differences came about (p. 2)

has been an important and widely accepted tool in study of organizations.

Development of social sciences classification schemes for organizations. In discussing the use of organizational systematics in the social sciences, McKelvey (1982) reviews four uses for which a general classification for organizations might be important. Citing Hempel (1965) and Haas, Hall, and Johnson (1966), he suggests that it would provide "basis for explanation, prediction, and scientific understanding by identifying homogenous populations of organizations about which hypotheses might be tested and general laws and principles. . .developed" (p. 17). He further cites Mayr (1969) in support of his contentions that a general classification scheme would not only provide a "conceptual framework" (p. 17) for describing diverse organizations or groups of organizations, but also could assist in development of a relatively limited number of classes. Finally, McKelvey (1982) and Mechanic (1963) appear to agree that such a classification system might make it possible to use classification variables in place of complex and unwieldy sets of discrete variables, and thus facilitate study of organizations and comparisons of organizations and classes of organizations. As

education, as a field of study, appears to be more nearly akin to the social sciences than to the physical sciences, organizational systematics appears to have utility in the study of educational organizations.

The number of classification schemes, taxonomies, and typologies that have been developed to explain organizations over the last century or so is nearly overwhelming (Morgan, 1990). Equally overwhelming is the diversity of the variables or attributes that have been selected as the bases for the classifications. While it would be virtually impossible to recognize here every one of the many classification schemes that have been proposed in the general organizational literature, Figure 3 provides a limited sample.

Other classification schemes could be listed in Figure 3, yet none appears to be a comprehensive scheme capable of accounting for all variables, differences, or similarities among organizations or of providing a system of classifications that is at once comprehensive, discrete, and economical in its subclassifications. Review of the literature of general theories of organization (e.g., Bess, 1984; Burrell & Morgan, 1979; Evered & Louis, 1981; Hassard, 1990; Morgan, 1986, 1990; Owens, 1995; Pfeffer, 1985; Popper, 1970) indicates that there is no general unified theory of organization. As Cameron and Whetten (1983) note (comparing models of organizational effectiveness), "... none of the models are universally applicable" (p. xi). Therefore, recognizing and understanding the contributions of different organizational models is necessary to working with theories of organization (Aldrich, 1992; Cameron & Whetten, 1983; Gergen, 1992; Reed, 1992). While each of the organizational models is a limited model and each is based on the use of a different variable or set of variables to discriminate among types (Aldrich, 1992; Reed, 1992), and while none appears to be a general unified model (Bess, 1984; Burrell & Morgan, 1979; Evered & Louis, 1981; Hassard, 1990; Morgan, 1986, 1990; Pfeffer, 1985; Popper, 1970), each of the generally-accepted theories appears to account for some aspects of organizations.

Pfeffer's (1985) definition of the organization theory and description of its domains demonstrates the scope of the problem:

Organization theory encompasses the interdisciplinary study of all aspects of behavior in and by formal organizations. As such, it incorporates aspects of sociology, psychology, economics, political science, and anthropology. It treats as units of analysis everything from individuals acting, feeling, and thinking in organizational context to groups, larger subunits such as departments or divisions, the organization as a whole, and, recently, even

populations of organizations and the relationship of organizations to larger social structures such as the state and society. (p. 379)

<u>Classificatory Scheme by Developer(s)</u>	<u>Variable(s) on Which Based</u>
Blau and Scott (1962)	prime beneficiary
Rhenman (1973)	focus & mission
Parsons (1960)	social function
Weber (1947)	power structure
Gouldner (1954)	support for rules
Etzioni (1961)	authority and compliance
Duverger (1963)	political party structure
Pugh et al. (1963, 1968, 1969)	evidence of structure
Woodward (1965)	technological complexity
Perrow (1967)	technological uncertainty
McKelvey (1975)	evolutionary forms
Katz and Kahn (1978)	contribution to society
Boulding (1956)	system complexity
Child (1974, 1975)	performance
Hannan and Freeman (1977)	ecological adaptation
Mahoney and Weitzel (1969)	management
Mott (1972)	effectiveness
Pfeffer and Salancik (1978)	locus of control
Burns and Stalker (1961)	structure and processes

Figure 3.--Illustrative Sample of Classification Schemes for Organizations and Variables On Which They Are Based

Nevertheless, organizational theories cannot be said to be necessarily incommensurate, despite their differences, but merely incomplete, underexplored, or not fully tested (Driggers, 1977; Hassard, 1990; Morgan, 1990; Pfeffer, 1985; Popper, 1970). This is in keeping with Spinner's (1973) recommendation that researchers should engage in "frontier-crossing" (p. 78) in applying theory, arguing for "a republic of equally comprehensive but mutually inconsistent or even incommensurable theories competing with and critiquing each other. . . a dialectical diversity in unity and a unity in diversity, thus guaranteeing that science is really living and even in flux" (pp. 1970-71).

Driggers (1977) suggests that the Kuhn (1970), Hanson (1958), and Polanyi (1963) conceptions of the inability of human beings to simultaneously hold inconsistent theoretical stances may be unnecessarily limiting as applied to organizational research. Instead, he argues that researchers might use a "trans-theoretic paradigm" (p. 152) allowing them to work simultaneously with different subsets of organizational theory. The "trans-theoretic paradigm" assumes that errors in or apparent incommensurability of organizational theories are

more likely to be the result of epistemological errors on the part of researchers and practitioners than to actual incommensurability of theories of organizations (Driggers, 1977; Giddens, 1976; Hassard, 1990).

Overview of organizational theories. If it is reasonable to accept organizational theories as not necessarily incommensurate, despite their differences, but merely incomplete, underexplored, or not fully tested or articulated (Driggers, 1977; Hassard, 1990; Morgan, 1990; Pfeffer, 1985; Popper, 1970), then it is practical to use a trans-theoretical paradigm in looking to the universe of theories of organization for evidence of utility in studying institutions of higher education and, more particularly, the systems or subsystems within them involved with developmental education as previously defined. Further, in failing to consider the various organizational theories as incommensurate, the way is opened to use of more than one theory, or parts of more than one theory, in developing typologies or taxonomies of developmental education organizations. Finally, the use of one or more theories that seem especially useful in developing such understandings can be understood as a method of developing pragmatic tools for use until better understandings can be developed and not as either overwhelming endorsement of the theories used or outright rejection of all other theories of organization, in the absence of a general unified theory of organization.

General theories of organizations. There appears to be some consensus on classification of organizational theories into a limited number of types. These include:

- (a) structural approaches (e.g., Aldrich, 1992; Blau & Scott, 1962; DiMaggio & Powell, 1983; Dobbin, Edelman, Meyer, Scott, & Swidler, 1988; Bolman & Deal, 1984; Fayol, 1949; Fine, 1984; Gouldner, 1959; Mooney & Reiley, 1931; Parsons, 1960; Perrow, 1973; Powell, 1988; Meyer, Scott, Strang, & Creighton, 1988; Selznick, 1957; Singh, Tucker, & House, 1986; Stinchcombe, 1965; Taylor, 1911; Thompson, 1967; Urwick & Gulick, 1937; Weber, 1947);
- (b) human relations approaches (e.g., Argyris, 1962; Argyris & Schon, 1974; Bolman & Deal, 1984; McGregor, 1960; Perrow, 1973), political approaches (Bolman & Deal, 1984; McNeil, 1978; Pettigrew, 1973; Pfeffer, 1981, 1982; Perrow, 1973);
- (c) symbolic approaches (e.g., Bolman & Deal, 1984; Clark, 1972);

Meyerson & Martin, 1987; Morgan, 1986; Ouchi, 1981; Peters & Waterman, 1982; Turner, 1990);

(d) environmental systems (e.g., Aldrich, 1992; Aldrich & Pfeffer, 1976; Gouldner, 1959; Hannan & Freeman, 1977, 1986, 1989; Mills & Murgatroyd, 1991; Perrow, 1973; Pfeffer & Salancik, 1978; Reed, 1985, 1992; Scott, 1983; Thompson & McHugh, 1990); and,

(e) contingency theories (e.g., Ashour, 1979; Fiedler, 1965, 1967; Fiedler & Chemers, 1974; Fiedler & Maher, 1976; Graen, Orris, & Alvares, 1971;

Graen, Alvares, Orris, & Martella, 1970; Korman, 1974; Lawrence & Lorsch, 1967; Strube & Garcia, 1981).

Turning to review of the major theories of organization, Perrow's (1973) historical review appears to be a sound place to begin. He suggests that the first generally accepted theory of organization was that of scientific management, which is based on the assumption that organizations operate like machines and can be managed through policy making and record keeping, delegation of responsibility, documented and clearly delineated lines of authority and limited spans of control, and task specialization. Perrow notes that this school of thought, first documented near the beginning of this century, may still be seen in action in programs like management by objectives.

The human relations school of management developed in reaction to this mechanistic approach to organizational management. Barnard's (1938) book, The Functions of the Executive, and Roethlisberger and Dickson's (1939) report on the Hawthorne Studies at Western Electric were among the first to focus on organizations as being composed of human beings who voluntarily cooperate toward some task or goal (both as individuals and as members of a group or groups within the organization), according to Perrow (1973). He notes that adherents of the human relations school of management hypothesize that democratic methods, decentralized and bottom-up authority and decision-making, innovation and leadership, and intergroup social relations are critical to organizational success. A current expression of the human relations school of organizational theory might be Total Quality Management.

The next school of organizational thought to emerge in the United States, according to Perrow (1973), was based on the bureaucratic theories of Max Weber, written early in the 20th century and only translated into English and widely available in the United States during the late 1940s. Described by Perrow as a return of the use of a machine metaphor in organizational theory, bureaucratic approaches emphasize expertise, planning, clearly allocated lines of authority and communication, the ability to change rapidly, and high morale among employees. Currency of the bureaucratic school is evidenced in the line and staff organizational charts prepared by many organizations.

The next wave of organizational theories to be put forward in the United States during the 1950s and early 1960s, Perrow (1973) writes, has a political orientation. These theories view organizations as composed of individuals who are both of limited rationality and active in forming coalitions in pursuit of accomplishment of their aims, or those of their subgroups, within organizations. Perrow (1973) associates the work of March and Simon with this area of organizational theory. Contingency theories might be another example of theories with a political orientation.

The simpler assumptions of the bureaucratic, human relations, and political schools of thought were brought into doubt by the notions of researchers who observed that the technology of any particular organization was related to the best way of organizing; different tasks require differing technologies and those determine the most appropriate structuring of the organization (Perrow, 1973). In organizations with routine tasks and relatively stable technologies, it is believed that bureaucratic forms of organizing are preferable; while in relatively unstable or fluid organizations with changing technologies or fluid constituencies, decentralized and interpersonal processes appear to be more successful, according to Perrow (1973). He notes the contributions of Lawrence and Lorsch, as well as those of Thompson, in suggesting that organizations function best when differences among subsystems of the organizations are maximized and communication among them facilitated by integrating mechanisms with both bureaucratic and fluid characteristics.

A final school of organizational theorizing is described by Perrow (1973) as that of environments and systems. He describes the environmental approach as the task of accounting for environmental influences and goal accomplishment, indicating the theories suggest that important goals are often unstated, that important

leaders sometimes are not those officially recognized as such, and that organizational mythmaking often distorts the truth of history in support of internal political ends. This approach, referred to by Perrow as "neo-Weberian", supports the bureaucratic notion of structure and management as being important in coercing the various subgroups of the organization into accomplishment of the tasks of the organization.

This notion of subgroups, and organizations as both subgroups themselves of a greater environment and composed of collections of internal subgroups, is, as Perrow (1973) notes, congruent with the concept of organizations as open systems and, he argues, is accepted by all schools of organizational theorizing. He writes, "Every unit, organization, department, or work group takes in resources, transforms them, and sends them out, and thus interacts with the larger system. The psychological, sociological, and cultural aspects of units interact" (p. 200).

Perrow (1973) concludes with several generalizations about organizations and organizational theories. He argues that variation among organizations is partially attributable to the environment in which they operate and partially attributable to the work of organizations, or their technologies. He adds that neither a human relations orientation nor leadership are as important as organizational structure in resolving the problems and issues within organizations. However, he also notes that merely examining the formal structure, that represented by line and staff organizational charts, is unlikely to reveal all the forces actually at work in organizations or to fully account for variations among organizations. He suggests that additional examination of what might be termed the informal structure of the organizations is necessary to identify where power and authority actually lie, where specialization occurs, and how rules and regulations are communicated and acted upon. His thesis appears to be that identifying and understanding both the formal and informal structures of organizations is necessary and neither alone is sufficient to account for differences among organizations.

Examination of the various schools of organizational theorizing suggested above--scientific management/bureaucratic, human relations, political, environment and systems, and contingency--in light of Perrow's (1973) suggestions about the importance of both formal and informal structure, and of his notions about the sources of variation among organizations, may be useful in helping to identify theories, or parts of theories, of value to the present study. It may be argued that the scientific management, bureaucratic (whether

Weberian or Neo-Weberian), and systems theories are overtly concerned with the formal structures of organizations. The remaining schools of thought appear to recognize the formal structures of organizations, but are more concerned with the informal structure(s). They not only recognize the overt and formally recognized structures of the organization, but also the interpersonal, intergroup, or intersystem relationships that form a structure and set of working relationships outside the formal structure recognized as on the line and staff organizational chart.

Looking at an organization and its subsystems from a systems perspective, it might be possible to identify "formal" or "intended" systems, as well as "informal" or "ad hoc" systems that have sprung up to carry out the functions and functional articulations not provided for by the formal set of systems. These might be analogous to the formal and informal structures of an organization. In order to do so, however, it may be necessary to differentiate between the concepts of "organization" and "structure".

Differentiation between organization and structure. While the terms are sometimes used almost interchangeably in the literature, Mahoney's (1991) discussion of the distinctions drawn by Maturana and Varela between the two simplifies this potentially complex problem to a few sentences:

It is important to emphasize, however, that *structure* and *organization* are not considered synonymous. . . . *Organization* (from the Greek *organon*, meaning 'instrument') refers to the 'relations between components that define and specify as composite unity of a particular class, and determine its properties as such a unity.' *Structure* (from the Latin *struere*, 'to build'), on the other hand, 'refers to the actual components and to the actual relations that these must satisfy in the participation in the constitution of a given composite unity' (Maturana, 1980, p. 32). In other words, *organization* refers to the abstract relations that *define* a given individual or system as being itself and an instance of a class, while *structure* refers to the actual (concrete) particulars that comprise that individual or system at any given point in time. (p. 392)

Given this distinction, it is possible to see that organizations belonging to the same class of organizations, such as institutions of higher education (e.g., colleges and universities), may be structured differently. Because structure is said to have both system and pattern (Scott & Mitchell, 1976), it can be operationalized. Then it should be possible to subclassify these organizations or their subsystems on the basis of structure.

Further, it is conceivable that subclassifications based on formal structures may not be completely congruent with subclassifications based on informal structures. To rely solely on either formal or informal structure, then, could lead to errors in classification and, thus, to errors in understanding organizations. As

noted by Burns and Stalker (1961) and Clegg and Dunkerley (1980) the formal organization, as designated by an organizational chart, may always exist. However, the informal organization may well ignore the formal organizational chart in focusing on accomplishment of work objectives (Burns & Stalker, 1961; Clegg & Dunkerley, 1980). Therefore, to develop a classification system for organizations as systems or subsystems, it appears to be necessary not only to identify their formal organizational structures as available from organization charts, but also to attempt to identify their informal organizational structures.

Structural aspects of theories of organization. What theories or portions of theories are informative about the formal and informal organizational structures? Two general areas of theory have been identified above as overtly stressing the formal structures of organizations: bureaucratic and systems theories. Human relations, political, and environmental theories appear to be more overtly concerned with the informal structures within organizations, but also to have implications for the formal structures. Contingency theories, although principally engaged with leadership and management rather than either formal or informal structures, suggest that there is no one "best" way to structure an organization (Bolman & Deal, 1984; Lawrence & Lorsch, 1967; Pfeffer, 1985; Stevens & Williams, 1988). Instead, some contingency theorists hold that an analysis of the interactions of a number of variables, including the formal and informal organizational structures, in any given organization would be necessary to identify the best way to structure any given organization at any given point in time (Bensimon, Neumann, & Birnbaum, 1989; Bolman & Deal, 1984; Pugh, Hickson, Hinings, & Turner, 1969). Contingency theories, then, appear to support use of the trans-theoretic paradigm (Driggers, 1977). Use of the trans-theoretic paradigm in examining the various theories of organization allows the opportunity of identifying those aspects of each theory dealing with the formal and informal structures of organization and applying them in study of institutions of higher education and their subsystems, including those dealing with developmental education.

Formal structures in organizations. Although it has been claimed that organizational theory cannot adequately account for the processes that cause distinctively different structural configurations (Fombrun, 1989), there is a significant body of work concerned with identifying and classifying those organizational

structures. One of the most common classification systems divides organizational structure into formal and informal structures, with differing internal arrangements (Scott & Mitchell, 1976).

According to Bensimon et al. (1989) formal structure might be described as,

The structural frame, as exemplified by the work of Max Weber (1947), considers organizations as hierarchical systems of roles with fixed divisions of labor characterized by written rules and promotion based on merit (Etzioni, 1964). Different organizational structures are assumed to be most suitable to support different activities and designing an appropriate structure is seen as essential to maximizing organizational effectiveness. (p. 28)

Blau and Scott (1962) define formal "organizations" by describing them thusly:

There are organizations that have been deliberately established for a certain purpose. . . In these cases, the goals to be achieved, the rules the members of the organization are expected to follow, and the status structure that defines the relations between them (the organizational chart) have not spontaneously emerged in the course of social interaction but have been consciously designed a priori to anticipate and guide interactions and activities. Since the distinctive characteristic of these organizations is that they have been formally established for the explicit purpose of achieving certain goals, the term 'formal organizations' is used to designate them. (p. 5)

This way of conceptualizing the formal structures of organizations is based on a few fundamental assumptions. These are often essentially bureaucratic or neo-bureaucratic in nature and are derived from the work of such theorists and practitioners as Taylor (1911); Fayol (1949); Gulick and Urwick (1937); Weber (1947); Blau and Scott (1962); Hall (1963); Porter and Lawler (1965); Perrow (1972), James and Jones (1976); Berger and Cummings (1979); Todor, Spendolini, Fielding, and Porter (1980); Miles (1980); Hage (1980); Blackburn (1982), and Clark (1985).

The fundamental assumptions of structuralists like those noted above may include the following:

1. Organizations exist primarily to accomplish [formally] established goals.
2. For any organization, there is a structure appropriate to the goals, the environment, the technology, and the participants.
3. Organizations work most effectively when environmental turbulence and the personal preferences of participants are constrained by the norms of rationality.,
4. Specialization permits higher levels of individual expertise and performance.
5. Coordination and control are accomplished best through the exercise of authority and impersonal rules.
6. Structures can be systematically designed and implemented.
7. Organizational problems usually reflect an inappropriate structure and can be resolved through redesign and reorganization. (Bolman & Deal, 1984, pp. 31-32)

Jablin's (1987) analysis of the writings of structuralists, such as those mentioned above, identifies four key structural dimensions in organizations. These include the dimension of configuration, which might be taken to include such factors as organizational size and span of control. The second dimension identified by Jablin is "complexity" (p. 391), which is described as being both vertical and horizontal and apparently refers to the complexity of line and staff organization. The third structural dimension is the degree of formalization within an organization. Jablin specifically attributes the concept of formalization to the work of Max Weber and defines it as "the degree to which the behaviors and requirements of jobs are explicit--that is, codified into policies, rules, regulations, customs, and so forth" (p. 404). The final structural dimension discussed by Jablin is that of decentralization, by which he apparently means a continuum from complete centralization to complete decentralization along which organizations may be arranged.

Writing nearly twenty years earlier than Jablin, Blau (1970) proposes a formal theory of differentiation in organizations along four dimensions--"spatial, occupational, hierarchical, [and] functional" (p. 201). These, he writes, form the core of the structures of formal organizations. In reviewing the work of Blau, Scott (1990) argues that these aspects of Blau's work have stood up over time.

Writing about the same time as Blau, Pugh, Hickson, Hinings, and Turner (1963) hypothesize six dimensions of organizational structure. These include "(1) specialization, (2) standardization, (3) formalization, (4) centralization, (5) configuration, and (6) flexibility" (p. 289). The authors argue that specialization can be conceived as being the degree of division of labor within the organization. Standardization may be divided into two parts: standardization of procedures and standardization of roles. Formalization is characterized as being the degree to which communications and procedures are recorded, while centralization refers "locus of authority to make decisions affecting the organization" (p. 304). Pugh et al. recognize that authority may be of two types: formal authority or personal authority based on individual characteristics. Configuration is the general shape or structure of the organization as expressed by the organizational chart. Flexibility describes the organization's ability to make change in itself. The authors conceive of these as being variables useful in analysis of organizational structures because they can be empirically verified. They recommend the use of comparative studies to develop "organizational profiles along these variables (p. 289).

Pugh et al. (1968) claim to have identified "four empirically established underlying dimensions of organizational structure: structuring of activities, encompassing Standardization, Formalization, Specialization, and Vertical Span; concentration of authority. . . , line control of workflow. . . , and relative size of supportive component" (p. 89). In so conceiving structure, they argue that the concept of structure can be moved beyond the theoretical construct of bureaucracy and into an operationalizable dimension of organization. This ability to operationalize structure in organizations is an important step in being able to conduct research involving formal organizational structure.

In discussing structure in organizations, Jablin (1987) argues that formal structure should be considered a method for making manifest to members of the organization the constraints on their communication processes within the organization, citing the work of McPhee (1985) and Watzlavick, Beavin, and Jackson (1967) as the underpinnings of his argument. Wilson and Corbett (1983), Perrow (1986), and Peters (1994) also support this argument. In keeping with the bureaucratic or neo-bureaucratic basis for the formal structural view of organizations, it may be supposed that the primary method for making these structural constraints known to members of the organization is identification of chain of command via the formal organizational chart (Abbott & Caracheo, 1988; Lawrence & Lorsch, 1967). Therefore, one method for operationalizing the formal structure of organizations is examination of their organizational charts (Meyer & Rowan, 1977).

However, some organizational theorists and researchers have suggested that the formal structure of an organization as delineated via its organizational chart may not be the only way of conceptualizing structure in organizations. Perrow (1986) argues persuasively that bureaucratic theory more nearly applies to formal organizations than any other branch of organizational theory. He further posits that the formal structure of an organization is "the single most important key to its functioning, no matter how much it may be violated in practice; the violations themselves reflect the constraints of the formal structure" (p. 260). He is joined in his notion that the formal structure operates as a constraint as noted above (e.g., Jablin, 1987; McPhee, 1985; Peters, 1994; Watzlavick, Beavin, & Jackson, 1967; Wilson & Corbett, 1983). Therefore, it might be

suggested that the formal structure of an organization itself begets the informal structure(s) due to constraints that must be resolved in order to accomplish the organization's objectives.

Meyer (1968), Hickson, Hinings, Lee, Schneck, and Pennings (1971) and Bolman and Deal (1984) suggest that there might be both vertical and horizontal/lateral structures within organizations and that horizontal/lateral structures, because they represented personal rather than formal power, might not be indicated on formal organizational charts. Evidence to support this suggestion, as stated by Hickson et al., was identified by Hinings, Hickson, Pennings, and Schneck (1974) and Salancik and Pfeffer (1974). As summarized by Blackburn (1981), horizontal structures represent efforts of lower-level members of the organization to manage organizational needs unmet by the formal structures of the organization. Thus, it may be supposed that informal organizational structures may exist alongside formal structures and that both may be important to the function of the organization.

Informal structures in organizations. Perrow (1986) continues, "The explanation for organizational behavior is not primarily in the formal structure of the organization. . . . It lies largely in the myriad subterranean processes of informal groups. . ." (p. 159). He is supported in this proposition by Selznick (1948), who writes,

The formal administrative design can never adequately or fully reflect the concrete organization to which it refers, for the obvious reason that no abstract plan or pattern can--or may, if it is to be useful--exhaustively describe an empirical totality. (p. 25)

Clark (1985) states the proposition even more strongly:

Individual authority and responsibility in organizations are variables governed jointly by the day-to-day sense-making activities of organizational participants and by designated organizational position. At any given time for any given task, congruity between these variables should be considered an aberration. (p. 50)

In other words, while a formal structure, characterized by the organizational chart may exist, actual working relationships may ignore them (Burns and Stalker, 1961)

Blau and Scott (1962) define informal "organizations" by describing them:

In every formal organization there arise informal organizations. The constituent groups of the organization. . . develop their own practices, values, norms, and social relations as their members live and work together. The roots of these informal systems are embedded in the formal organization itself and nurtured by the very formality of its arrangements

... complex networks of social relations and informal status structures emerge, within groups and between them, which are influenced by many factors besides the organizational chart. . . But to say that these informal structures are not completely determined by the formal institution is not to say that they are entirely independent of it. For informal organizations develop in response to the opportunities created and the problems posed by their environment, and the formal organization constitutes the immediate environment of the groups within it. . . .

It is impossible to understand the nature of a formal organization without investigating the networks of informal relations and unofficial norms as well as the formal hierarchy of authority and the informally emerging patterns are inextricably intertwined. The distinction between the formal and informal aspects of organizational life is only an analytical one and should not be reified. . . .(p. 6)

While descriptive definitions are very useful in helping to distinguish between the two as subtypes of organizations, these descriptions also help to distinguish between the internal structures of the two.

Barnard's (1938) work, The Functions of the Executive, may be the first to fully surface the role of informal groups within organizations and the first to argue that such informal organizational structures are necessary to the functioning of the formal organizational structure. While suggesting that Barnard views informal structures as essentially nonrational, Perrow (1986) proposes that they are, in fact, rational responses to deficiencies in the formal structure within the organization serving to resolve problems created by those deficiencies. This proposal is supported by Hoy and Miskel (1987) and Abrahamsson (1993).

This conception is similar to Mintzberg's (1983) description of what must occur when professionals cooperate in innovation, what he refers to as "Adhocracy" (p. 165). He writes, "[T]hey must typically combine their expertise by working in small groups and must coordinate informally--by what we have called 'mutual adjustment.' The structure of organizations composed of such groups is looser, more organic, less bureaucratic. . ." (p. 165). He continues: "[T]he essence of expertise is the differentiation of power--power distributed according to specialized capability" (p. 165). This he calls "the system of expertise" (p. 164).

A slightly different, yet related, notion of the organization as a system is that of the natural system model (Gouldner, 1959), originally devised as an alternative to the rationalistic model of organization-as-formally-structured. According to this view of organizations, the emphasis is on evolving structures as required to satisfy organizational survival needs (a biological metaphor similar to McKelvey, 1982, or Hannan and Freeman, 1989). While specific structures may have been designed according to some formula or formal plan, they tend to adapt to changing circumstances and to develop unplanned characteristics or tasks not accounted

for in the formally developed organization (Bensimon, Neumann, & Birnbaum, 1989; Blau & Scott, 1962; Lorsch, 1980; March & Olsen, 1976, Wassenberg, 1977). Taken from this perspective, informal patterns of organization are rationally adaptive responses to changing conditions, responses that bring the expertise of the members of the organization to bear on perceived problems or threats (McKelvey, 1982). This is similar to Selznick's (1948) assertion that, while the formal structure is important, it is supplemented by the informal structure(s) created by organizational members interacting as individuals not bound by the positions they occupy in the formal structure or the roles associated with those positions.

Why both formal and informal structures? If the informal structures are so important in bridging the shortcomings of formal structures or permitting adaptation to changing conditions, why not simply incorporate them into the formal structure? Barnard (1938) and Galbraith (1973) argue that both are necessary for successful functioning of any organization. Barnard appears to have been among the first, if not the first, to note the dialectic between formal and informal structures or organizations. He writes, "Formal organizations arise out of and are necessary to informal organizations; but when formal organizations come into operation, they create and require informal organizations" (p. 120).

Meyer and Rowan (1983) add, "A sharp distinction should be made between the formal structure of an organization and its actual day-to-day work activities" (p. 23). They note,

Organizations are driven to incorporate the practices and procedures defined by prevailing rationalized concepts of organizational work and institutionalized in society. Organizations that do so increase their legitimacy and their survival prospects, independent of the immediate legitimacy of the acquired practices and procedures The formal structures of many organizations. . .dramatically reflect the myths of their institutional environments instead of the demands of their work activities. . . .Such rules may be simply taken for granted or may be supplied by public opinion or force of law. . . (pp. 21-22)

Thus, it might be argued that the formal structures of organizations are, at least in part, self-protective enactments of socially constructed reality (Berger & Luckman, 1967; DiMaggio, 1988; DiMaggio & Powell, 1983; Dowling & Pfeffer, 1975; Emery & Trist, 1965; Knoke, 1982; Parsons, 1956a; Udy, 1970) designed to increase their capacities for survival (Ahrne, 1994; Meyer & Rowan, 1977, 1983), while requiring the informal structures to completely carry out the tasks of the organization (e.g., Barnard, 1938). Selznick (1966) suggests that, although the informal structures of organizations or informal subsystems of organizations may negatively

affect the operations of the formal structure, deviations represented by the informal structure(s) or systems may equally well support the formal structure or modify it in needed ways.

This may also account for both the discrepancies noted between the formal and informal structures of organization (e.g., Dalton, 1959; Downs, 1967; Homans, 1950; Wassenberg, 1977) as well as for loose coupling (Meyer & Rowan, 1977, 1983; Weick, 1976) within organizations. When a significant portion of the tasks of the organization cannot be accomplished through the formal organizational structure (March & Olson, 1976), they must be accomplished by the informal organizational structure(s) (Perrow, 1984) and these must be decoupled (Weick, 1976) from the formally established structure in order to maintain the legitimacy of the formal organizational structure.

Systems theories and organizational structure. "Organizations are, first and foremost, systems of elements, each of which affects and is affected by the others" (Scott, 1981, p. 18). What is meant by "systems" approaches to organizational theory? One of the earliest mentions of "systems" in the context of organizational theory, was in regard to the Hawthorne studies (Henderson, 1935). Probably the earliest organizational theorist to overtly take what has become known as a systems approach was Parsons (1951, 1960), whose structural functionalist approach implies a systems model (Clegg & Dunkerley, 1980; Cohen, 1970). He submits that any organization must manage four problems in order to survive: goal attainment, adaptation, integration, and latency. To manage these problems, he argues, any organization must develop systems whose tasks they are, and that each of these systems must develop subsystems whose tasks they are, *et ad infinitum*, down to the level of the individual (Parsons, 1951, 1960; Clegg & Dunkerley, 1980).

Although it might be argued that Parsons was essentially using an open systems model in suggesting that every system must have a set of subsystems for which the system became the environment, Katz and Kahn's (1966, 1978) social psychological analyses of organizations and organizational theory provided the working framework upon which open systems theories have been constructed. Clegg and Dunkerley (1980) provide an excellent synopsis of open systems theories:

Complex systems contain within them sub-systems that normally function in an independent manner but are oriented towards the overall goal of the wider system. An examination of the sub-systems is one way of understanding the overall system. Within the sub-system there are system components that interact with one another and which, again, tend to be

interdependent. Systems do not exist in a vacuum. They always interact with and exist within a specific environment. The nature of this interaction means that systems both influence, and are influenced by, their environment. Recognition of this environmental factor enables us to refer to systems as being more or less open systems. The interaction between the system and its environment often takes the form of exchanging inputs and outputs, which in turn enables us to define the system boundary. Often systems are designed in such a way that part of the output becomes an input; this is the notion of system feedback. (p. 191).

The open systems approach suggests that organizations cannot be decoupled from their environments (Ahme, 1994; Katz & Kahn, 1966, 1978; Mahoney, 1991; Perrow, 1984; Scott, 1981) and, thus, must attempt to maintain legitimacy as defined in that environment (e.g., by maintaining the formal organizational structures prescribed by that environment as legitimating). However, nothing in the open systems approach appears to deny the co-existence or cooperation of both formal and informal systems within the organization, or loose coupling among them (Perrow, 1984).

Indeed, the open systems approach's underlying tenets suggest an adaptive stance which also implies what might be called a "contingency approach" (Tosti & Hamner, 1974), "contingency view" (Kast & Rosenzweig, 1973) or "contingency theory" (Fiedler, 1967; Galbraith, 1973; Lawrence & Lorsch, 1967), so termed because of the contingent nature of interactions among systems and subsystems in open systems theory. A contingency approach to systems seems to imply that Katz and Kahn's (1966) principle of "equifinality", or the idea that the same end result can be accomplished in any number of different ways, applies to organizational systems, subsystems, and their structuring (Hoy & Miskel, 1987). Kast and Rosenzweig explain, "The contingency view seeks to understand the interrelations within and among subsystems as well as between the organization and its environment and to define patterns of relationships or configurations of variables. It emphasizes the multivariate nature of organizations. . ." (1973, p. 313).

Barnard (1966), Selznick (1948, 1966), and Thompson (1967) are among those who argue that organizations represent cooperative systems, defined by Barnard as being

a complex of physical, biological, personal, and social components which are in a specific systematic relationship by reason of cooperation of two or more persons for at least one definite end. Such a system is evidently a subordinate unit of larger systems from one point of view; and itself embraces subsidiary systems. . . from another point of view. One of the systems comprised within a cooperative system, the one which is implicit in the phrase 'cooperation of two or more persons,' is called an 'organization.' (p. 14)

Writing much earlier, but to much the same point, Selznick (1948) defines organizations as "co-operative systems, adaptive social structures, made up of interacting individuals, business-groups, and informal plus formal relationships" (p. 34-35). Conceiving of organizations as systems and subsystems in this way corresponds to an open systems perspective (Blau, 1974; Scott, 1981).

Selznick (1966) continues,

The relevance of informal structures to organizational analysis underlines the significance of conceiving of formal organizations as cooperative systems. When the totality of interacting groups and individuals becomes the object of inquiry, the latter is not restricted by formal, legal, or procedural dimensions. (p. 23)

In this sense, Selznick may be construed (e.g., Scott & Mitchell, 1976) as arguing, from a systems approach, that organizations contain two types of structures, or systems, the formal and the informal, and that both are important to understanding the activities of organizations as wholes. This is what Gouldner (1959) and McKelvey (1982) refer to as a "natural systems" approach, which McKelvey defines as an approach "with explicit attention to natural system forces [organizational survival] and the effects of informal groups and informal patterns of organization" (p. 82) in pursuit of some designated goal(s).

Macro- and micro-theories of systems and structures. Open systems theories of organization and systems approaches to understanding the structures and activities of organizations appear to lead to inevitably to discussions of how to identify systems and subsystems and determine their boundaries. One commonly applied distinction is that of "macro-" and "micro-" perspectives (Ahne, 1990; Aldrich, 1971; Alexander & Giesen, 1988; Alexander, Giesen, Münch, & Spelser, 1987; Argyris, 1972; Benson, 1973; Collins, 1981; Crozier, 1973a; Driggers, 1977; Hall, 1972; Heydebrand, 1973; Knorr-Cetina, 1981; Krupp, 1972; Marrett, 1971; Munch, & Smelser, 1987; Silverman, 1971; Strauss, 1963; Zucker, 1988). The macro-systems level can be characterized as that of

study of society, of social institutions, and of socio-cultural change on an aggregate level. A macro-sociological approach can entail both the use of theoretical concepts on a system level and use of aggregate data derived from individual micro-level responses to characterize social collectivities. (Knorr-Cetina, 1981, p. 1).

The micro- level of study, of organizational systems, then, is study of subsystems comprising any aggregate system (Collins, 1981b).

Taking a structural-functional stance toward systems allows identification of the subsystems of any particular system as the micro-systems of that system. Conversely, identification of subsystems makes it possible to identify the aggregate system to which they belong as the macro-system for those subsystems (Silverman, 1971). This distinction seems to lend itself to distinguishing systems and subsystems, and their structures, from one another in an operationalizable way for purposes of study.

The macro-micro distinction can also be said to assist in theory development. According to Collins (1981a) "micro-reduction" (p. 93) aids in producing stronger theory by introduction of empirical evidence of the situations and behaviors that compose phenomena of interest. Furthermore, macro- level theories should be capable of being identified in micro-systems or structures if in fact they are correct theories (Collins, 1981a), just as structures evident in a macro-system should be obviously derived from those of its micro-system(s) (Collins, 1981b; Knorr-Cetina, 1981). Therefore, mirroring of theories developed for the macro- level of analysis in micro- levels suggests that theory is grounded in fact and, therefore, more plausible than ungrounded theory (Collins, 1981a; Zucker, 1988).

Organizational theory and the trans-theoretic paradigm. It may be argued (e.g., Ahrne, 1994; Clark, 1985; Getzels, 1958) that the essential tenets of Weberian bureaucracy underlie all Western organizational theories. As Ahrne (1994) notes "Bureaucracy is not a special form of organization. Bureaucratic elements may exist to different degrees and in different combinations in many forms of organization" (p. 105). While, as discussed previously, contingency theorists maintain that there is no one best way to structure an organization, the mere fact that formal and informal structuring are elements that are to be considered is indicative of the persistence of the bureaucratic, or structural, approach to organization across the range of organizational theories (Pfeffer, 1982).

Significantly, as also discussed in the foregoing, contingency theorists apparently advocate use of the trans-theoretic paradigm. Upon applying the trans-theoretic paradigm to bureaucracy, it may be reasonably suggested that bureaucracy is a special instance of systems theory. Taking the formal organizational chart as representing the formally intended, aggregate organization, or formal macro-system structure, the bureaucratic line and staff arrangements may be readily seen to represent the formal subsystems, or formal micro-systems

structure, of the organization. Thus, it is possible to demonstrate that portions, at least, of bureaucratic, systems, and contingency theories of organization are not completely incommensurate with one another.

It is possible, also, to argue that the formal structural systems of any organization must, necessarily, be accompanied by an informal set of systems (which may have subsystems) in order to carry out the tasks of the institution on a day-to-day basis while maintaining legitimacy of the organization as dictated by its environment. This argument seems to demonstrate the dialectical connectedness of human relations, political, and symbolic theories of organization to one another, as well as to contingency and systems theories. This, too, is in keeping with use of the trans-theoretical paradigm and the commensurability of organizational theories.

Summary of general organizational theory. What can be summarized about general theories of organization and studies of organization? Perhaps the following:

1. There are several well-recognized schools of organizational theory, but no general unified theory of organization.
2. The various general theories of organization appear more nearly commensurate than completely incommensurate.
3. Use of the trans-theoretic paradigm permits application of multiple organizational theories in studying organizations.
4. Classifications supported by empirical study are taxonomies.
5. General organization theory provides bases for development and use of classification schemes for organizations.
6. Few, if any, organizations are actually unique; therefore, it is feasible to develop useful classification schemes for organizations.
7. Structure is an important classification variable in study of organizations.
8. Both formal and informal structures are likely to co-exist and to interact in any organization.
9. It is necessary to account for both formal and informal structures in classifying organizations.

10. Members of the same class of organizations may vary in their internal formal and/or informal structuring.
11. Systems and bureaucratic organizational theories are overtly structural in nature.
12. Institutions of higher education (e.g., colleges and universities) are organizations.
13. Human relations, political, symbolic, and environmental organizational theories are not overtly concerned with structure in organizations, but imply structures.
14. Contingency theories of organization allow use of all other theories (support use of the trans-theoretic paradigm) and acknowledge both formal and informal organizational structures.
15. Formal organizational structure can be operationalized as the formal organizational chart.
16. Informal systems and their structures must exist and must exist separately from the formal systems and their structures in organizations.
17. Informal structures/systems are rational, adaptive organizational responses to needs unmet by the formal structures/systems. As such, they are natural systems.
18. Informal organizational structures cannot necessarily be inferred from the formal organizational chart.
19. Organizations as systems, along with their subsystems, may be thought of as open systems.
20. Systems and subsystems correspond to macro- and micro-systems.
21. Macro- and micro-systems can be identified.
22. Macro- and micro-systems substantially mirror one another.

23. A system, or subsystem, may be either lateral or vertical, or it may be both lateral and vertical.

Making the Connection between General Organizational Theory and Developmental Education

Given the foregoing understandings derived from the literature, it is evident that institutions of higher education are organizations. As a general class of organizations, they may be expected to be in correspondence with general organizational theories. Each of these institutions may be expected to have both formal and informal systems, identifiable by their boundaries and their structures, and general organizational theories should apply to these also. It is likely that many, if not all, formal subsystems and structures will have a corresponding informal subsystem and structure. One subsystem, or set of subsystems, within many, perhaps most, institutions of higher education is that concerned with developmental education. Developmental education systems are a subset of institutions of higher education. Institutions of higher education are a subset of organizations in general. Theories applying to organizations in general should apply to institutions of higher education and to their subsystems.

Few, if any, organizations are unique. Therefore, organizations may be classified into a discrete number of subsets. Classification theories and operationalized classification schemes for organizations in general exist. Structure is an important variable in some classification schemes. Institutions of higher education may be classified using the general classification theories applied to organizations in general, including use of structure as a classificatory variable. Developmental education subsystems within institutions of higher education should be capable of being classified according to structure. To fully identify the portions of the institution involved with developmental education, it is necessary to identify both the formal and the informal systems of developmental education and their structures.

Returning to the Research Questions and Hypotheses

The research questions stated in Chapter One are as follow:

1. Do programs of developmental education in postsecondary educational institutions in the United States assume different structural forms?
2. If so, can these forms be identified?

3. If these forms can be identified, can a reasonably limited set of structural models, or a typology of forms, be extracted from them?
4. Do developmental education programs form subsystems of the greater institutional organizational system?
5. If so, at what points do they articulate with other parts of the system?
6. Is this articulation patterned in some identifiable way(s)?
7. If so, can the pattern(s) be traced to identify an informal developmental education organization larger and more pervasive than the formal developmental education organization?
8. Are there distinctive patterns or relationships of informal organization that can be identified?

Based on the foregoing review of the literature, it seems apparent that these questions are reasonable ones in light of current understandings about the nature of organizations, of organizations of higher education, and of their subsystems involved in developmental education. They are, in part, answered by the extended review of the literature of organizational study in higher education and by the review of the literature of general organization theory and research. However, review of existing studies and theories does not provide full answers to all of the research questions. Therefore, further research is needed.

For the purposes of further guiding this study by clarifying its aims, the unanswered research questions might be restated as the following hypotheses:

1. Programs of developmental education in postsecondary educational institutions in the United States assume differing and distinctive formal and informal organizational patterns
2. These formal and informal organizational patterns can be identified as a set of structural models, or a taxonomy, derived from examination of institutional self-studies.

To explore the organizational structures of developmental education in colleges and universities as hypothesized above, an extensive study of institutions of higher education is required; it is the purpose of this study to attempt that task. Institutional self-studies submitted to the six regional accrediting agencies for the

purposes of full accreditation or reaccreditation visits have been selected as a source of appropriate data for this study. The following chapter details the reasoning behind that choice, the manner in which access to institutional self-studies was acquired, the methods used in identifying and extracting the data of interest, and the analytical methodologies used to examine that data. Chapter IV then describes and discusses the results of the process and Chapter V examines the implications of the findings.

CHAPTER III

METHODS AND PROCEDURES

Overview

In the absence of evidence from the literature of developmental education of a structural typology for the organization of developmental education programs, it is the principal purpose of this study to explore whether such programs do, in fact, take identifiably different organizational structures. If so, work toward development of a structural typology or taxonomy of the formal structures is an aim of the study. It may be assumed, from review of the literature of general organizational theory, that any formal organizations of developmental education found should have accompanying informal organizations. Therefore, a further aim of this study is to test that assumption by examining the data for evidence of an informal organization associated with each formal organization involved in developmental education and to attempt to construct models of these.

The design of this study is exploratory and descriptive in nature and relies upon documentary analysis as the primary source of data. The study is intended to explore portions of the organizational structures of selected two- and four-year postsecondary institutions of higher education in the United States, to identify those portions involved in providing developmental educational services, to attempt identification of the formal and informal organizations involved in provision of developmental services within the larger structure of the institution, and to explore whether a limited set of structural types or models of the formal and informal organizations providing developmental education can be derived from this exploration.

The methods and procedures described in the balance of this chapter are those used to carry out this exploration and description. The tasks involved included identification of the population of organizations to be studied and identification of the specific sample of organizations to be studied. Further, the sorts of information to be gathered for this exploration and description had to be clarified. Having identified, at least in a general way, the organizations to be studied and the sorts of information that might be needed, the next task

was to identify sources that might be used to obtain the information of interest about the organizations and to decide which of these was most likely to provide the information desired. This step was followed by obtaining access to the information of interest, collecting and organizing data, and planning and carrying out the analysis of the data.

Population and sampling

Postsecondary education in the United States consists of a widely-varied and numerous set of organizations. According to the U.S. Department of Education, there may be as many as 9,983 postsecondary institutions in the fifty states and the District of Columbia (National Center for Education Statistics, 1992). In another U.S. Department of Education report (National Center for Education Statistics, 1993), the total number of institutions of higher education in the United States as of the 1992-93 academic year is given as 6,961. While considerably less than the first number, 6,961 is still a substantial quantity.

Although it might be useful to study every postsecondary institution in the United States for evidence of formal and informal structures associated with developmental education, for the purposes of this study some limitations are placed on the total number of institutions of interest in the population. Keeping in mind concerns about the actual representativeness of The National Study of Developmental Education (the "Exxon" Study) as discussed in Chapter II, one concern in selecting institutions for inclusion in this study is availability of benchmarks against which representativeness could be examined. While the study is exploratory and somewhat qualitative in nature, description is also a concern. Therefore, being able to describe whether the institutions included are or are not representative of the population of all postsecondary educational institutions seems important.

Because there was no information available to indicate whether regional mimetic isomorphism, as discussed in Chapter II, has led to geographical differentiation, broad geographical representation is sought. So, the study is conceived of as a national study. Benchmarks chosen, then, need to be applicable to the national population of organizations engaged in postsecondary education, as well as allowing for more localized geographic comparison.

In reflecting broadly on the wide range of postsecondary educational organizations on the national scene, and in attempting to use widely available, well-recognized, and respected benchmarks, the author recognizes two that appear to serve her purposes, given certain understandings about selecting a subset of interest from the entire population of postsecondary institutions: She is not interested, at this time, in the set of non-accredited, highly-specialized, non-degree granting, often proprietary, institutions such as barber colleges, truck-driving schools, secretarial colleges, etc. Furthermore, she is not interested, at this time, in specialized, degree-granting postsecondary institutions (e.g., seminaries, free-standing schools of nursing or other professional schools, art institutes) or institutions that do not offer undergraduate education leading to an Associate or Bachelor's degree.

This set of understandings makes it manifest that the institutions of interest could be described in terms of Carnegie classifications. All institutions classified under "Specialized" in [A Classification of Institutions of Higher Education: 1994 Edition](#) (Carnegie Foundation for the Advancement of Teaching, 1994) fall into the subset of institutions not of interest at this time. The classification index in this volume, which is alphabetized by name of institution, is a comprehensive listing of postsecondary institutions that also provides the Carnegie classification of each. Consultation of this index makes it possible to immediately identify any postsecondary institution that is classified under "Specialized" and, therefore, not included in this study. Use of Carnegie classification as a benchmark also provides for the possibility of comparing the institutions actually included in this study with all institutions in the United States by Carnegie classification as a check on representativeness by institutional type.

Thinking about the institutions of interest in this way leads the author to another source for comparison used in this study: accreditation by one of the six regional accrediting agencies--the North Central, the Western, the Northwest, the Middle States, the Southern, and the New England associations of schools and colleges. Reasoning that most, if not all, postsecondary institutions of interest are likely to be accredited by one of the six regional accrediting agencies and few, if any, of interest are likely to be unaccredited, limiting the study to regionally-accredited institutions permits ready comparison of both number and type of institution included in the study by widely-understood geographical region. Furthermore, if mimetic isomorphism has

occurred, then use of accrediting regions as a source for grouping and comparison within region and contrast across regions may be one way of identifying it.

Conceived in these ways, the population of interest for this study is then limited to those institutions accredited by one of the six regional accrediting agencies, that fall into any Carnegie classification outside "Specialized," and that offer undergraduate education leading to an Associate or Bachelor's degree. A number for this population is obtained by using the "Universe of Institutions by Carnegie Classification, 1994" (Carnegie Foundation, 1994, p. x). The universe of institutions is given as numbering 3,595, among which 722 are Specialized Institutions. The balance of 2,873 is the total number of institutions of interest for this study.

This is still a substantial number. Consideration of methods for obtaining the information of interest further helped in delimiting the sample, as discussed below. The goal in delimiting the sample was to arrive at a number of institutions that was both manageable and large enough to allow certain statistical analyses. While it was hoped that the resulting sample would also be representative by Carnegie type and geographically, both nationally and regionally, there were no *a priori* guarantees that would be the case.

Sources of Data and Methods Used to Collect Data

Several approaches might be used to seek information about the formal and informal organizational structures of developmental education programs in higher education. Intensive on-site case studies or observational studies might be conducted. Mail or telephone survey research might be carried out. A series of interviews or focus groups might be conducted. Each of these was rejected after consideration.

Case or observational studies typically require long periods of time and interaction at each site before the researcher begins to have insight into the internal workings of the organization under study. This severely limits the number of organizations included in any one study or greatly increases the time and resources that must be expended. In the case of this study, the author is interested in collecting data from a "large" number of institutions. Collection of data from a large number of institutions via the case or observational study method might well require an inordinate amount of time and resources. Furthermore, in order to do particular forms of statistical analysis and to avoid problems in making comparisons, she preferred that the substantial quantity of data necessary be roughly contemporaneous in origin, something not possible if she engaged in a large number

of extensive and serial case studies through personal observation. For these reasons, case or observational studies were eliminated as sources of information.

Survey research, in contrast, has the advantages of being a fairly rapid and somewhat less expensive method for collecting information. However, as indicated in the previous chapter, there has been little exploration of the structure(s) of developmental education and there are no valid and reliable, readily-accepted or readily-accessible survey instruments available for the purpose. When admonitions in the research literature against using nonvalidated survey instruments and the difficulty of constructing good instruments *de novo* are coupled with the evidence of low rates of return and lack of usable data that even such noted researchers as Roueche et al. experienced (as discussed in Chapter II), this approach appears unlikely to yield the sort of evidence needed. Survey research of this sort appears especially unlikely to yield evidence of phenomena, such as the informal organization, generally-unrecognized by respondents. Thus, it was eliminated as a principal method of data collection for this study.

Interviews and focus groups can be fruitful sources of insightful information, or not. Although the interviewer may prepare for a strongly focussed interview, it is nevertheless virtually impossible to force the interviewee(s) to stick to the planned interview or to get into sensitive issues if they choose not to do so. Confirming that the person(s) who provide information are both knowledgeable and honest in their comments may be difficult. This process can be highly time-consuming and expensive, while yielding little substantive information. Therefore, it was not considered as a principal method, either.

The method finally selected emerged from the reflection on the characteristics of the population and sample previously discussed in this chapter. Use of membership in the regional accrediting agencies as a benchmark for geographic and Carnegie type distribution taken with the Carnegie national population figures suggested the use of institutional self-studies prepared for full accreditation or reaccreditation visits as a source of data. There are several advantages to the use of institutional self-studies as a source of data:

1. Every institution of interest is likely to have completed a full institutional self-study within the last decade.
2. Institutional self-studies frequently contain organizational charts.

3. Very substantial amounts of information about the organization, practices, policies, finances, problems, students, faculty, staff, and administration of institutions are presented in their institutional self-studies, as well as pertinent information about the environment in which the institution operates and its constituencies. This information is typically collected and available in a volume, or volumes, designed to be readily accessible to the reader.
4. Collection of institutional self-studies by the six regional accrediting agencies means that information about the institutions of interest in this study might be located in a limited number of places, rather than having to be laboriously collected from a multitude of sites on each individual college or university campus provided access could even be gained to individual on-campus sites.
5. Identifying the offices and officials at the accrediting associations and negotiating access to their collections seem more manageable tasks than doing so with thousands, or even hundreds, of individual colleges and universities.

All in all, use of institutional self-studies as a documentary source of the data appears to have the advantages of relative currency of information; the ability to determine representativeness of the sample by Carnegie type and region, as well as national distribution; and economy of time and resources used in data collection.

Obtaining Access to Institutional Self-Studies

To explore the possibilities of using institutional self-studies collected by the six regional accrediting associations as a source of data, a series of telephone, mail, and fax contacts and on-site discussions were carried out with representatives of the regional accrediting associations responsible for higher education. Continued over a period of nearly a year (summer, 1994, through spring, 1995), each of these involved describing the study, the researcher's qualifications and affiliation, how self-studies were to be used, how data derived from them was to be used, and how the confidentiality of individual institutions, offices, programs, and persons were to be maintained. Because each of the regional accrediting associations is structured and operates slightly differently from any of the others, while these general topics were addressed with representatives of each, negotiations were handled slightly differently with each association in order to meet concerns specific to

each. An early phase of these negotiations involved a request for a membership directory and accreditation guidelines for postsecondary institutions from each association, which each fulfilled.

The Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools (hereafter, NCA) was the first to grant access to the individual self-studies of its member institutions. The author was given permission to visit the Commission's offices in Chicago for the purpose of reading individual self-studies, taking notes from their narratives and copying organizational charts on her notebook computer. She was provided with a place to work in reading and using her computer, provided access to the areas where self-studies are stored, and given as much time as she needed in working through the Commission's collection of self-studies, as well as the help of the Commission's staff as needed to locate materials of interest. In return, she was required to maintain the confidentiality of individual self-studies, to obtain and replace materials in a timely and accurate manner, to avoid materials in individual institutional files other than self-studies, and to provide a summary of findings upon completion of the study.

During the course of the discussions about access with representatives of the six associations, the final factor limiting the sample to be used for this study was determined: although more complete collections were maintained by other associations, NCA could not provide complete collections of self-studies prepared prior to 1992. Therefore, the author determined to use a purposive sample of institutional self-studies. This sample was to be composed of self-studies completed for full site visits for accreditation/ reaccreditation in the academic years 1992-93 or 1993-94, the most recent academic year for which site visits and processing of self-studies had been completed at the time this study was begun.

Virtually identical arrangements as made with NCA were made to work on-site at the offices of the Commission on Colleges of the Northwest Association of Schools and Colleges in Seattle, as well as the offices of the Accrediting Commission for Senior Colleges and Universities and the offices of the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges, Inc., in their respective offices located in Oakland and Aptos, California. Similar arrangements were made for access to self-studies stored by the New England Association of Schools and Colleges (hereafter, NEA) near their offices in Bedford, MA. The only significant difference distinguishing the work at the Western and Northwest

Commissions' offices from that at NCA and NEA was that the researcher was not allowed to obtain and reshelve materials herself. (Various association staff members performed these tasks in those locations.)

While the methods used in collecting data from institutional self-studies was identical in all six accrediting regions, the access requirements of the Middle States, and Southern associations varied somewhat from those described above, although the above descriptions of the activities required to gain access to self-studies were the first steps taken with all six associations. The Commission on Higher Education of the Middle States Association of Colleges and Schools (hereafter, MSA) required individual approval of the researcher's access by each institution completing a self-study for a site visit during academic years 1992-93 or 1993-94 prior to allowing the researcher access to that institution's self-study in the archival facility used by the association for their storage. Following a period of discussion, it was agreed that the researcher would provide a mailing to each institution of interest (identified through the MSA's 1994 membership directory) requesting this approval. Each packet, mailed to the chief executive officer indicated in the directory, included a cover letter from the researcher, a copy of a letter from the MSA Director of the Commission on Higher Education approving the project pending institutional approval, a copy of a letter from the Institutional Review Board of Loyola University Chicago noting the research poses no risk to human subjects, and two pre-printed, postage-paid response cards. These cards, one pre-addressed to the Director of the Commission and one pre-addressed to the researcher, allowed an authorized representative from each institution to indicate whether s/he did or did not give the approval sought. (Copies of the contents of this mailing, among the other documents used in obtaining permission/access to use the various institutional self-studies are included in Appendix D.)

Because arrangements could not be made with the Southern Association of Schools and Colleges (hereafter, SACS) to use self-studies in their offices in a timely manner, self-studies from SACS member institutions were obtained directly from colleges and universities. This was accomplished through a mailing from the researcher to the chief executive officer in each of the institutions identified through the SACS membership directory as likely to have completed self-studies for the target years. This mailing explained the study, provided assurances of confidentiality, agreed to return or destroy self-studies after using them if so

directed, and offered summaries of findings to those providing self-studies. (Copies of the contents of this mailing are available in Appendix D.)

Further Limitations on the Sample

In five of the six regions, less than 100 percent of all self-studies prepared for site visits in academic years 1992-93 or 1993-94 was available, for a number of reasons. In both SACS and MSA, where access to self-studies had to be approved on an institution-by-institution basis, some member institutions of interest simply refused to allow access. A very small number of self-studies was not included because the member institutions that prepared them were contesting the accrediting team and accreditation association's findings regarding new or continuing accreditation for the institutions. In instances where these contested accreditations had not been resolved, the author agreed to avoid their self-study materials at the request of representatives of the accrediting agencies, who cited the possibility for increased sensitivity on the part of these member institutions. A portion of the self-studies of interest was unavailable because the accrediting agencies were working with them for other purposes. Some self-studies had missing parts, usually in multi-volume self-studies. These, too, were omitted from this study.

Finally, it is difficult to avoid accidental misfiling or misshelving when handling large quantities of printed materials in any instance. Of the six locations at which site visits were conducted for the purpose of examining self-studies, at only the Northwest association's offices could all self-studies of interest be located during the time of the visit. While the author doubts that most of the unlocated materials have actually been permanently lost, it was impossible to search every file and every storage box in an effort to locate the missing self-studies in the time available, had the association staffs permitted such an intrusion into their materials.

It should be reiterated that the final sample of self-studies used for this project was a purposive sample. For the reasons noted immediately above, every self-study prepared for site visits during the targeted academic years was not available for inclusion in this study and it was not immediately evident whether any systematic bias could be identified among the self-studies that were not available. Furthermore, the methods used by the six regional accrediting agencies to determine the date(s) of accreditation/reaccreditation site visits leaves open the possibility of systematic bias.

In all six associations, site visits are generally scheduled during the tenth anniversary year of the last full visit. However, the author was told confidentially by staff members at some of the associations that, occasionally, visits were shifted by one year in order to even out the association staff's work load. Both the anniversary method and the occasional practice of shifting the visit by one year offer the possibility of bias for this study. That is, use of the anniversary method doesn't necessarily distribute institutions evenly across every academic year of the ten-year accrediting cycle by Carnegie type or by geographic location if there were any initial tendencies toward specific groups entering the accrediting cycle in the same year. Furthermore, the "shifting" noted above offers the possibility of changes in random distribution if the institutions shifted tend to be in specific categories (e.g., avoiding too many large and complex institutions undergoing the accreditation/reaccreditation process at the same time).

Data Collection and Treatment

Institutional self-studies generally include careful description of institutional mission, organization, and services provided to students; therefore, examination of a sample of these documents should reveal the presence of developmental programs, much about their structure and role, and their articulation with the greater institutional organization in support of institutional mission and function within the institution, as well as have potential for identifying association of particular programmatic models with institutional characteristics.

For the purposes of this study, each individual self-study was counted as one case, even when the institution preparing the self-study might actually have several campus locations. If the multiple-campus institution had a central governance and was accredited as one institution, it seemed best to treat it as one case. However, in no instance was a system of regional, but separately accredited, institutions treated as one case. For example, had the University of Texas at Austin, the University of Texas-Arlington, the University of Texas-San Antonio, the University of Texas-Brownsville, the University of Texas-Pan American, the University of Texas-Dallas, the University of Texas-Tyler, the University of Texas-Permian Basin, and the University of Texas-El Paso been included in this study, each would have been treated as a separate case, rather than jointly as the University of Texas System.

This method of identifying cases, taken with the method of identifying the sample and limitations on the sample, yielded a final total of 313 cases. By region, there were 98 cases from North Central, 43 from the Association, 15 from the Northwestern, 49 from Middle States, 84 from the Southern, and 24 from the New England accrediting associations.

Collection of data essentially consisted of closely reading self-studies, taking extensive field notes as direct quotes from the self-studies and copying organizational charts where provided in self-studies, or developing organizational charts from the narrative, if possible, in the absence of prepared organizational charts. Field notes and organizational charts were typed directly onto computer disks, eliminating the necessity for later transcription and the possibility of transcription errors and facilitating both preparation of hard copies of notes and computerized searching of the more than 3,500 pages of field notes. At points where the researcher felt it necessary to add comments to either clarify the quoted material or to make notes to herself about the research process, these were set off from the quoted material by opening and closing brackets in every case in order to preserve the integrity of the quoted material. As a way of further providing an audit trail, self-study page numbering was associated with all quoted text. A lengthy list of descriptors generated from the literature and from practical experience, and added to as regional terms were identified in the self-studies, was used to guide exploration of the narratives for both the formal and informal organizational structures (See Appendix E for list of descriptors.)

Furthermore, close attention was paid to mission statements and statements of philosophy prior to reading the balance of each self-study, as these often provided guides as to institutional recognition of and commitment to developmental education as defined for this study. Although each self-study was read through in its entirety (including appendixes and supporting documents where included), the table of contents, tables of tables and figures, and tables of appendixes were also consulted prior to beginning each self-study as a way of establishing the organization of material in each and notes made as to sections that might prove to be especially pertinent. Finally, each institution was checked in the Carnegie directory in order to definitely establish that it was among the classifications to be included in this study.

In most instances, the formal organizational structure as represented by the organizational chart was readily identifiable in self-studies. In some instances, no organizational charts were included and, so, the formal organization had to be reconstructed from the narrative descriptions. If the primary location of developmental education could not be identified from the organizational chart(s), the narrative was closely examined for evidence, with general agreement from different parts of the self-study about a particular location being "The" formal structure engaged in developmental education accepted as convergence. When convergence could not be clearly identified, the author was careful to avoid forcing the issue and noted that the formal organizational structure could not be identified.

WordPerfect, TopDown, and Statistical Package for the Social Sciences Plus (hereafter, SPSS+) were used to take field notes, log and organize information about developmental programs' formal and informal organizational structures, place them in the overall organizational structure of the institution, and sketch their articulation. These data were coded, organized into a database, and appropriate statistical analyses performed.

Pilot Study

A brief pilot study was conducted as a check on the viability of this process before undertaking the principal data collection activities associated with this study. Using NCA self-studies completed during the 1991-92 academic year, a total of five were examined using the proposed methodology to see if the information of interest could be identified and extracted. Self-studies were selected to approximate roughly the complexity of institutions of interest, including two from community colleges, two from Master's I institutions, and one from a Doctoral I institution. While this sample was too small to permit testing all types of statistical analysis planned for the study, the process of collecting and organizing information from institutional self-studies proved to be very successful in this pilot study. It was immediately obvious that abundant information could be extracted from self-studies on the matters of interest and that material could be readily classified and maintained as alphanumeric data. Examples of the computerized data collection template and data reduction sheets used in this process are included as Appendix F.

Data-Collection

Having concluded the pilot study satisfactorily, data collection began in earnest. Site visits were made to the offices of the Western Commissions for Colleges and Universities and Community and Junior Colleges during the weeks of October 31 through November 4, 1994, and November 7 through November 11, 1994, respectively, for the purpose of collecting information from self-studies. The period November 28 through December 6, 1994, was spent in Seattle at the office of the Northwest Commission engaged in examining the self-studies of interest in that association. The self-studies of interest from MSA are stored in a professionally-administered, commercial archival facility near Allentown, PA. March 5 through March 18, 1995, were spent at this facility collecting data from self-studies stored there. Two weeks in mid-May 1995 were spent in Bedford, MA, engaged in study of the NEA self-studies of interest. Because the offices of the NCA are located in the author's home area, and because the North Central is the largest of the regional accrediting agencies and thus has many more self-studies to be examined for the targeted academic years, work with these self-studies was fitted around visits to the other regional accrediting agency locations throughout the 1994-95 academic year.

Delays in completing arrangements with SACS made it necessary to make other arrangements to obtain copies of self-studies from its member institutions, as previously noted. The mailing to the member institutions of interest for this study was completed in early June, 1995. Although the bulk of responses was received by the end of July, 1995, some institutions did not address the request until school resumed in the fall of 1995. Thus, copies of self-studies from SACS institutions were received as late as mid-October 1995. Examination of SACS member institutions' self-studies and collection of data from them continued over the period from mid-June to mid-November 1995.

By the end of November 1995 a total of more than 3,500 pages of field notes composed of typed, single-spaced text and organizational charts had been collected from the self-studies of interest in all six accrediting associations. Reducing and coding these notes required an additional two months, largely concluding by January 1996. The coding system itself was emergent from the data, as it was not possible to

predict exactly what forms of developmental interventions would occur or where they would occur prior to their collection.

Statistical and Analytical Treatment

The narrative data collected for the complete study, as described previously, are nominal or interval in nature. Therefore, they are amenable to simple numerical coding and maintenance in a SPSS+ database. These have been analyzed using SPSS+ to perform simple descriptive analyses, correlations, and factor analysis.

However, because the narrative data were collected as direct quotes from individual self-studies they retain some of the textual qualities of their sources. As text, these data were amenable to limited content analysis of more qualitative nature. The researcher read each of the original self-studies at least once in its entirety, typing quotations from each as she read. She reread each set of notes within 24 hours in order to correct typing errors and to do initial informal analysis for the purpose of guiding further data collection. During both original collection of data and in this re-reading, she added bracketed and initialled commentary on data of interest or notable omissions in the text.

During the data reduction phase, each set of field notes was reviewed six more times. The researcher simply read all the notes one more time as a means of seeing the data as a collective, rather than individual cases. With this broader perspective in mind, she then read every case straight through again, once more adding bracketed and initialled notation, queries, and commentary on what she found as well as on what was not to be found. In making these notes, she took care to note the exceptional, general themes that seemed to run through the data, contradictions, unanticipated data, and unmet expectations. Because the data consisted of quotes from the original self-studies, it was also possible to begin to identify associations among themes, tendencies for certain words and phrases to be associated in text, and to gain a sense of "tone" or "voice" in the text.

Following this, data were reduced for numerical coding. This process required at least two passes through the data and cases. During the first pass, each case was read again and summarized as text on the Developmental Intervention Types form (see Appendix F for example of form). On the second pass, this data was further summarized as text on the Location by Function Matrix (see Appendix F for sample form) with reference to the data.

Finally, this sheet was summarized as numerical coding in SPSS+. In the process of numerical coding of data and in cleaning that coded data, anomalies or apparent anomalies in the numerical coding caused the researcher to return to the narrative and numerical data in individual cases as a check on accuracy. Finally, preliminary statistical analysis revealed trends that inspired yet another revisiting of the narratives for the purpose of reading and analysis. It might be said, in this process, the researcher served as the instrument; her reading; rereading, and statistical analysis of the text as the data collection process; and her reflection on the content as a method of analysis.

The formal organizational charts, collected through TopDown flowcharting software, are represented as symbolic representations of the organizational charts with labels and notes. These have been inspected for evidence that identifies and locates the formal organizational structure of developmental education programs and a color-coding system was employed to distinguish formal and informal organizational structures on organizational charts that appear to be involved with developmental education. That evidence has been reduced to numerical coding and maintained as part of the SPSS+ database.

Various techniques and processes have been used in arriving at the findings reported in this document. The literature review has served as a source for documenting developmental education, its participants, and its interventions historically. Contemporary developmental education research and theory, as reported in the literature of developmental education, have added another set of perspectives on the theory and practice of developmental education in American postsecondary education. Review of the literature of higher education and general organizational theory permits additional perspectives to be taken with respect to developmental education in organizations of higher education.

Finally, three approaches to interpreting the data allow for the possibility of different understandings or complementary interpretation of the data to further enrich the picture. Collection and inspection of organizational charts is one method for identifying or attempting to identify the formal and/or informal organizational structures of developmental education organizations, or subsystems, within institutions of higher education. Numerical coding of nominal and interval data permits statistical analysis. Finally, preservation of data as direct quotations allows of limited content analysis of a more qualitative nature.

The results of these processes are reported and analyzed in the next chapter. Findings, conclusions, implications, and recommendations for further research in this area conclude this work in Chapter V.

CHAPTER IV

RESULTS AND DISCUSSION

This chapter presents the methods used to analyze the data and the results of analyses. Additionally, information is provided to assist in interpreting those results. Description and discussion are provided as appropriate, with conclusions and recommendations to follow in Chapter V.

Distribution of Cases

A total of 313 cases was studied. These cases represent a nationwide purposive sample of non-specialized, associate and baccalaureate degree-granting postsecondary educational institutions. Because of the nature of the sample, no *a priori* assumptions were made of its representativeness of non-specialized, associate and baccalaureate degree-granting postsecondary institutions in the United States as a whole, or of those in any of the six regional accrediting agencies' memberships. Nevertheless, it may be useful to assess the sample's similarity to both national and regional populations on the basis of geographic distribution and by Carnegie type.

As noted in Chapter III, there are, nationwide, a total of 722 institutions classified by the Carnegie Foundation for the Advancement of Teaching as being "specialized" (Carnegie Foundation for the Advancement of Teaching, 1994), and thus not of interest in this study. The balance of institutions, constituting the population of interest according to the Carnegie Foundation figures, totals no more than 2,873 institutions of higher education in the United States. The 313 institutions whose self-studies were used as the sources of data in this study represent nearly eleven percent of this total.

By region, there are 98 cases from North Central, 43 from the Western, 15 from the Northwestern, 49 from Middle States, 84 from the Southern, and 24 from the New England accrediting associations, for the total of 313. (See Appendix G for map of regions and states within them.) Turning first to the North Central Association's member institutions, the association totals its postsecondary member institutions at 948 as of

Spring 1993 (Gose & Thrash, 1993). Analysis of a typology of member institutions prepared by NCA staff in December, 1994 (unpublished document), suggests that 123 of the postsecondary member institutions fall within the Carnegie category "specialized", leaving a balance of 825 NCA member institutions potentially of interest to this study. Of those 825, 98 --or nearly twelve percent--are included in this study.

The Western Association's 2- and 4-year member institutions falling outside the "specialized" classification total 206 (Western Association of Schools and Colleges, Inc., 1993). Within the subset of this total preparing self-studies for accreditation/ reaccreditation in academic years 1992-93 or 1993-94, 43 are available and included in this study. Forty-three postsecondary institutions comprise nearly 21 percent of all non-specialized postsecondary institutions accredited by the Western Association.

Elimination of specialized postsecondary institutions from the total number of those accredited by the Northwest Association leaves a total of 122 (Commission on Colleges, 1994). Fifteen, or just over twelve percent of these, prepared self-studies for accreditation/reaccreditation visits during academic years 1992-93 or 1993-94 and are available for examination. All fifteen of these are included in this study.

Representation of the Middle States Association is a bit more complex because of the manner in which access had to be obtained to review institutional self-studies and because this region accredits postsecondary institutions in Puerto Rico and Panama in addition to those located in the states of New York, New Jersey, Pennsylvania, Delaware, Maryland, and the District of Columbia. Institutional self-studies from Puerto Rico and Panama are sometimes submitted in Spanish. There are 43 accredited institutions in Puerto Rico and Panama, of which 18 prepared self-studies for site visits during academic years 1992-93 or 1993 (Commission on Higher Education, 1994). Because of the difficulty in ensuring accurate translations, these were omitted from the study, along with specialized institutions.

When specialized postsecondary institutions and those in Panama and Puerto Rico are removed from consideration, the total number of postsecondary institutions in this accreditation region is 366 (Commission on Higher Education, 1994). Of these, 142 submitted self-studies for the targeted academic years and were mailed information requesting permission to review their self-studies in the commercial archive where they are stored. While about 72 percent of the institutions responded to the mailed request for permission to access self-studies,

only 49 self-studies among the affirmative responses were located in the archive. This total represents just over 13 percent of all institutions in the Middle States Association.

According to the Southern Association of Colleges and Schools' Commission on Colleges (Southern Association of Colleges and Schools, 1994), there are 777 institutions in the United States and Mexico accredited by SACS. Sixty-four of these are specialized institutions, leaving a balance of 713. The difficulty in establishing exactly how many SACS institutions fall into the target years, however, lies in the information provided by the accrediting agency, as its membership directory (Southern Association of Colleges and Schools, 1994) lists dates by calendar year rather than by academic year.

Logic suggests that about half of all institutions listed as having accreditation/ reaccreditation site visits in either 1992 or 1994 fall outside the academic years of interest (i.e., they fall either into the spring of academic year 1991-92 or the fall of academic year 1994-95). Therefore, it is impossible to identify by simple inspection which of the 237 institutions listed in the membership directory as having undergone site visits during those years actually fell into the academic years of interest. Logically, about one-third of the total of 237, or 79, institutions are likely to fall outside the parameters. This leaves a target total of about 158 southern colleges and universities.

In fact, 85 SACS 2- and 4-year institutions of postsecondary education responded to the researcher's request by sending their self-studies in support of this research project and 84 were complete and included in the study. This represents about 54 percent of the 158 colleges and universities contacted with that request and almost twelve percent of all SACS institutions.

There are 38 specialized postsecondary institutions accredited by the New England Association (New England Association of Schools and Colleges, 1994), out of a total of 197 accredited colleges and universities (Commission on Institutions of Higher Education, 1994). Thirty-five of the balance of 159 prepared self-studies for accreditation/ reaccreditation visits for the targeted academic years. Of these 35, 24 self-studies are available and complete. These are included in this study and represent about 15 percent of all accredited, non-specialized, Associate and Bachelor degree-granting institutions in the New England Association. These findings for all six regions are summarized in Table 7.

Table 7 --Carnegie and Regional Populations, Sample and Subsamples Totals, and Percentages Samples and Subsamples Represent of Populations

Region	Total Non-Specialized Postsecondary Institutions	Total Cases in Study	% of Non-Specialized Postsecondary Institutions
North Central	825	98	12%
Western	206	43	21
North West	122	15	12
Middle	366	49	13
Southern	713	84	12
New England	159	24	15
Carnegie Population Total	2873*	313	11

*The Carnegie Total does not equal the sum of the regional totals because of differences in classification systems used by some regional accrediting agencies. However, each of the cases in the study has been checked against the Carnegie guide for classification, A Classification of Institutions of Higher Education, 1994 Edition, as being qualified for inclusion in this study.

Subsamples consisting of the Western and New England associations' institutions include larger proportions of those associations' total memberships than is true of the other regions and, thus, they are somewhat overrepresented in the total sample. However, the percentage of institutions sampled from each of the other four are similar to one another. They also are very similar to the percentage of the national total sampled.

Distribution by Carnegie Classification

With regard to Carnegie classification, the data are summarized in Table 8, with the Carnegie national population used as a benchmark for comparing the sample as a whole, as well as each of the regional subsets of the sample with the national distribution of postsecondary institutions by Carnegie classification. While not identical to the national distribution of institutions by Carnegie classification, as reported in the 1994 edition of A Classification of Institutions of Higher Education (Carnegie Foundation for the Advancement of Teaching, 1994), the distribution by Carnegie classification within the total sample is remarkably close to the national

distribution. However, the individual regional distributions by Carnegie classification are not congruent with the Carnegie national population's distribution. This suggests the possibility that distribution of Carnegie types varies by region. Table 9 displays a summary of the regional populations and the regional samples with more fine-grained comparisons of accuracy of representation of regional distributions of Carnegie types.

Using A Classification of Institutions of Higher Education, 1994 Edition (Carnegie Foundation for the Advancement of Teaching, 1994) as the source of information, the total number of associate and baccalaureate degree-granting, non-specialized institutions were tabulated by Carnegie type for each of the six accrediting regions, as indicated in Table 9. Inspection of this table indicates that distribution of institutions by Carnegie type differs across the six regions. Therefore, the variation in distribution among regions and between regional subsamples and the total sample may be a reflection of these regional differences in institutional distribution by Carnegie type.

Further examination of distribution by Carnegie type, as presented in Table 9, indicates that no region's Carnegie distribution is perfectly represented by its subsample of institutions in this study. Given the nature of purposive sampling, however, the representativeness of the distributions of institutions by Carnegie types is remarkably close to population totals in the North Central, Middle States, and Western Associations, with the exception of the absence of Research I institutions in the Western Association subsample. Two-year and Research I institutions are considerably overrepresented and Baccalaureate, Master's and Research I institutions are underrepresented in the North Western subsample as compared to their respective population of postsecondary institutions of interest. Among the colleges and universities belonging to the New England association, Master's I institutions are overrepresented and no examples from Doctoral or Research institutions are included in the sample. Subsample distribution in the Southern association substantially overemphasizes Master's II and Research universities while underrepresenting Baccalaureate and Doctoral institutions.

Formal Organizational Structures

The structures identified as the formal organizational sites responsible for developmental education in the complete sample, as well as for the regional subsets of that sample, are presented in Table 10. It is evident that the formal structure can be identified in most cases and that in the overwhelming majority of instances,

Table 8--Carnegie Population, Total Sample, and Regional Subsamples by Carnegie Classification

	Carnegie Population		Entire Sample		North Central Subsample		Western Subsample		North Western Subsample		Middle Subsample		Southern Subsample		New England Subsample	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
All Cases	2,873	100% ^a	313	100% ^a	98	100% ^a	43	100% ^a	15	100% ^a	49	100% ^a	84	100% ^a	24	100% ^a
Associate	1471	51	148	47	46	47	26	60	10	67	15	31	42	50	9	38
Bacc. II	471	16	45	14	18	18	2	5	2	13	10	20	8	10	5	21
Bacc. I	166	6	13	4	4	4	3	7	0	0	3	6	1	1	2	8
Master II	94	3	12	4	2	2	1	2	1	7	2	4	5	6	1	4
Master I	435	15	62	20	16	16	8	19	1	7	14	29	16	19	0	0
Doc. II	60	2	7	2	3	3	2	5	0	0	1	2	1	1	0	0
Doc. I	51	2	3	1	2	2	0	0	0	0	0	0	1	1	0	0
Research II	37	1	10	3	3	3	1	<1	0	0	2	4	4	5	0	0
Research I	88	3	13	4	4	4	0	0	1	7	2	4	6	7	0	0

^aRepresents 100% of the column. Column totals may not equal 100% due to rounding.

Table 9--Comparisons of Regional Institutional Populations* and Regional Samples* by Carnegie Classification

	North Central		West		North West		Middle		South		New England	
	Pop. Sample % %		Pop. Sample % %		Pop. Sample % %		Pop. Sample % %		Pop. Sample % %		Pop. Sample % %	
Associate	41%	47%	61%	61%	42%	67%	31%	31%	45%	50%	36%	37%
Bacc. II	24	18	7	5	20	13	18	20	21	9	19	21
Bacc. I	7	4	5	7	2	0	10	6	5	1	12	8
Master II	4	2	2	2	9	7	4	4	3	6	3	4
Master I	15	16	13	19	11	0	24	29	18	19	20	29
Doc. II	2	3	4	5	8	0	3	2	2	1	3	0
Doc. I	3	2	<1	0	0	0	3	0	2	1	1	0
Res. II	1	3	1	2	2	0	1	4	1	5	2	0
Res. I	3	4	6	0	2	7	5	4	2	7	4	0

*Column totals may not equal 100% due to rounding.

this structure is either a free-standing division within the institution tasked with service to developmental students (32 percent of cases) or a separate department having such responsibilities organizationally located within a larger division tasked with other responsibilities as well (45 percent of cases.) Just over 11 percent of all formal organizational structures dealing with developmental education and academic support services are decentralized and distributed throughout the organizational structure. The formal structure responsible for developmental education is the English Department, the library, the continuing or adult education division, a school of education, or the freshman seminar in less than 2 percent of all institutions, aggregated as "other" in

Table 10.

Table 10--Formal Structures Providing Developmental Education and Support, by Percentage* for Total Sample and Regional Subsamples

	Separate Division	Separate Department	Decentralized Structure	Other Formal Structure	Unknown Formal Structure
All Cases	32%	45%	11%	2%	9%
North Central	33	53	7	3	4
Western	19	46	21	0	14
North West	27	40	13	7	13
Middle	35	49	6	4	6
South	36	32	18	1	13
New England	42	50	0	0	8

*Row totals may not equal 100% due to rounding.

The formal organizational structure associated with developmental education is not identifiable from self-study information in about 9 percent of the institutions' studies. The fact that it has not been identified does not necessarily indicate that developmental education does not occur in these institutions. In the data collected from institutional self-studies there is only one institution--a very small liberal arts college in the South--that appears to do no developmental education or provide no support services to students whatsoever and has no structure apparently so tasked. In the remaining 27 institutions classified under "unknown" there is clear

evidence that developmental education and support services are provided; however, it is impossible to identify the formal organizational structure providing them from the self-studies.

In further examining Table 10, it is also apparent that the distribution of the formal structure primarily identified with the tasks of developmental education and student support services varies somewhat among the regional subsets. While the North Central, Western, and Middle States subsample distributions of Carnegie types most closely approximate the total distribution of Carnegie types within those regions' populations, the distributions of formal structural types in the North Central and Middle States associations' subsamples are more like the distribution of types for the entire sample than are those of the other four regional associations. The North Western subsample appears to demonstrate the most diversity in distribution among the formal structural types of the six regional subsamples. However, the small number of cases in that regional subsample means that any one case determines a relatively large percentage of the distribution by structural type within that subsample.

Another way of looking at formal organizational structures' distribution is to arrange them by Carnegie classification. When examined in this way, as Table 11 demonstrates, it is possible to identify the formal structures and the limited proportion of "unknown" formal structures in each Carnegie classification in the sample. Interestingly, there is also considerable divergence in the formal organizational structures when compared by Carnegie type. The Separate Division and Separate Department forms are found in every Carnegie classification; however, the range of percentages is substantial. The Separate Division forms only 15 percent of structural models in all Baccalaureate I institutions in this sample, yet forms 67 percent of the models found in Doctoral I Universities. Similarly, the Separate Department model constitutes only 31 percent of all types in both Baccalaureate I and Research I institutions, while comprising a full 60 percent of models found in Research II universities. The Decentralized Structural model is completely absent in all Doctoral universities in this sample and the Other Formal Structure model is absent in Doctoral I and Research II universities. The percentage of unidentifiable formal structures remains relatively low in all Carnegie classifications.

Table 11--Formal Structures Providing Developmental Education and Support, by Percentage* for Total Sample and Carnegie Subsamples

	Separate Division	Separate Department	Decentralized Structure	Other Formal Structure	Unknown Formal Structure
All Cases	32%	45%	11%	2%	9%
Associate	32	47	10	10	1
Bacc. II	29	47	11	9	4
Bacc. I	15	31	38	8	8
Master II	25	50	8	17	0
Master I	40	44	10	5	2
Doctoral II	29	43	0	29	0
Doctoral I	67	33	0	0	0
Research II	20	60	10	0	10
Research I	31	31	31	8	0

*Row totals may not equal 100% due to rounding.

Table 12--Locations of Formal Structure, by Percentage* for Total Sample and Regional Subsamples

	Acad.	Stud. Svcs.	Un-known	Acad. & Stud. Svcs.	Own Div.	Cont. & Adult Ed.	Enrollmt Mgmt.	Decentralize	Lib. or LRC
All	47%	18%	20%	2%	3%	2%	1%	6%	1%
North Cent.	50	17	13	6	5	4	3	1	0
West	21	42	16	0	0	0	0	19	2
North West	47	13	27	0	7	0	0	0	7
Middle	57	8	29	0	2	2	0	2	0
South	49	13	24	1	1	0	0	12	0
New Engl.	54	12	25	0	0	0	4	0	4

*Row totals may not equal 100% due to rounding.

Table 12 summarizes the location of the formal structures in the organizational structures of institutions included in the national sample and in each of the regional subsamples. The formal organizational structure involved with developmental education is most likely to be housed in the academic branch of institutional organization, being clearly so located in 47 percent of all institutions. In only about 18 percent of all institutions is a separate student services division the formal location for developmental educational services. The formal location is located jointly in and responsible jointly to both academic and student services divisions of the institutions in about 2 percent of all cases.

While the separate division or department form are the most common organizational structures identified as the formal organizational providers of such services, those separate divisions or departments appear rarely to be truly autonomous, answering to no overseeing authority other than its own executive officer and that of the institution itself. Formal structures may be located within continuing or adult education divisions, within enrollment management or otherwise purely administrative divisions of institutions, as well as within libraries and learning resources centers. In addition, not only can the formal structure tasked with developmental education be decentralized, but the responsibility for and physical location of that structure and its tasks can also be decentralized, although clearly identifiable as decentralized (as opposed to being unidentifiable), in institutional self-studies. Finally, in about 20 percent of all cases, it cannot be determined which organizational division of the institution is responsible for overseeing developmental education based on information available from their self-studies.

Further examination of Table 12 makes clear that there are also regional variations in the location of the formal structures of developmental education within the organization. However, these do not appear to be congruent with the distribution of institutions by Carnegie type within the six regions. Table 13 summarizes the distribution by Carnegie type of locations for the formal structures tasked with developmental education.

These analyses lead to the conclusion that the formal organization concerned with developmental education may assume different structural forms, even though these forms appear to be evident in differing regional and Carnegie subsamples in differing proportions rather than uniformly distributed. There appear to be at least four different and distinctive organizational patterns. These could be described as being the separate

division model, the separate department model, the decentralized model, and the other department model.

These might be depicted graphically as sketched in Figures 4 through 7.

Table 13--Locations of Formal Structure, by Percentage* for Total Sample and Carnegie Subsamples

	Acad.	Stud. Svs.	Un-known	Acad. & Stud. Svs.	Own Div.	Cont. & Adult Ed.	Enrollment Mgmt.	Decentralize	Lib. or LRC
All	47%	18%	20%	2%	3%	2%	1%	6%	1%
Assoc.	46	49	17	3	4	3	0	6	1
Bacc. II	58	9	22	0	2	0	4	4	0
Bacc. I	46	15	15	0	0	0	8	15	0
Master II	42	17	42	0	0	0	0	0	0
Master I	44	16	26	3	2	0	0	6	3
Doc. II	57	14	29	0	0	0	0	0	0
Doc. I	67	33	0	0	0	0	0	0	0
Res. II	60	10	20	0	0	0	0	10	0
Res. I	31	46	8	0	0	0	0	15	0

*Row totals may not equal 100% due to rounding.

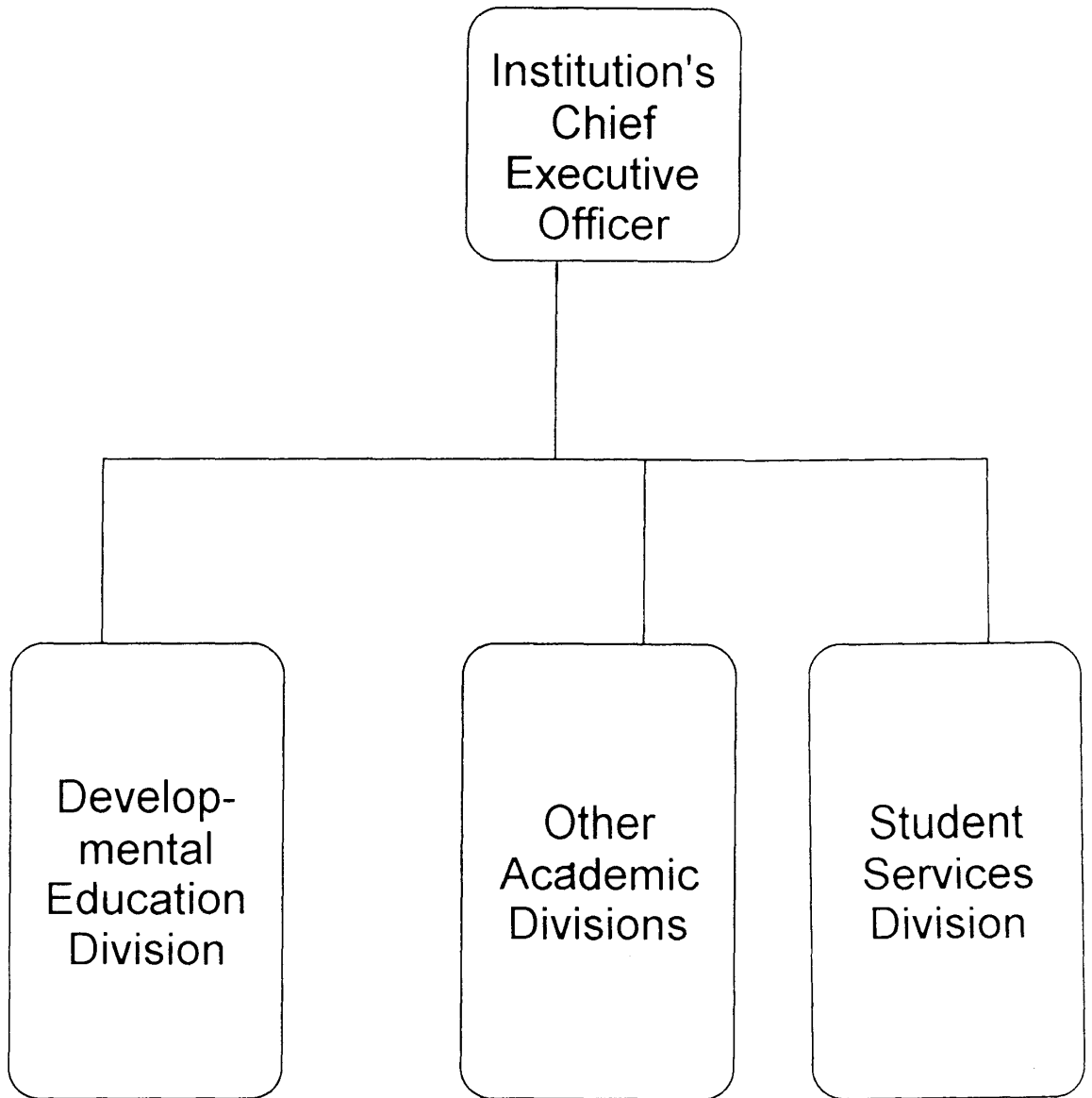


Figure 4--Separate Division Model

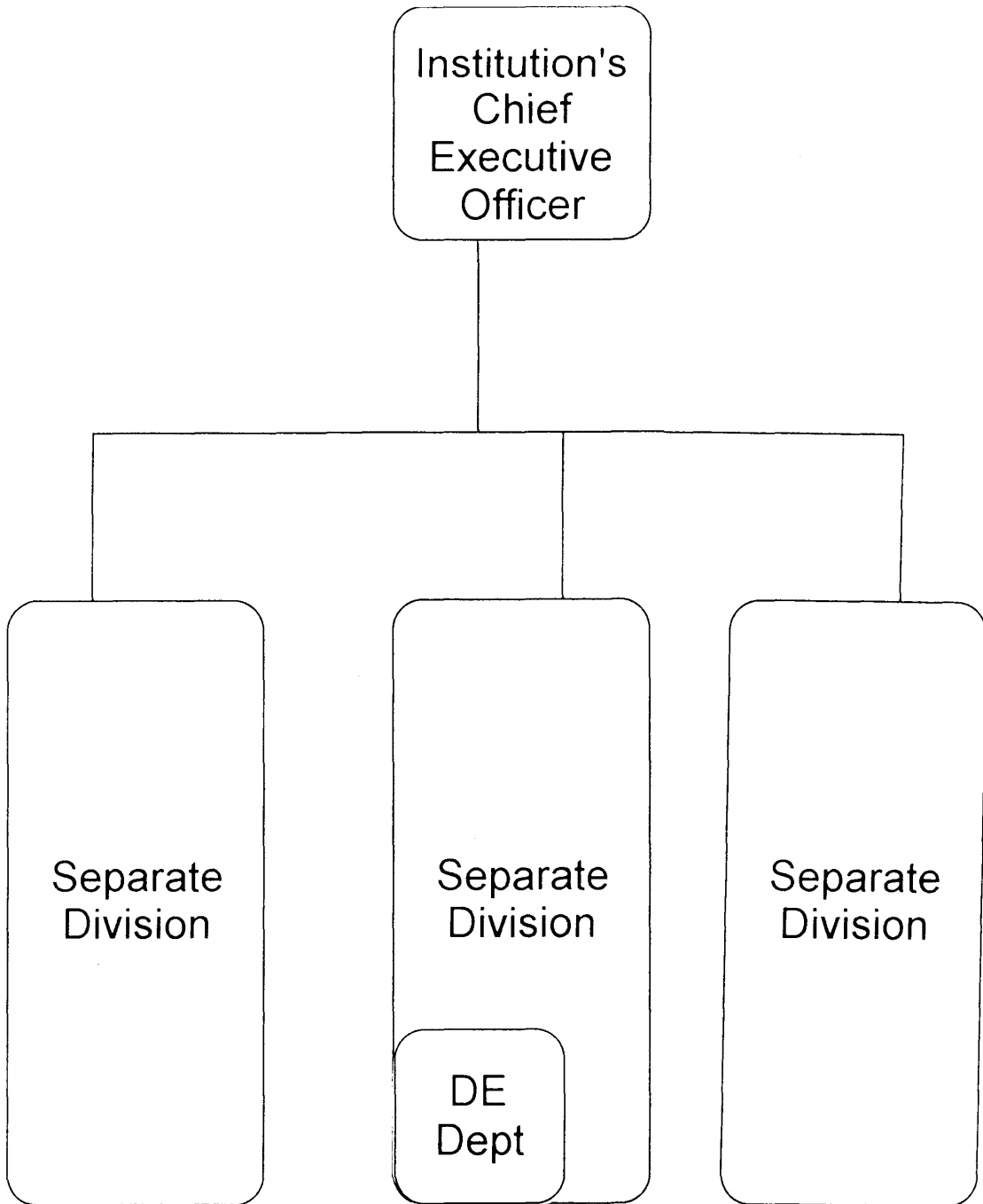


Figure 5--Separate Developmental Education Department Model

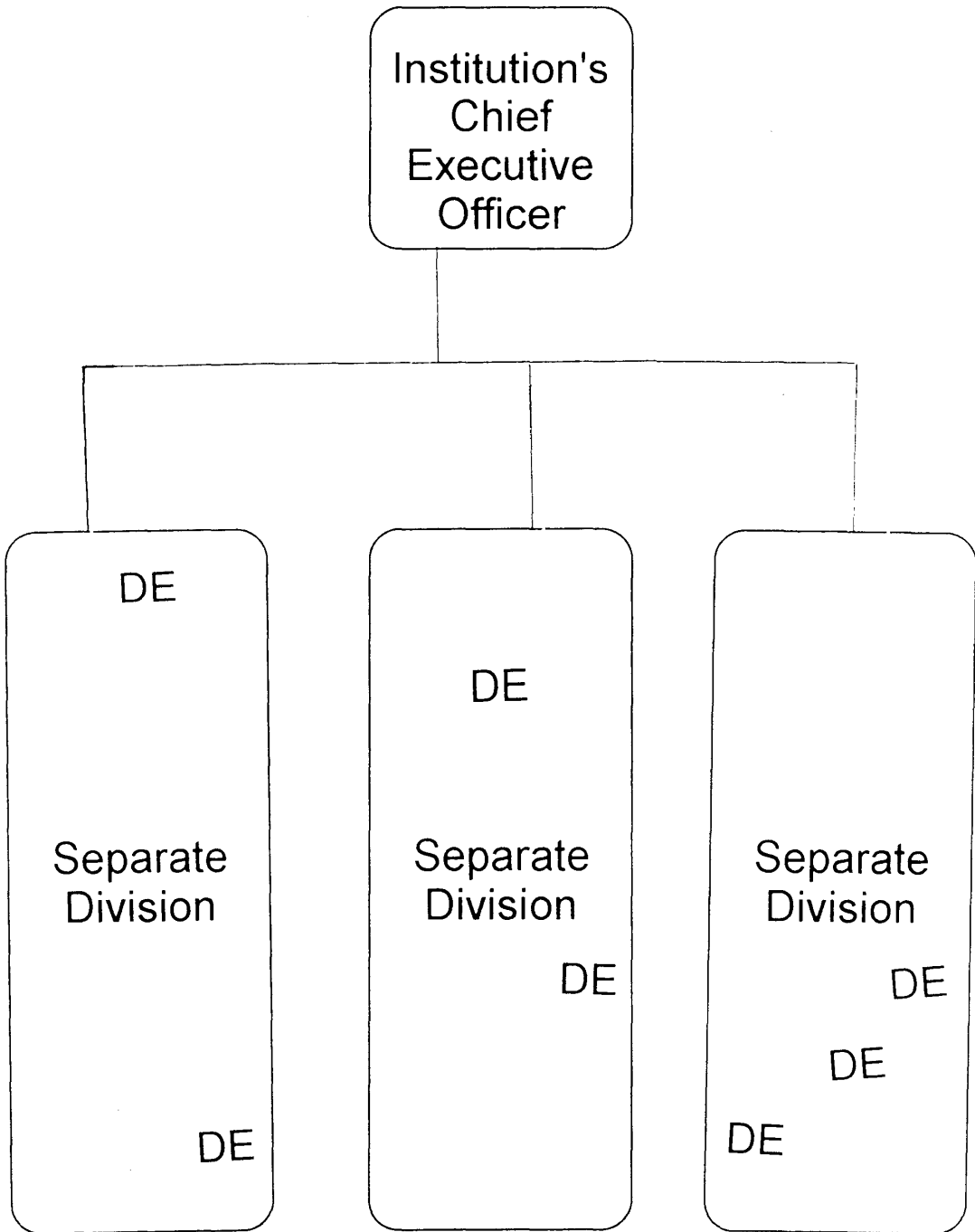


Figure 6--Decentralized Model

Note: These placements are for the sake of illustration only, decentralized programs could fall anywhere

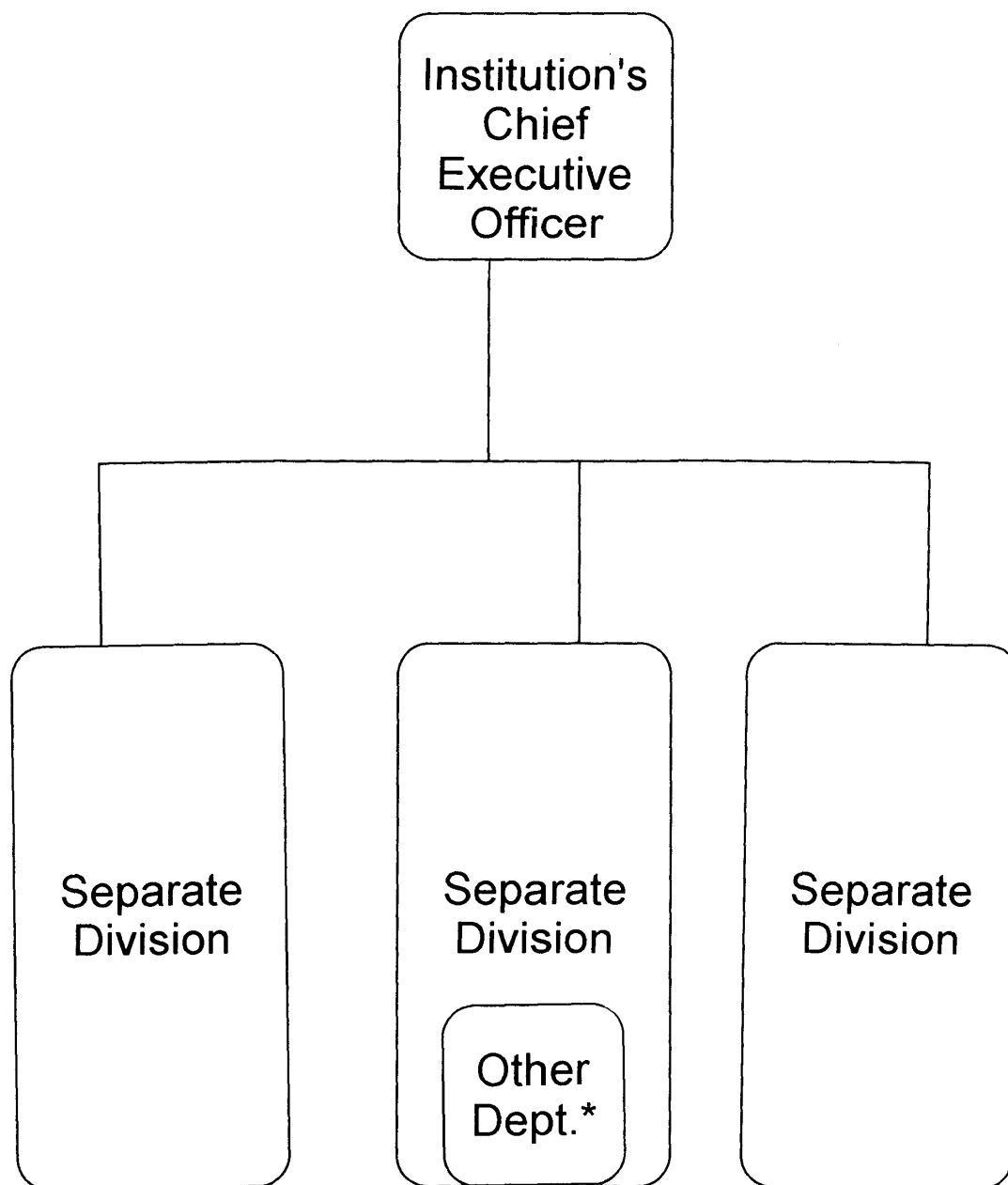


Figure 7--Other Department Model

*Other department principally tasked with other responsibilities, such as Library/LRC, Enrollment Management, or Adult & Continuing Education.

Informal Organizational Structure

Although the presence of an informal organizational structure involved with developmental education could be hypothesized based on the literature of organizational theory and from organizational research, there is little empirical evidence in the literature of developmental education to support hypotheses about the location or components of the informal organization. Therefore, it was not possible to predict *a priori* where it might be found or of what it might consist; rather, it was hoped that evidence might be emergent from the data available from self-studies. In fact, there is considerable evidence in the institutional self-studies of a widespread informal organization providing developmental interventions on behalf of students.

Table 14 summarizes the locations reported as being involved, at least in part, in providing developmental interventions, the number so reporting, and the percentage that represents of the entire sample. It must be noted that any number of organizational units or subsystems may be part of the informal organization in a single postsecondary institution and, thus, column totals do not equal 100 percent. Furthermore, the location names used in Table 14 are chosen to be encompassing, generic descriptors of the range of locations, applicable across a wide variety of institutional types and organizational structures; they are not necessarily identical to the varied terminology used in the self-studies.

A few of these descriptors may need additional explanation here in order to facilitate interpretation of the table and understanding of the sorts of structures included in the informal organization. The category, "All Academic Departments," is used when an intervention does, in fact, occur in every academic department. The most common example of such an intervention might be faculty advising. The category, "Other Departments," is used for developmental interventions such as tutoring programs or pre-college courses carried out by academic departments other than those responsible for English writing and speech or mathematics. While these may occur in virtually any academic department, they are most common in departments that include accounting, physics, biology, nursing, and other health occupations.

The category, "Dev[elopmental] Ed. Department," is used for those instances where an institution has an additional department, other than the one named as being the formal location of developmental education and services, that also is solely tasked with providing developmental coursework, tutoring, supplemental

instruction, or computer-assisted instruction for developmental students. Similarly, the categories, "Learning Center 1" and "Learning Center 2," are used only for additional learning assistance centers providing tutoring, computer-assisted instruction, and/or supplemental instruction, but no coursework. Such situations occur in

Table 14--Components of Sample and Regional Subsample Informal Organizations

Location	Total Sample		North Central		West		North West		Middle		South		New England	
	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*	N	%*
All Acad Depts.	155	49%	49	50%	14	33%	8	53%	23	47%	48	57%	13	54%
English Dept.	105	33	39	40	10	23	6	40	13	26	30	36	7	29
Math Dept.	96	31	33	34	10	23	6	40	13	26	27	32	7	29
Other Depts.	97	31	20	20	14	33	4	27	18	37	33	39	8	33
Dev. Ed. Dept.	65	21	3	3	13	30	2	13	14	29	24	29	9	38
Counseling Ctr.	226	72	76	78	30	70	12	80	32	65	64	76	12	50
Svcs. for Students with Disabilities	34	11	12	12	10	23	1	7	2	4	7	8	2	8
Minority Student Program	53	17	20	20	8	19	3	20	10	20	11	13	1	4
Enrollment Svcs.	182	58	50	51	27	63	9	60	20	41	56	67	20	83
Orientation Offc.	69	22	24	24	7	16	3	20	8	16	20	24	7	29
Intercoll. Athletics	90	29	18	18	17	40	8	53	6	12	37	44	4	17
Continuing Education	15	5	12	12	0	0	0	0	1	2	0	0	2	8
Adult Ed.	82	26	23	24	16	37	6	40	8	16	26	31	3	12

*Percentage of the total sample/subsample reporting developmental interventions in this location.

Table 14--cont.

Location	Total Sample	North Central	West	North West	Middle	South	New England
	N %*	N %*	N %*	N %*	N %*	N %*	N %*
Career Ctr.	133 42	44 45	17 40	5 33	15 31	38 45	14 58
Learning Ctr. 1	76 24	27 28	15 35	4 27	8 16	19 23	3 12
Learning Ctr. 2	25 8	8 8	5 12	1 7	5 10	6 7	0 0
Counseling Site 2	66 21	27 28	9 21	3 20	7 14	18 21	2 8
Residence Life	21 7	8 8	1 2	0 0	6 12	5 6	1 4
Daycare	65 21	21 21	15 35	4 27	9 19	9 11	7 29
Library	157 50	35 36	10 23	6 40	21 43	68 81	17 71
Financial Aid Offc.	15 5	4 4	4 9	0 0	1 2	5 6	1 4
Testing Ctr.	27 9	10 10	4 9	1 7	3 6	9 11	0 0
Health Svc.	1 <1	1 1	0 0	0 0	0 0	0 0	0 0
Internatl. Student Svc.	38 12	8 8	11 26	2 13	5 10	9 11	3 12
Student Organizations	4 1	2 2	0 0	0 0	0 0	2 2	0 0
Campus Ministry	8 3%	0 0%	0 0%	0 0%	4 8	4 5	0 0
Other Counseling Sites	3 <1	0 0	0 0	0 0	1 2	2 2	0 0

*Percentage of the total sample/subsample reporting developmental interventions in this location.

instances where institutions provide separate programs for vocational and baccalaureate students, where grant funding restricts use of programs and/or facilities to designated subpopulations of the student body, in some institutions with large numbers of students, and in some institutions with widely geographically separated service sites. The multiple developmental department situation also sometimes occurs when distinctions are made between students admitted to the general college and those admitted to restricted-admission programs or majors, or when lower-division (freshman and sophomore) students are distinguished from upper-division (junior and senior) students.

For the purposes of this study, collection of data with regard to services to students with disabilities is limited strictly to interventions with students having learning disabilities. When services provided solely for students whose physical challenges are eliminated from consideration, the number of services to students with disabilities decreases dramatically and the information reported in the category, "Services for Students with Disabilities," should not be taken as representing all services provided to students with disabilities. The category, "Intercollegiate Athletics," may be similarly misinterpreted. For the sake of consistency in presenting data and the results of analysis, the percentage in that category is presented as the proportion of all institutions. However, not all colleges and universities in the sample have intercollegiate athletics; if the number of interventions located within intercollegiate athletic departments were compared only to the number of colleges and universities having intercollegiate sports, the resulting percentage would be somewhat higher.

The term, "Enrollment Services," is used as an encompassing category title for a number of offices and functions that go by many different names and are organized in a wide variety of aggregated and disaggregated conformations in the sample. This inclusive category includes matriculation functions such as recruiting and pre-college advising, as well as admissions, registration and record-keeping; student tracking functions; some retention programs; progress and G.P.A. requirements; and fulfillment of graduation requirements. In some instances, this category also includes special admissions for underprepared students (frequently with mandatory developmental interventions), special tracking and developmental provisions for students on probation, as well as screening for readmission students who have been dismissed for academic reasons and specifying the terms of readmission (often including developmental interventions).

In 185 (59 percent) of the self-studies there are no references to developmental educational interventions that cannot be situated. However, in addition to the locations noted in Table 14, there are 307 instances where provision of developmental interventions were noted, apart from the organizational structure formally charged with developmental education, but where location could not be identified from the information provided in the self-studies. Fifty institutional self-studies contain one reference to intervention that could not be assigned to an identifiable location, 29 contain two such references, 21 contain three, 13 have four unsituated interventions, and 15 have from five to seven unsituated interventions.

Turning again to Table 14, it is also evident that interventions occur rarely in some areas. The student health service in only one institution provides psychological counseling with regard to personal, career, and academic issues affecting students' success and persistence in college. Student organizations (e.g., Greek, honorary, student government) provide peer tutoring and/or peer counseling in two institutions located in the Middle States association and two in the Southern association. Developmental services provided by campus ministers and counseling sites other than the principal counseling and advising loci are similarly limited in frequency and occur only in the Middle and Southern associations. Special developmental interventions offered for international students are surprisingly rare, occurring in only 12 percent of the total sample and ranging from a low of 8 percent in the North Central region to a high of 26 percent in the Western region which encompasses California, Hawaii and Western Samoa. (It should be noted, however, that no institutions from Western Samoa are included in this sample.)

Organizational subsystems frequently noted as being a part of the informal developmental educational organization include all academic departments, counseling centers, enrollment services, career centers, and libraries. Other subsystems fairly frequently reported within the informal organization include English and mathematics departments, other academic departments, second departments of developmental education, separate orientation and freshman year offices and programs, intercollegiate athletic departments, adult education programs, learning centers and secondary sources for counseling, and daycare centers for students' children.

Factor analysis is a way of attempting to identify underlying relationships among correlated variables (Isaac & Michael, 1982; Kleinbaum & Kupper, 1978; Norusis, 1993). Because the informal structure(s) involved in developmental educational activities had not been explored prior to this study, factor analysis has been undertaken with the informal subsystem(s) location variables in an attempt to gain understanding of their relationships and their purpose in the informal organization.

Factor analysis using varimax rotation with all location variables identified as belonging to the informal organization for all cases in the sample is not a robust statistical method with these data. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is barely over the threshold of usefulness according to Kaiser (1974). However, results of the Bartlett Test of Sphericity total are large and the associated absolute value of the probability level is very small (<0.00000); so, factor analysis may have some utility in the absence of other sources of information about the informal organizational structure(s) associated with developmental education.

Examination of the factor score coefficient matrix for all informal location variables for all cases suggests the presence of underlying informal organizational structure(s). However, variables present in very small numbers added little to the analysis. Those occurring less than 31 times in all cases (or, in less than 10% of the cases) were omitted and factor analysis was repeated. The KMO for this analysis totalled 0.58 and the Bartlett of Sphericity was large (431.22) with a very small absolute probability value (<0.00000). Seven meaningful factors were identified in this manner:

Factor 1--Provision and Support of Basic Academic Skills by English and Math Departments;

Factor 2--Matriculation Services;

Factor 3--Counseling;

Factor 4--Adult Education;

Factor 5--Intercollegiate Athletics;

Factor 6--Other Developmental Education; and,

Factor 7--Career Enhancement.

(Appendix H provides additional information about these factors.)

Factor analysis using these same variables has been attempted for each region. Factors are identified in the North Central, Western, Middle, and Southern regional subsamples. Neither the North Western nor the New England subsamples were suitable for factor analysis due to their limited sizes. While some underlying structures emerged in both the analysis of the entire sample and in the analyses of the regional subsamples, there are also apparent differences among the subsamples and in comparison of subsamples with the entire sample. Table 15 summarizes these findings, with X indicating the presence of the underlying structure as developed through factor analysis.

Recoding the results of factor analysis on the informal structures as new variables and correlating these variables for all cases provides another way to look at relationships of the underlying elements of the informal organization. Examined in this manner, modest positive correlations ($p < .05$) are indicated among some of the new informal structure variables. Basic skills development and support in mathematics, writing and reading are associated with counseling ($r = .16$), developmental education provided outside the formally tasked location ($r = .22$), career development and enhancement ($r = .15$), and intercollegiate athletics ($r = .15$). Developmental education provided outside the formally tasked location and within the informal organization is positively associated with career development and enhancement ($r = .13$) and adult education ($r = .12$). Small positive relationships are noted between career development and enhancement and intercollegiate athletics ($r = .11$) and adult education ($r = .12$), while adult education alone has a positive, but modest, association with intercollegiate athletics ($r = .14$). These results suggest that there may be associations and interactions within the informal organization and between its members that help shape it and its developmental activities.

Relationship of Formal Organizational Structure(s) with Informal Organizational Structure(s)

It seems evident that at least four formal structures tasked with developmental educational interventions can be identified from the sample data. It also seems evident that an informal organization, also involved in part with developmental educational interventions, exists within almost all of the institutions represented in the sample. This informal organizational system, or subsystem of the organization as a whole, consists of offices, programs, departments, schools, and colleges widely spread across institutions. It is not limited solely to clearly identifiable developmental or student services programs. Factor analysis has been

undertaken in an attempt to identify more clearly the commonalities or substructures tying this informal organization together or shaping its activities and foci.

The question remains whether there is an identifiable relationship between formal and informal structures that might be used to identify a more holistic structure or set of structures including both formal and informal organizations. Toward exploration of this possibility, the results of factor analyses were recoded as new variables and correlated with formal structure types. There are no correlations between these new variables, representing informal organization, and any of the formal structural types identified.

An Unanticipated Finding: Intervention Activity Typology

Because of the exploratory nature of this study, the author made a conscious effort to be receptive to recognition of unanticipated findings. Although she did not set out to develop a new way of categorizing developmental interventions, such a typology has emerged from the data and the process of collecting and analyzing them. Early in the data collection process, the author became increasingly aware that developmental interventions described in the institutional self-studies could be categorized as screening activities, preparatory activities, or supportive activities.

As increasing amounts of data were collected and her familiarity with the data deepened, it became more evident that the screening interventions could be further subdivided into screening-into and screening-out-of functions, or entry screening and exit screening. Entry screening and exit screening might occur at any number of places or points in time during a student's college career, might occur either formally or informally, and screening into something might automatically mean screening out of something else, while exit screening in one area might be entrance screening into another.

Examples may help to clarify these notions: Admission standards are probably the most obvious example of formal entry screening and graduation requirements the most obvious example of formal exit screening. Informal entry and exit screening, however, may be much more subtle. For instance, use of English-only recruitment and matriculation materials or materials written at a very high level of reading difficulty may prove to be effective entry screens. Similarly, one institution mentioned using the offer of financial aid and the amount offered as an entry screening mechanism designed to discourage students considered undesirable in that

Table 15--Underlying Structures Informal Organization, Total Sample and Regional Subsamples

	All Cases	North Central	West	North West*	Middle	South	New England*
Basic Acad. Skills by Engl. & Math Depts.	X	X	X		X	X	
Matriculation	X						
Counseling	X	X			X	X	
Adult Ed.	X	X	X		X		
Athletic	X						
Other Developmental Ed.	X	X	X		X	X	
Career Enhancement	X	X	X			X	
Institutional Support			X		X		
Matriculation Support					X	X	
Faculty Support		X				X	

*Factor analysis could not be carried out with the cases in these subsamples.

particular institution's culture from enrolling there. In reading institutional self-studies, taking notes, and rereading and reflecting on those notes, it becomes ever-easier to distinguish both formal and informal entry- and exit-level mechanisms in operation throughout the institution. These occur, too, in both the formal and informal structures concerned with developmental education and students.

Preparatory interventions might be described as those necessary to prepare students who arrive at some point in college unprepared to satisfactorily engage in the expected work at that point. This may occur in the very beginning of the student's college experience or at some other later point during the college career. Recognition of the need for preparatory interventions seems to imply the operation of screening, whether by formal assessment or by informal assessment by the student, or some other individual, of the student's need for additional preparation. For example, the student who is assessed upon admission to a postsecondary institution and required to enroll in mandatory developmental math coursework prior to enrolling in college level math courses experiences formal entry-level screening in the assessment process and preparatory intervention in the developmental courses. In an institution without a formal screening process, this same student might intend to enroll in the college-level algebra course only to find his/her advisor recommending first taking a preliminary course to review or learn basic algebraic concepts. This might be understood of an informal entry screening process leading to preparatory activities.

In contrast, a student admitted and assessed directly into introductory college-level mathematics courses might have no difficulty with mathematics courses until s/he enrolled in differential equations. Having moved to a considerably higher level mathematically, this individual now might need occasional (or even regular) assistance in mastering the intricacies of higher math in order to make the grades s/he desires, although her/his basic competencies with mathematics are quite good. This individual might be said to be engaged in a supportive intervention in meeting with a tutor or attending supplemental instruction sessions. While the intervention is formalized, the entry-screening process that causes the student to be involved with the intervention may be either formal (failure on a test) or informal (the student's own sense that s/he needs some help) and the exit-screening from the supportive intervention may be similarly formal or informal. Frequencies and means were determined for instances of entry screening, preparatory and supportive interventions, and exit

screening observed in the self-studies for all cases, by region, and by Carnegie classification. Results of these calculations may be seen in Tables 16 and 17.

Because this intervention activity typology is not the main thrust of this study, it has not been analyzed extensively. It is interesting to note, however, that Table 16 suggests a considerable degree of similarity between the national sample and the regional subsamples, both in the proportion each intervention type forms of all interventions and in the mean number (\bar{x}) of separate interventions per institution. Given the differences found among regions for the distribution and location of formal structure (Tables 10 and 12) and the distribution of the informal structure (Table 14), the author is surprised to find such apparent congruence of intervention activities among regions.

Table 16-Comparison of Intervention Typology , Total Sample and Regional Subsamples

	All Cases	North Central	West	North West	Middle	South	New England
	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*
Entry Screen	619 (2.0) 14%	170 (1.7) 13%	86 (2.0) 13%	23 (1.5) 10%	87 (1.8) 16%	205 (2.4) 15%	48 (2.0) 15%
Prepare	1850 (5.9) 43%	508 (5.2) 40%	281 (6.5) 43%	103 (6.9) 46%	232 (4.7) 42%	574 (6.8) 43%	152 (6.3) 48%
Support	1721 (5.5) 40%	539 (5.5) 42%	273 (6.3) 42%	92 (6.1) 41%	216 (4.4) 39%	489 (5.8) 37%	112 (4.7) 35%
Exit Screen	150 (0.5) 3%	52 (0.5) 4%	11 (0.2) 2%	4 (0.3) 2%	15 (0.3) 3%	66 (0.8) 5%	2 (0.2) 1%

\bar{x} = mean number of interventions of this type per case in entire sample and regional subsamples

*Column totals may not equal 100% due to rounding.

Table 17--Intervention Typology , Total Sample and Carnegie Subsamples

	All Cases	Associate	Bacc. II	Bacc. I	Master II	Master I	Doc. II	Doc. I	Res. II	Res. I
	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*	N (\bar{x}) %*
Entry Screen	619 (2.0) 14%	304 (2.1) 14%	90 (2.1) 18%	18 (1.4) 14%	26 (2.2) 18%	128 (2.1) 15%	5 (0.7) 7%	2 (0.7) 4%	21 (2.1) 13%	25 (2.0) 11%
Prepare	1850 (5.9) 43%	990 (6.7) 45%	194 (4.3) 40%	44 (3.4) 35%	63 (5.2) 42%	344 (5.5) 40%	27 (3.9) 37%	24 (8.0) 45%	70 (7.0) 42%	94 (7.2) 40%
Support	1721 (5.5) 40%	827 (5.6) 38%	186 (4.1) 38%	59 (4.5) 48%	49 (4.1) 33%	353 (5.7) 41%	39 (5.6) 53%	26 (8.7) 49%	70 (7.0) 42%	112 (8.6) 48%
Exit Screen	150 (0.5) 3%	77 (0.5) 3%	19 (0.4) 4%	3 (0.2) 2%	10 (0.8) 7%	32 (0.5) 4%	2 (0.3) 3%	1 (0.3) 2%	5 (0.5) 3%	1 (0.1) <1%

* Column totals may not equal 100% due to rounding.

Entry screening in this sample, per Table 17, appears to be about equally common in all Carnegie types, except for Doctoral I and II institutions, which are markedly lower. Although the percentage of all interventions posed by preparatory interventions does not appear to vary greatly among Carnegie types (allowing for the very small number of some types of institutions in the sample), the mean number of interventions per institutions has a considerable range, as do those associated with supportive interventions. Somewhat surprisingly, in both instances Doctoral I and Research I and II universities appear to have a greater number of preparatory and supportive interventions per institution than do other Carnegie types.

When thought of as a typology consisting of entry-screening, preparation, support, and exit-screening, this set of interventions might look and function, in a simplified form for the sake of illustration, something like Figure 8. Conceived in this way, students admitted to the institution have survived an entry screening mechanism. Depending upon institutional policy, they may be further screened at entry into preparatory interventions, regular college coursework, or a combination of the two.

Students screened into regular courses may avail themselves of, be required to engage in, or be the unknowing recipients of supportive interventions (e.g., tutoring, supplemental instruction, advising and counseling, freshman year programs, etc.). There are a number of potential exit screens active in regular college coursework (e.g., course grades, mandatory competency examinations, admission to a major or upper division work, or, graduation requirements), some of which may also serve as entry screens to more advanced work. Students who successfully negotiate the successive, intervening exit screens proceed through the institution and may eventually pass the final exit screen, completion of graduation requirements.

In some institutions, students who fail to successfully negotiate the successive, intervening exit screens may find themselves looped back into additional attempts, perhaps with additional support. In other institutions, students who are unsuccessful in passing these screens are looped, instead, into preparatory sequences. In many institutions there may be a finite limit to the number of attempts students may make at passing any entry- or exit-screen, as well as a finite limit to the amount of preparatory and supportive interventions available to them. The principal exceptions to such limitations in this sample seem to be in technical programs and adult education programs having competency-based programs that are completely

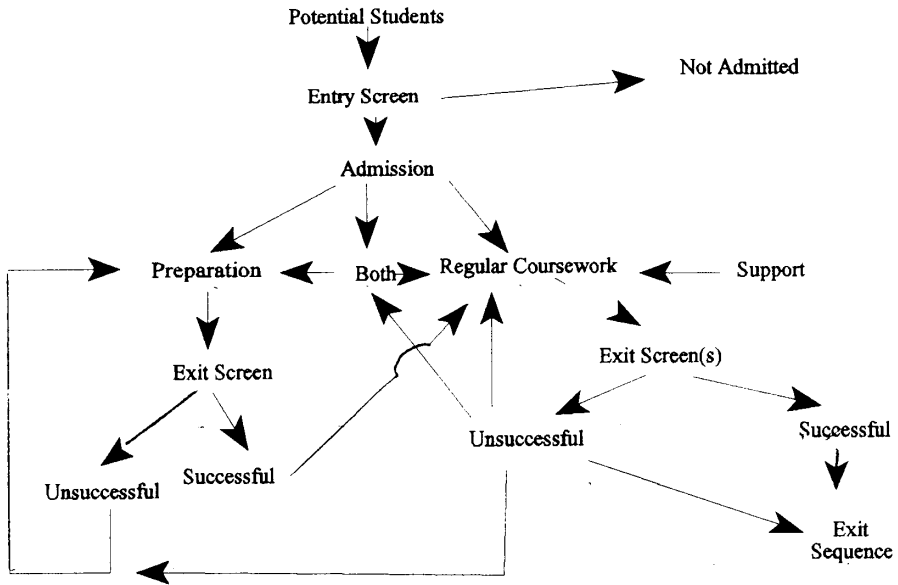


Figure 8--Illustration of Intervention Typology in Action

open-ended with respect to the amount of time students may spend in achieving and demonstrating the required competencies. In most cases, all students must either successfully negotiate entry- and exit- screens in order to complete their educational sequences or eventually be screened out of the institution.

Students who are initially screened into preparatory interventions seem to follow a similar sequence through their preparatory phase. The principal difference is that, ideally, exit-screening for the preparatory sequence is also entry-screening for the regular college coursework sequence. Once having completed the preparatory phase, students then should be able to follow a similar sequence as regularly-admitted students through the regular academic sequences.

Limited Content Analysis

As described in Chapter III, the author was limited in most cases to one pass through the original self-studies, reading and taking notes as direct quotes as she went. Because of this limitation, she was not able to immerse herself as fully in the documents themselves as would be desirable if there were no constraints on so doing. However, as noted previously, direct quotation in the notes and the ability to revisit those notes several times has proved to be an economical way to manage limited content analysis. One of the first things sought out and examined, if it was available, in each document or set of documents was the institutional mission statement and each mission statement was typed in full into the notes.

Because of differences in ways supporting information is provided to site visit teams from the regional accrediting agencies, mission statements are not always included in institutional self-studies. That is the case with 46 of those included in this study's sample. The balance have been inspected carefully for references that could be construed as indicating an institutional commitment to provision of developmental education (e.g., "developmental," "remedial," "academic support services," "adult education," "G.E.D.," "non-traditional" students). Of the 214 mission statements available for inspection, only 89 (28%) included any words or phrases indicating an institutional commitment to provision of developmental education. Even if all 46 of the missing mission statements included developmental education, the total would only amount to about 36 percent of the sample. Given the pervasiveness of developmental education in the sample, as indicated by the fact that only

one institution truly did not engage in any developmental practices, it seems remarkable that developmental education is omitted from mission statements so commonly.

It is particularly remarkable in the face of the institutions' own statements regarding the portion of entering students believed to be inadequately prepared to take all entry-level courses. With the exception of the single institution that provides no developmental or academic support at all, every other self-study states that some portion of entering students needed preparatory assistance in order to successfully enroll in college-level courses. The range of percentages of such students was huge, with a low of 3 percent and a high of 92 percent. However, about half of all institutions reported that between 40 and 60 percent of all entering students needed additional preparation in mathematics, between 30 and 65 percent needed additional preparation in English composition (including grammar and spelling), and between 15 and 40 percent of all entering students needed preparatory reading development. An additional indicator of student unpreparedness for college can be derived from the fact that 157 (50 percent) of the 313 case studies specifically noted that entering students need specific bibliographic instruction because they do not know how to use a library.

Use of a computerized word-find and code technique with the quotations from each self-study made it possible to track themes through all 313 cases and to check for association between themes and associated text, where associated text was limited to the same paragraph in which key-word thematic indicators were found. Of all the themes coded and tracked throughout all 3,500 or so pages of field notes, one stands out as being consistent in virtually all self-studies and in its associations.

That theme is the persistent association of students representing minority racial or ethnic groups as being those to whom developmental or remedial education is provided and as the only student groups typically needing developmental education. This is frequently presented under the guise of "multiculturalism," "access," or as services to male intercollegiate athletes (who are almost always discussed as being minority students). With the principal exception of small institutions in rural areas, the reader would seldom suppose that white, native-born, high school graduates are involved in developmental education in the institutions whose self-studies are included in this study, based on what is written in those self-studies. Of the 313 cases, 249--or nearly 80 percent--leave the impression that developmental education is provided almost solely to minority

students either as a gesture of institutional goodwill or because the institution is located in an area where the minority population provides virtually the entire student body.

Because the author has provided assurances to the regional accrediting agencies and their member institutions that she would take pains to avoid revealing information that would make it possible to specifically identify a particular institution of postsecondary education, program, or individual, it is not possible to provide quotations as examples of this sort of association. However, the following examples have been lightly edited to avoid identification, yet still provide some of the tenor of the association between minority students and developmental education in a large proportion of the self-studies.

1. Special services are in place to meet the needs of disadvantaged and/or minority students. . . .services are provided through a federally-funded grant program for first generation African-Americans and Hispanics [from a land-grant university describing its formal organizational structure providing developmental education].
2. The [enrollment program for minority students provides] an academic advisor to student athletes who assists them with developing a schedule and registering, tutors them, provides counseling, and raises money in support of athletics [a community college describes its developmental services].
3. When they are admitted, [minority students] are monitored by the financial aid staff and become a special concern of advisors and tutors [from a private college beginning its description of developmental services].
4. Students who would not normally be admissable are admitted through [a preparatory program's] admission office run by the Office of Minority Affairs [from a selective public research university explaining how it gets its developmental students].
5. All minority students are admitted directly to [a developmental program][from a highly selective, private research university in explanation of why it needs a developmental program].
6. We are proud of our success in enrolling high-quality students. Evidence of this is the fact that we do not have an academic remediation program. We do not need one. We do provide an intense summer pre-college summer program for those black students unfamiliar with the rigors of college study [statement from a public institution featuring liberal education as to why they have no program and, interestingly, that only their black students need one, anyway].

There is one other theme that recurs through the sample self-studies; however, it is considerably more difficult to track because self-studies seldom discuss funding in any detail outside the "institutional resources" chapter and that chapter typically deals with gross financial issues, rather than the sources of funding for

developmental education. Nevertheless, provision of developmental programs appears to depend heavily on the availability of grant funding. Of all 313 cases, only two institutions specifically note that their programs are run solely by "hard" money (institutionally-budgeted funding) with no "soft" money (external grant funding).

Most developmental programs appear to rely on the availability of grant funding for continuing operation. A total of 202 cases either specifically mention grant funding or describe program qualification standards that are clearly identifiable as those of one of the federally-funded grants. The balance, 109 institutions, are not readily classifiable as receiving grant funding in support of their developmental education programs on the basis of evidence from self--studies.

Summary of Findings

The purposive sample of 313 cases constitutes about twelve percent of the national population of interest and approximates the Carnegie Type profile in the national population. However, the six regional samples less closely approximated the distribution of institutions by Carnegie type within the regions. Of the 313 cases included in this study, only appears to provide no indication that developmental educational activities occur within that institution.

In the balance of 312, a formal organizational structure tasked with developmental education can not be clearly identified in about nine percent of all cases. The formal organizational structures in the remainder of the sample can be classified into a structural taxonomy consisting of the separate division model, the separate department model, the decentralized model, and the other department model. In most instances, an informal organization also involved in developmental interventions can also be identified.

Through content analysis of the intervention activities carried out in the formal and informal organizations, an intervention typology was identified. It appears that all interventions can be classified as being either entry screening, preparation, support, or exit screening. This typology is useful in identifying articulation among different parts of the organizational sub systems of the institution, as well as the direction of flow of activities.

Finally, content analysis also revealed a consistent association of developmental education with minority students and program financing from sources external to the institution. Additionally, mission

statements that could reasonably be construed as including support and provision of developmental education are markedly absent, given the prevalence of developmental education.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

A great deal of information has been presented in Chapter IV. Some of this information is somewhat ambiguous. Yet, other findings seem relatively clear. What can be understood from this information? How do these understandings relate to what has been theorized or presented as empirical findings in the literature of developmental education, higher education, and organizational research? What do they suggest about the practice and policy of developmental education in American colleges and universities? What needs to be done to clarify or solidify these understandings? At what points might these understandings be linked with findings from other researchers to help develop a more holistic view of American higher education? Answers to these questions are the focus of this final chapter. However, before turning to those answers, it might be well to summarize the discussions of the first four chapters.

Overview of Previous Discussion

Developmental programs have been delimited to those defined as "a system for delivering instruction, academic support, and personal development activities to college students" (Clark-Thayer 1995, pp. 167-168). They have been further delimited to the population of postsecondary institutions in the United States accredited by one of the six regional accrediting agencies, falling outside the Carnegie Classification "Specialized", and offering the associate and/or baccalaureate degree. A purposive sample of 313 institutions submitting institutional self-studies for accreditation/reaccreditation site visits from one of the six regional accrediting agencies to occur in academic years 1992-93 or 1993-94.

Self-studies were examined for evidence of both or either formal and informal organizational structures involved in developmental activities, or interventions. Because there was little available evidence from the literature of developmental education about the organizational structure of portions of the institutional organization formally tasked with developmental education and virtually nothing known about an informal

organization, or subsystem, within the institution also engaging at least in part in developmental interventions, this study is conceived as being essentially exploratory in nature and engaged in seeking answers to first-order questions of existence and description.

The purposive sample of 313 cases constitutes about twelve percent of the national population of interest and approximates the Carnegie Type profile in the national population. However, the six regional samples less closely approximated the distribution of institutions by Carnegie type within the regions. Of the 313 cases included in this study, only one appears to provide no indication that developmental educational activities occur within that institution.

In the balance of 312, a formal organizational structure tasked with developmental education can not be clearly identified in about nine percent of all cases. The formal organizational structures in the remainder of the sample can be classified into a structural taxonomy consisting of the separate division model, the separate department model, the decentralized model, and the other department model. In most instances, an informal organization also involved in developmental interventions can also be identified.

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Finally, content analysis also revealed a consistent association of developmental education with minority students and program financing from sources external to the institution. Additionally, mission statements that could reasonably be construed as including support and provision of developmental education are markedly absent, given the prevalence of developmental education.

Revisiting the Research Questions and Hypotheses

The following research questions and hypotheses were arrived at in Chapters I and II as those guiding this study:

Research Questions:

1. Do programs of developmental education in postsecondary educational institutions in the U.S. assume different structural forms?
2. If so, can these forms be identified?
3. If these forms can be identified, can a reasonably limited set of structural models, or a typology of forms, be extracted from them?
4. Do developmental education programs form subsystems of the greater institutional organizational system?
5. If so, at what points do they articulate with other parts of the system?
6. Is this articulation patterned in some identifiable ways?
7. If so, can the pattern(s) be traced to identify an informal developmental education organization larger and more pervasive than the formal developmental education organization?
8. Are there distinctive patterns or relationships of informal organization that can be identified?

Hypotheses:

1. Programs of developmental education in postsecondary educational institutions in the U.S. assume differing and distinctive formal and informal organizational patterns.
2. These formal and informal organizational patterns can be identified as a set of structural models, or a taxonomy, derived from examination of institutional self-studies.

It appears that these questions can now be answered, at least in part. There also seems to be evidence that suggests whether and how the hypotheses can be supported.

The first three research questions are related: (1) Do programs of developmental education in postsecondary educational institutions in the U.S. assume different structural forms? (2) If so, can these forms be identified? and (3) If these forms can be identified, can a reasonably limited set of structural models, or a typology of forms, be extracted from them? Based on the data collected for this study and analysis of that data, as detailed in the previous chapters, it is now evident that programs of developmental education in American

colleges and universities do indeed take different structural forms and some of the possible forms have been identified in this study. A reasonably compact taxonomy of discrete models of the formal organizational structures may be identified as consisting of the Separate Division, Separate Department, Decentralized, and Other Department Models. While the first two models tend to predominate in the national sample, as well as in the regional subsamples, there is considerable regional variation in their distribution.

An additional nine percent of the institutions represented in the national sample, ranging from 4 to 14 percent of institutions in regional subsamples, could not be classified into one of these four structural models. It is difficult to know what to make of these unclassifiable formal organizational structures. Several possible explanations exist. They could represent another type or other types that were not represented sufficiently in the sample to be identifiable as types. They might represent a group of singular anomalies, similar to the idea of "distinctive" colleges and universities (Clark, 1970). It may be that lack of vision or errors made on the part of the researcher prevented her from identifying and classifying these institutions' formal organizational structures. In any event, more study and refinement of the taxonomy are indicated.

Research Questions Four, Five and Six also seem related to one another. Those questions are: (4) Do developmental education programs form subsystems of the greater institutional organizational system? (5) If so, at what points do they articulate with other parts of the system? and, (6) Is this articulation patterned in some identifiable ways? Clegg and Dunkerley's (1980) description of open systems, "Complex systems contain within them sub-systems that normally function in an independent manner but are oriented towards the overall goal of the wider system" (p. 191) seems to relate to Question Four. While only the Separate Division type of formal organizational structure can be thought of as a truly independent subsystem, the Separate Department and Other Department models may be essentially functionally independent.

The Decentralized Model is more difficult to conceptualize as an independent subsystem, due to its multiple loci within other structural and functional subsystems. However, if considerable variation among institutional cultures functioning in American higher educational institutions is accepted as probable, then this model may be understood as an example of a formal system of developmental education devised to both carry out the necessary functions of such a program and yet remain in conformity with institutional expectations. That

is, the Decentralized Model may well be a self-protective enactment of socially constructed reality (Berger & Luckman, 1967; DiMaggio, 1988; DiMaggio & Powell, 1983; Dowling & Pfeffer, 1975; Emery & Trist, 1965; Knock, 1982; Parsons, 1956a; Udy, 1970) designed to increase developmental education's capacity for survival (Ahrne, 1994; Meyer & Rowan, 1977, 1983). As Meyer and Rowan (1983) argue, "A sharp distinction should be made between the formal structure of an organization and its actual day-to-day work activities" (p. 23).

In this instance, survival of developmental educational efforts may require camouflaging the system by diffusing it. Table 11 in the preceding chapter lends credence to this notion. It may be noted that the Decentralized Model is the predominant model in Baccalaureate I institutions and is equally represented with the Separate Division and Separate Department models in Research I institutions. Referring to Table 13 in Chapter IV may also help to shed light on this phenomenon. Decentralized locations are more common in these two Carnegie types than in others. For all Baccalaureate I colleges, developmental efforts are located in the academic division of the institution to an overwhelming degree; this may be a function of the liberal arts cultural understanding of the role of faculty and academic departments in the teaching/learning process. In Research I universities, such programs are more often found within the student services division; perhaps this reflects to some degree a sense that these programs are a "service" to students having difficulty in managing the academic requirements in an institution where faculty focus primarily on research. To the extent that liberal arts colleges and highly selective research universities may be the institutional types with cultures in which developmental education may not be well accepted, use of the Decentralized Model in those institutional types makes a great deal of intuitive sense, although it is hardly definitively proven in the results of this study.

If it is true that the different models of formal developmental education structures are related to institutional characteristics, as summarized by the classification variable "Carnegie type", then the presence of differing models appears to integrate well with Kuh's (1995) notion of the college impact model of student development. Kuh argues that the impact of college on students depends more on interactions among student and institutional characteristics than on internal developmental or maturational processes in students. The presence of differing structural models for programs of developmental education may indicate purposeful, or intuitive, efforts on the parts of institutions to match institutional characteristics to students in efforts to gain the

desired impact. Conversely, colleges and universities may not have considered such factors in structuring programs. This is an area that needs further exploration.

The interaction between the system and its environment often takes the form of exchanging inputs and outputs, which in turn enables us to define the system boundary. Often systems are designed in such a way that part of the output becomes an input; this is the notion of system feedback" (Clegg & Dunkerley, 1980, p. 191)

Although the notion that developmental education programs are subsystems of the greater system of the higher education organization underlies this study, this notion is clarified and supported by the emergence of the intervention activity typology (i.e., entry screening, preparation, support, and exit screening). In all four formal structural models, these activities are indicative of interaction between the formal system of developmental education and the environment of the institution as a whole. By noting the points at which inputs or outputs occur, one can trace the articulation of the formal structure of developmental education with other parts of the institution. Therefore, it should be possible to answer Research Questions Five and Six with regard to any particular institution by locating input and output interactions. Figure 8 in Chapter IV, Illustration of Intervention Typology in Action, illustrates how the intervention activity typology might be used to identify articulation points and the direction in which activities are intended to move students at each point.

The intervention activity typology also seems to relate to the Schlosserg-Lynch- Chickering (1989) concepts of students moving into, through, and on from college, as discussed in Chapter II. Chickering (1994) suggests use of these as a set of meaningful heuristics in designing student services and academic advising. When these heuristics are mapped on to the intervention typology, one sees a considerable congruence. "Moving in" is clearly related to entry screening, at whatever point in students' college careers moving in occurs. "Moving through" college involves successfully passing through a series of entry- and exit-screens, both formal and informal. Preparatory and support interventions may be related to facilitating students' moving through college and being prepared, finally, to successfully negotiate the final exit screen and move on.

The utility of the intervention typology to assisting students in moving into, through, and on from college may lie in facilitating identification of the points at which activities occur, in terms of the students' career, in terms of institutional policy and procedure, and in terms of the department, office, or program responsible for them. Identification of sticking points or points at which students, or subsets of students, appear

to have difficulty in moving in, through, and on should have utility for the entire institution. Identification of these points may also help to identify places, times, and the nature of developmental interventions required and for whom they are required. It is both inefficient and ineffective to use a shotgun approach when a stiletto would do. Conversely, it is probably equally wasteful to target small subsets of the student population for separate interventions prepared and carried out in a number of different programs and departments when a number of students need the same intervention; in this instance, the shotgun would be a better choice than the stiletto.

The very modest number of reports of exit screening in the self-studies seems remarkable. Although the author was not alerted to exit screening as an intervention type from the beginning of the study, she reviewed her data after becoming aware of it to see if she had overlooked instances in cases summarized earlier. She found a few instances of interventions that could be so categorized. It is also possible that her notes did not include exit screening interventions on a regular basis before her conscious awareness of them as an intervention type. However, comparison of notes taken after this awareness with those taken prior to it indicates that the same topics are covered in both.

Why, then, is there this remarkably small proportion of exit screening interventions reported in the self-studies? Several possibilities have occurred to the author that might account for this, outside researcher error. It could be that exit screening truly doesn't occur frequently. It could be that institutions rely on outside agencies to serve as providers of exit screening; that is, licensing examinations, state-mandated competency tests, etc., may serve as exit screens. Exit screening might be occurring in parts of the informal structure so that no overt connection with developmental education may present itself to authors of self-studies. It may be that something else altogether is occurring that serves as exit screening that just isn't manifested in self-studies. Each of these possibilities is a potential explanation for the marked absence of reports of exit screening.

However, the author leans toward another explanation. It is also possible that exit screening is so much a part of the activities of higher education that it has become essentially invisible to those working in higher education and, thus, is unreported in self-studies. Course testing, course grades, passing courses and completing required curricula, graduation requirements, etc., are so much a "given" in higher education that

awareness of these as exit screening may have become blunted in participants. This may be on the order of the old saw, "The fish is the last to discover water" and is an area that needs further clarification.

The existence of an informal organizational structure dealing with developmental education, existing as a separate subsystem of the postsecondary educational institution as a whole, has not been previously explored in the literature of developmental education. Consequently, there is very little theoretical or empirical literature to guide this study other than the work in general organizational theory and research. The matter of the informal structure(s), then, is highly exploratory in this study. It should be definitely regarded more as a beginning than as a conclusion to work in this area.

Research questions Seven and Eight deal with the informal organizational structure(s) associated with developmental education. These questions are as follow: (7) Can the pattern(s) [of articulation] be traced to identify an informal developmental education organization larger and more pervasive than the formal developmental education organization? and, (8) Are there distinctive patterns or relationships of informal organization that can be identified? Although these questions cannot yet be answered to the author's total satisfaction, a beginning has been made and further study can be undertaken from this base.

It can now be said with certainty that a large and pervasive informal organizational structure involved in providing developmental educational interventions can be identified in virtually every postsecondary institution having a formal organizational structure involved in developmental education. Developmental educational interventions are identified from self-study information as occurring in at least 27 organizational structures outside the structure formally tasked with developmental education, although in no case were all 27 involved. Examination of Table 14--Components of Sample and Regional Subsample Informal Organizations (Chapter IV) indicates that, in addition to the structure formally designated as being "the" developmental education subsystem, developmental education occurs in academic departments, a variety of counseling programs, intercollegiate athletics, continuing and adult education divisions or departments, residence halls, libraries, and a number of programs designed to provide academic, personal, social, and career support for members of special student populations. Administrative units such as recruiting, admissions, registrar and

records, and financial aid offices also serve as sites for developmental education. In fact, in one notable instance, provision of developmental education is even carried out in the president's office.

The impulse to implement developmental education, whether formal or informal, might rise from similar concerns. However, when underlying commonalities were developed for the informal organizational variables and correlations between them and each of the formal model types are examined, there are no correlations evident at all to help guide examination of the relationships among the two sets of structures. This may be a result of the statistical technique used, or it might be an indication that the formal and informal systems are indeed organizationally discrete subsystems.

As Perrow (1986), Hoy and Miskel (1987) and Abrahamsson (1993) argue, informal organizational structures are rational responses to deficiencies in the formal structure, occurring as results of efforts to remedy those deficiencies. They are adaptive mechanisms, dealing with circumstances unforeseen in development of the formal organizational structures, grafted on departments or programs otherwise tasked in the formal structure (Bensimon, Neumann, & Birnbaum, 1989; Blau & Scott, 1962; Lorsch, 1980; March & Olsen, 1976; Wassenberg, 1977). Viewed from this perspective, not only are the formal and informal developmental organizational subsystems discrete, but the informal system may actually be the reciprocal of the formal system.

The formal and informal systems may be related in their concern that students enter, move through, and exit from the institution with a reasonable probability of success. However, the components of the informal system may have elected to take responsibility for developmental interventions, or interventions with particular subsets of the student population, actually or perceived to be ignored or inadequately carried out by the formal system. As Blau and Scott (1962) note, "...informal organizations develop in response to the opportunities created and the problems posed by their environment, and the formal organization constitutes the immediate environment. ..." (p. 6). The possibility, then, exists that the formal and informal systems involved in developmental education are reciprocals aimed at the same goals and using many of the same interventions. The distinctive pattern, then, of the informal organization in any particular institution may be the reciprocal of the formal organization, recognizable by similarity of interventions. This might explain the intercorrelation of

underlying factors within the informal organization, but lack of correlation between those factors and the formal structural types is yet unexplained.

What, then, can be said of the hypotheses based on the findings of this study and responses to the research questions? Hypothesis 1 states:

Programs of developmental education in postsecondary educational institutions in the U.S. assume differing and distinctive formal and informal organizational patterns.

It is possible to distinguish formal organizational structures tasked with developmental education in every case but one in the sample used in this study. It is possible to classify these formal types into a taxonomy (Separate Division, Separate Department, Decentralized Structure, and Other Formal Structure) that encompasses 91 percent of all cases in the national sample and between 86 percent and 96 percent of all cases in the regional subsamples. With the exception of the Western region, encompassing California and Hawaii, the location of the formal organizational structure tasked with developmental education is far more likely to be within the academic division of the institution than anywhere else. Only in the Western region is it most likely to be located within the student services division. Completely autonomous divisions (those where the divisional leader reports only to the chief executive officer of the institution) are very rare; in most instances of a separate division, the divisional leader has at least one layer of administration between her/him and the chief executive officer.

Informal organizational structures can be identified in 306 of the 313 cases. These are clearly distinguishable as not including the formal structure, although engaging in developmental interventions. They are also more pervasive than the formal structure, especially with regard to administrative offices' involvement. This tends to support Sharma's (1977) suggestions.

The second hypothesis states:

These formal and informal organizational patterns can be identified as a set of structural models, or a taxonomy, derived from examination of institutional self-studies.

As noted above, the formal structure(s) can be readily identified as a set of structural models based on empirical evidence. Therefore, a taxonomy of models is available for the formal systems of developmental education. However, analysis of the data from the sample used in this study does not reveal the presence of a

typology within the informal structures, nor does it reveal a relationship between informal structure and formal structural types that permits development of a more holistic taxonomy inclusive of both formal and informal structures.

Revisiting the Literature of Developmental Education

As noted in Chapter II, Keimig argues that it is difficult to accurately attribute outcomes to learning improvement programs due to commonly, and inappropriately, used research practices. She includes among these use of quantitative measures that are derived from different types of programs and statistically treated as though qualitative differences among programs either do not exist or are not significant and attribution of program outcomes strictly to the learning improvement program being evaluated without consideration of institutional or organizational factors external to the program itself. Use of the typology of formal structures derived from this study should make it easier to classify the formal structures of programs of developmental education and to be able to identify structures of various programs as being members of a recognizable class. This should facilitate both making comparisons for the purpose of study, as well as helping practitioners in evaluating research and evaluation studies for both good practice and utility in their own programs.

Moreover, the results of this study clearly support Keimig's concern about attribution of program outcomes. Although results may be aggregated for purposes of research and reporting, measures of outcome variables are almost always based on studies of individual students. If individual students' only experiences of developmental intervention activities occurred within the confines of the formally-recognized developmental education portion of the entire college or university, such outcomes measures would be a good way to evaluate program effectiveness.

However, as noted previously, almost every formal developmental educational system is accompanied by an informal system. To the extent that students are influenced by both systems, simple outcome measures attributing results to the formal system are bound to be misleading. It seems likely that they would overestimate the effectiveness of the formal system; but, it is possible that poorly conducted interventions by members of the informal system might negatively affect outcome measures. Of course, the same may be true of the

Decentralized Model if all parts are not integrated into outcomes assessment or if constituent parts of the system are not equally positive in their effect(s) on students.

If Kuh's (1994) college impact model is correct, students involved with the formal and informal systems of education are also subject to many other influences in the institutional environment having the potential to affect outcomes measures. When conceived in this way, it is evident that outcome measures that do not take into account the effect of multiple environmental factors, perhaps by identifying those at work in a particular institutional environment and weighting them, cannot accurately reflect the results of developmental interventions--or, likely, any other activities occurring within the institution intended to have an impact on students' development during college.

This is a problem not only for developmental education, but for all of higher education. The current trend toward requiring institutional, programmatic, and student assessment plans by the regional accrediting agencies is a case in point. Another is the contemporary climate on the part of funding sources for postsecondary education to demonstrate fiscal responsibility as a condition of funding. In both cases, assessment and attribution of outcomes using unweighted and noncomprehensive measures appears likely to lead to unwarranted assumptions and decisions.

It is possible that the informal organization involved in developmental education may be a sort of proxy for institutional culture and climate with regard to students. That is, one might hypothesize that the greater the institutional concern for student success, the more pervasive the informal developmental educational structure is likely to be and the more interventions it is likely to provide. While this study does not address these possibilities, it can serve as initial spadework toward their exploration. Given the difficulty of identifying and weighting all environmental inputs on student outcomes, it would be very convenient to have a classification variable to stand in their places.

Wright and Cahalan's (1985) conclusions about the pervasiveness of developmental education in institutions of all types are supported by the results of this study. While it would be presumptuous to generalize from results derived from a purposive sample, it is interesting and perhaps suggestive to do so in support of Wright and Cahalan. In this sample, only one of 313 cases had no developmental education program, as far as

could be determined from self-studies. This represents less than one percent of the sample. If this percentage were to be generalized to the population total, there would be fewer than nine non-specialized, Associate or Baccalaureate degree-granting institutions in the entire United States that have no developmental education program at all.

The data also tend to support Roueche and Kirk (1973), Tomlinson (1989), Boylan et al. (1988), and the synopsis of Exxon findings forwarded by Boylan in personal communication dated November 20, 1995, in their descriptions of both vertical and horizontal, or lateral, organizational structures of developmental education. Of course, their analyses apparently referred only to the formal structures, without consideration of the informal subsystem. Nevertheless, the Separate Division Model seems to be a clear example of vertical organization and the Decentralized Model is clearly a lateral model. It is more difficult to decide whether the Separate Department Model and Other Formal Structure Models is vertically or horizontally structured. The author tends to think of them as being vertical because each instance of either model represents the singular instance of formal developmental organization on its own campus and inspection of organizational charts indicates that almost all of these departments, programs, etc., are depicted as being organized in a hierarchical, bureaucratic manner (i.e., vertically). It is, of course, also possible that the typists who prepared the organizational charts just did them in the way they found most convenient--unlikely, but possible!

While it is also possible that the informal organizational structure providing developmental education might be vertically structured, it is difficult at this point to imagine how that might occur or how it might be fitted into the organizational structure of most American colleges and universities. The author believes the informal organization to be decentralized and lateral in nature because of its dispersion through the organization. On casual inspection by one not thinking in terms of formal and informal organizational structures or subsystems, it would be easy to fail to separate a vertical formal structure closely associated with the lateral informal structure. The author wonders if that has happened in some instances and, thus, overestimation of the proportion of the population depicted as decentralized structures has occurred.

Revisiting Student Affairs Organizations and Student Retention

The interventions categories suggested by Beal and Noel (1980), "academic stimulation and assistance. . .Personal future building. . .[and] Involvement experiences" (pp. 90-91) appear to be examples of preparatory and supportive intervention activities as developed in this study. Interestingly, Bray (1987) suggests that entry- and exit-level student assessment is necessary and conceptualizes this as involving four separate but interrelated systems: the guidance/placement system, the program delivery system, the research/evaluation system, and the assessment system. In this work it seems clear that guidance and counseling, career development, and recruitment and matriculation efforts must be included in these systems, along with more administrative functions such as records and registration, and institutional research or assessment office. These portions of the institution correspond more nearly with the informal subsystem involved in developmental education than the formal (which presumably would be either the formal developmental education system or the academic department in Bray's set of systems) and include not only Beal and Noel's (1980) interventions as part of the preparatory and supportive activities, but also the entry- and exit-screening functions.

Of the seven organizational models for student advising services posited by Habley and McCauley (1987), it is notable that their Total Intake Model is very analogous to the Separate Division and Separate Department Models in many institutions included in the sample. In both, students are entry-screened into a preparatory program and cannot proceed until they meet some predetermined institutional criterion, which serves as an exit screen. Habley and McCauley's Satellite Model of academic advising, wherein academic advising offices are set up and controlled by each academic subunit, sounds remarkably like the Decentralized Model of formal organization of developmental education programs.

Revisiting Organization Research and Theory in Higher Education

Peterson (1991a) writes, "Mapping our theories in relation to organizational phenomena and analytic comparison of models offers useful ways of reducing fragmentation and/or discovering overlaps" (p. 21). He also notes his concern that many of the organizational theories used to propose models for higher education have been borrowed from theorists working in other types of organizations and may not be appropriate to

higher education. Peterson argues that only Weick (1976) and Cohen and March (1974) actually proposed organizational theories specifically designed to be applied in higher education.

The author recently corresponded with Professor Peterson about her conclusion (discussed in Chapter II) that the theories of organization proposed by Weick, (1976), Cohen and March (1974, 1986), Cohen, March, and Olsen (1972) and March and Olsen (1976) are actually theories about the informal organization in institutions of higher education rather than theories of formal organization. In personal correspondence dated April 12, 1996, Peterson agreed, writing, "It [informal organization] is all of the other nonformal patterns - so it is social organization, political patterns, collegial organization, loosely structured systems, organized anarchy, etc."

While discussion of the development and efficacy of theories of organization are not the thrust of this study, except insofar as necessary to identify a theoretical framework to guide and shape the study itself, it seems worth noting that the basic theories and supporting research regarding formal organizational structure do not originate in the research in higher education. There are two consequences of this for the scholar of higher education. The first of these is that students need to be aware that the theories used to explain the formal aspects of organization in colleges and universities are derived from research conducted in very different types of organization and have been mapped onto higher educational organizations. The second is that, to understand these theories and their underlying empirical research and assumptions, it is necessary to read the primary sources, rather than summaries provided in secondary sources.

General Organizational Theory Revisited

General organizational theory formed the greatest obstacle to this study. Not due to lack of organizational theories, and not because no organizational theory appeared to account for phenomena observed in the sample--the difficulty lay in the fact that parts of many organizational theories seemed to account for different phenomena, but no one theory accounted for all. Sunk in a seeming morass of partially useful theories with no solution in sight, the author returned to the literature of organizational theory.

Kuhn's (1970) concept of paradigm incommensurability apparently made it impossible to choose multiple theories to account for the phenomena. Yet, theories abounded and, while many explained parts of the

observations and supported parts of the thrust of the study, none was satisfactory or complete as a general unified theory. After months of reading, the author discovered an author (Driggers, 1977) who resolved the problem and led to a truly Kuhnian paradigm shift for her.

Drigger's chapter discusses the problems with the notion that human beings are unable to simultaneously hold inconsistent theoretical stances. Arguing that Kuhn (1970), Hanson (1958), and Polanyi (1963) present unnecessarily limiting views of the human mind, Drigger advocates use of a trans-theoretic paradigm in organizational research. The point of the transtheoretic paradigm is that individuals can hold apparently conflicting concepts and theories in mind and use relevant parts of them without experiencing debilitating cognitive dissonance. Upon reading this and recognizing that she had been doing that very thing for months, the author was able to use the transtheoretic paradigm with the various general theories of organization, accepting the portions that were useful and temporarily ignoring concerns that the entire theories might appear to be incommensurate.

Use of the transtheoretic paradigm has also been useful in considering the lack of correlation between the formal and informal organizational structures as discussed in Chapter IV. By regarding the formal and informal subsystems as separate parts of one whole (i.e., the organization), it is possible to see that apparently unrelated things do indeed belong together. This is very much in keeping with suggestions (e.g., Driggers, 1977; Hassard, 1990; Morgan, 1990; Pfeffer, 1985; Popper, 1970) that apparently incommensurate aspects of organizations may actually only be incomplete, not fully explored, or fully tested. Because of the initial and exploratory nature of this study, particularly with respect to the informal organization, it seems reasonable that these ideas that will be further explored in the future.

Considering Other Content Analysis

The failure to mention developmental education in mission statements, the persistent association of developmental education with minority students, and reliance on external funding to finance programs of developmental education, taken together, are a chilling combination. When developmental education is not considered to be a mission of the institution as a whole, but rather a special service or program provided for minority students and funded from external sources, lack of institutional commitment seems

apparent. This seems a peculiar circumstance, given the robust history of developmental education in American colleges and universities.

In reflecting upon this convergence of themes the author returns again and again to the notion that association of developmental education with minority students is the important link, the one that explains both the other themes and institutional lack of commitment. Reasoning that developmental education has a history in American education extending from the Colonial colleges to the present, it may be argued that developmental education *per se* is not necessarily considered undesirable. After all, it was acceptable for several hundred years when students were limited almost solely to young, white males. Currently, though, with a broader demographic base and larger number of students enrolling in postsecondary institutions, developmental education is not a part of the formal mission of most institutions in this sample.

This seems quite remarkable in light of institutions' self-reporting of the presence of developmental education, as discussed in Chapter II. This review of their institutional self-studies indicates that a developmental educational subsystem was present in 99 percent of the institutions included in the sample. These same institutions reported from three to over 90 percent of their students required developmental education (see Chapter IV). According to the U.S. Department of Education, in the fall of 1993 the proportion of the enrollment made up of minority students at public four-year institutions was 21 percent, 28 percent at public two-year institutions, 19 percent at private four-year institutions, and 25 percent at private two-year institutions (The Chronicle of Higher Education, Almanac Issue, September 1, 1995). Clearly, even if all minority students participated in developmental education, they would not pose the majority of developmental students.

The persistent association of developmental education with minority students in the self-studies is impossible to explain on logical grounds. Perhaps it is a mental association on the part of the authors of the self-studies that is meaningful for its symbolism, rather than as a reflection of actual conditions on their campuses. When developmental education is perceived as provided to the "other" it may be less likely to be perceived as a threat to institutional culture or to the legitimating myths (socially constructed reality) that

support that culture. This may be akin to decentralization of the formal program of developmental education as a technique to increase survival.

The outcome of omission of developmental education from mission statement, association with minority students, and reliance on external funding for developmental education may be that it is easier to eliminate such programs if they are not seen as being central to institutional mission and serving "majority" students. When external funding is cut or eliminated and there is no institutional ownership of these programs, it may be very easy to view them as marginal to institutional success and eliminate them. There seems to be a trend in this direction in several states (e.g., California, Georgia) at the present.

The problem, of course, is that these programs do not serve only small, readily identifiable groups of underprepared minority students. As noted above, the majority of students involved in developmental education are not minority students. Furthermore, the total of preparatory interventions and the total of supportive interventions are nearly equal, suggesting that preparation and support are about equally common interventions. Elimination of programs may have detrimental effects on many students working on all academic levels in colleges and universities.

Implications for Practice and Policy in Developmental Education

Developmental education is vastly underreported in terms of the number of students and professionals involved, in terms of sites where it occurs, and in terms of effects. When reporting is limited to the formal organization, or even to the formal organization plus parts of the informal organization, the number of people and the amount of institutional and public resources involved may be seriously underestimated. In an era when many postsecondary institutions are being advised to "do more with less," local institutional managers need accurate information about both use of resources and outcomes to achieve the best possible cost-benefit ratios. In the absence of accurate information about and from the formal and informal systems, this is impossible.

Developmental education is for all students, not just the "other." By definition, half of all students in any college, program, or class fall below the median in that college, program, or class. No individual is equally good at everything and most people probably find themselves to be "developmental" in some academic subject at some time. Failure to recognize these facts encourages underreporting. It may also add to the perception that

developmental education is a marginal activity in many colleges and universities, one not actually necessary to the institutional mission. It seems important that those who administer developmental programs battle this perception by disseminating information about the extent of their programs and demographic information about participants.

The practices (intervention typology) of developmental education are remarkably consistent throughout the last 300 years or so. Given the extent of change in higher education and its constituencies since the Colonial era, this consistency seems remarkable evidence that developmental education is a rational, adaptive, and productive practice in American higher education. Given this, the wisdom of eliminating or severely reducing access to developmental interventions without study of the long- and short-term consequences must be questioned.

State and federal initiatives to limit developmental education may, if carried out extensively, have wildly unintended outcomes. Four-year colleges and universities may find their entering freshman classes precipitously decreased for several, if not many, years. Smaller enrollments might mean empty residence hall rooms and unsold meal plans, fewer sections of introductory courses, and smaller numbers of students requiring advisement, counseling, and orientation, among other changes. These decreases might yield less income, fewer jobs on campus, and more senior faculty teaching entry-level undergraduate courses. In smaller towns, loss of income due to the decline in student, faculty, and staff populations could have an adverse effect on local economies. Two-year institutions, conversely, might be overwhelmed with developmental students who otherwise would have attended four-year colleges and universities, with the attendant problems that situation could cause.

Developmental students are notorious among professional developmental educators for needing individual attention and time on task. One of the outcomes of eliminating developmental education in four-year colleges and providing it only in two-year colleges, in the short run at least, seems likely to be overrunning the resources available to developmental students enrolled in those colleges, leading to less personal attention and, perhaps, limits to time on task. Under those circumstances, a smaller percentage of developmental students

may successfully complete postsecondary educations. There are economic and social advantages to education that would go unrealized under those circumstances.

There was little evidence in the self-studies that developmental education program administrators actively saw that information about their programs was distributed to high school counselors and potential students along with other recruitment materials. Although potential students and those advising them about college choice are typically deluged with polished recruitment materials, developmental education does not seem to be included in these. Information about preparatory and support services has the potential to act as an effective entry screening mechanism in directing students to colleges and universities with programs in place to meet their needs and contribute to their college success.

Information is also needed to make appropriate plans to evaluate developmental programs. Attribution of outcomes and measures of effectiveness and efficiency are meaningless, perhaps even dangerous, if inaccurate. Educational managers need to begin identifying the formal and informal structures in their institution and assessing their inputs and outputs both quantitatively and qualitatively. Program evaluation is an integral part of the assessment plans now being required by the regional accrediting agencies, yet there seems to be little awareness of the existence of informal organizations or their effect(s) on student or program outcomes.

Similarly, those who study colleges and universities must account for not only the formal organizational structure, but also the informal organizational structure(s), if they wish to develop meaningful data or to arrive at useful conclusions and recommendations for practice. This may complicate the practice of educational research, but educational organizations and practices are complex. As a recent tribute to Leigh Burstein put it: "Education is a complex, multilevel, highly contextualized system, and any convenient oversimplification of the system is likely to misinform policymakers, practitioners, and researchers alike" (Shavelson & Webb, 1995, p. 276).

The regional accrediting agencies are unmined repositories of information for scholars interested in higher education. Institutional self-studies are remarkably forthcoming about almost any topic one might wish to explore and, increasingly, agency collections are becoming comprehensive of all self-studies prepared.

Furthermore, the assessment plans now in development for most institutions are likely to be even better sources of data as they are activated and information is gathered and reported.

Member institutions go to great effort to provide clear, accurate, and accessible information in their self-studies. Not only is this information valuable to outside researchers, but it could be of immense value to the member institutions themselves if the staffs of the regional accrediting agencies used this information to study aspects of higher education and prepared regular reports for release. Not only their member institutions but the world of education as a whole could benefit from reports and journal articles released to the public. Reports using aggregated data need not embarrass member institutions, while adding to available knowledge.

Finally, distributions of institutions by Carnegie type across the six accreditation regions do not appear to be homogenous, even though, in this study, their aggregated information closely approximates national sample data. Had the data not been aggregated separately by geographical region, the lack of homogeneity would not have been evident. This may be taken as a cautionary tale for those who conduct research studies and those who use the results of those studies to guide practice: In higher education in the United States, national averages and proportions hold for the nation only. None of the six regional accrediting agencies' populations is identical in profile to that of the nation as a whole and norms do not necessarily hold across regions.

Suggestions for Further Study

A number of possibilities for further study have occurred to the author during the course of executing this study. However, only a few that seem most important are discussed here. As this study was exploratory, it would be wise to replicate it as soon as possible, possibly using the 1994-95 and 1995-96 academic year self-studies. Alternatively, it might be well to replicate it using a sample matched to both national and regional institutional populations. This sort of study lends itself well to longitudinal approaches and it could be very useful in catching trends to compare the same institutions with themselves and with each other at ten year intervals as they submit new self-studies.

The matter of informal organizational structure(s) involved in developmental education has only begun to be explored in this study. Now that there is evidence that an informal organization actually exists,

work should go forward in studying this area. The structure and interrelationships between components of the informal organization need additional clarification, as does the relationship of the formal and informal organizations.

There is no authoritative guide available to assist institutional decision-makers, funding sources, or program evaluators in deciding which organizational structures or interventions are most likely to yield desired outcomes in a particular college or university. To develop such a guide, it will be necessary to link information such as the findings of this study with the findings of others. In addition to linkage with outcomes measures from developmental education programs, linkages will need to be made--at least--with findings of studies clarifying institutional culture and climate, the characteristics of students and faculty members, and funding. The intervention activity typology should be more fully explored and tested with other data.

Returning to the Opening Metaphor

If developmental education is like a college built without sidewalks, then the time has indeed come to begin to follow the paths and lay the groundwork for building better connections. That has been the principal purpose of this study. Some of the pathways are clear and easily followed: We can identify a taxonomy of four structural models of the formal organizations with only a limited number of unclassifiable instances. We can definitely say that there is an informal organization associated with provision of developmental education and we can identify at least some of its component parts in many colleges and universities. We have discovered a new way of classifying intervention activities and we can use that taxonomy to guide us in discovering new ways or improving ways of assisting students to be successful in their postsecondary educations. We can use that taxonomy as a tool for identifying articulation between the formal and informal organizational systems involved in developmental education.

The work is not done, however. We can improve and refine our understandings of both the formal and informal organizations. There are other paths that have not been followed yet to see where they lead and whether they connect with the ones identified here. Finally, conditions change in the postsecondary environment and some paths become more heavily used, some are abandoned, and new ones are created. The

task of the educational researcher, like that of the cartographer, is never complete because the terrain is constantly changing and must be remapped often if accuracy is to be maintained.

APPENDIX A
LETTER OF PERMISSION & GLOSSARY

APPENDIX A

LETTER OF PERMISSION & GLOSSARY

H & H P U B L I S H I N G

OWNED AND OPERATED BY EDUCATORS

Oct. 4, 1995

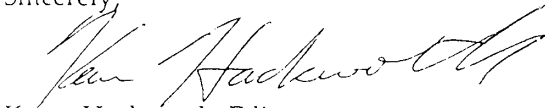
Gail D. Dantzker
5029 Church Street
Skokie, IL 60077-1255

Dear Ms. Dantzker,

In response to your inquiry of 9/18/95 regarding permission to use the Glossary (pp. 163-174) of the NADE Self-Evaluation Guides, permission is granted for the use stated and the purpose stated.

Your dissertation sounds interesting and very valuable to developmental education. I wish you much success.

Sincerely,



Karen Hackworth, Editor



1231 Kapp Drive
Clearwater, FL 34625
(813) 442-7760

A Glossary of Developmental Education Terms

Nearly every definition contained in this glossary was compiled by the Taskforce on Professional Language for College Reading and Learning (College Reading and Learning Association, December, 1990 version). In order to assist users of the National Association for Developmental Education *Self-Evaluation Guides*, some additional definitions have been added since March, 1992. These definitions are identified by “***” preceding them in the glossary.

academic competencies

see basic academic skills

academic skills

see basic academic skills

**** academic rank**

a category in an institution's classification system of professional personnel.

**** adjunct instructional programs (AIP)**

those forms of group collaborative learning that accompany a specific course to serve as a supplement for that course. These AIP activities occur outside of class. Generally student participation is voluntary. Some AIPs award academic credit for student participation. The most common forms of AIPs are Supplemental Instruction (Kansas City Model), study cluster groups, and group problem-solving sessions.

advance organizer

1: short introductory text or graphic material presented to a student prior to a learning experience to enable him/her to structure the knowledge and put in perspective. 2: a learning strategy developed by D. Ausubel in which a passage is written to enhance the learning of other material and is presented prior to the other material. NOTE: The advance organizer may be written to draw parallels between something the reader already knows about the new material; or it may restate the new material at a different and often higher level of abstraction, generalizability and inclusiveness. (Harris & Hodges, 1981).

**** ancillary facilities**

institutional units which exist to provide support for all units across the institution.

**** appropriate academic credential**

certificate stating that the holder has attended a properly accredited post-secondary institution and completed a curriculum in the academic discipline he/she is instructing or supervising.

**** appropriate professional organization**

a properly chartered group of professionals involved in a particular field of study designed to provide a forum for group members to exchange ideas, deepen their knowledge of their field and to promote goals of the organization.

assessment

1: the process of applying systematic formal and informal measures and techniques used to ascertain students' current competencies and abilities. 2: the process of determining students' strengths and weaknesses in cognitive and affective areas for the purpose of generalized placement. 3: the act of assessing, or taking a measurement, i.e., counting, rating, estimating the amount of a skill, ability, knowledge, etc., possessed by an individual. Assessment should be as objective as possible (value-free), as opposed to EVALUATION which suggests that valuing has been added. Assessment does not assume, in advance, what is good, worthwhile, or desirable. In analogy to science, assessment is observation. Although objectivity is always relative, it is important to attempt to separate the measurement from the interpretation of its meaning.

associating

1: the process of connecting a written symbol with its meaning referent, usually a spoken word, in beginning reading. 2: the process of connecting what is presently being read to prior reading and/or experience. (Harris & Hodges, 1981).

backwash

the desirable or undesirable effect a test of particular skill has on the acquisition of that skill.

basic academic skills

activities such as reading, writing, calculating, and reasoning that enable people to communicate and learn; considered to be essential to learning across the curriculum, but not always specifically taught in the regular academic curriculum. COMMENT: These skills are often legally defined.

**** behavioral change**

a difference in performance or attitude that is observed and documented following an intervention activity.

**** collaborative learning**

planned, purposeful activities in which students work together and learn from each other. The focus is primarily on developing mastery of the academic content material. Compare with COOPERATIVE LEARNING.

college level

the level of skill attainment, reasoning ability, etc., associated with/required by courses of study designed to lead to a baccalaureate degree. Also known as "transfer-level" in programs of a two-year institution.

college level students

those students possessing the necessary prerequisite skills, reasoning ability, etc., so that they are developmentally ready to pursue courses of study leading to a baccalaureate degree or those applicable for transfer to such a program.

college reading

1: any formal reading/studying instruction which occurs at a post-secondary institution where the goal is to enable students to become proficient in processing and learning college level material both visually and aurally. 2: readings students are expected to do to complete their college assignments (textbooks in all disciplines, supplementary texts, fiction & non-fiction, library books and materials, syllabi, and other course handouts, and examinations). To improve college reading, students need to acquire insights and strategies to improve their reading comprehension, speed and critical skills.

college reading skills

1: skills needed for reading of college reading materials including acquisition of insights and strategies to improve reading comprehension, speed, and critical skills. 2: those reading skills which are required to decode, comprehend, analyze, and criticize information contained in college level textbooks. Inherent in college level reading skills are rate, flexibility, fluency, and a broad enough vocabulary so as not to interfere with text understanding. Not necessarily included is knowledge of specific content-area vocabulary.

college students

learners matriculated into a post-secondary institution.

**** community agencies**

publicly and privately sponsored organizations outside of institutions of higher education which can serve as resources for the institution and its students.

compliance

a term used in assessment to denote the extent to which a particular guideline is followed. Compliance represents the degree to which a program meets the guideline.

comprehension monitoring

the active cognitive process of evaluating and regulating one's comprehension while reading (a metacognitive skill).

concentration

1: ability to become absorbed in a task and continue in it despite distractions (Page & Thomas, 1980). 2: the conscious and intensive centering or focusing attention on a limited object or aspect of an object, task or problem (Eastridge & Price, 1969).

**** cooperative learning**

In addition to students participating in planned, purposeful activities in which students work together and learn from each other, the students also develop their social skills. Compare with COLLABORATIVE LEARNING. The six critical features of cooperative learning include: (1) positive interdependence; (2) individual accountability; (3) appropriate rationale for groups; (4) structured student interactions; (5) teacher as facilitator; and (6) attention to social skills.

critical reading

the process of questioning and making judgments in reading; evaluating ideas, recognizing assumptions, seeing relationships in form and content, reading analytically and distinguishing fact and opinion.

**** cultural differences**

various behavioral and attitudinal traditions based on an individual's or a group's prior social experience.

cultural literacy

1: awareness of facts, themes, ideas, and other information comprising the heritage of a given nation, culture or ethnic group. 2: the cumulative database of knowledge a reader brings to the current reading exercise that either permits or prevents the reader from questioning, evaluating and/or associating the material at hand.

**** cultural sensitivity**

acting in a manner that demonstrates respect for the background of all individuals.

developmental

1: in the normal/expected sequence of learning. Usually used in counterdistinction to accelerated and/or remedial learning. Use of the term in college education assumes/takes cognizance of the notion that there is a gap between "high school" and "college" that needs to be filled in for many students. The claim is, thus, that these students need to learn skills they have not previously been taught (in high school) and that the fault is not with their ability, but with their preparation. Compare with REMEDIAL, a term that suggests that skills have been taught, but not learned (or not learned correctly), and that, therefore, the student must be retaught. Remedial instruction may be a tool used in a developmental program. The use of the term developmental in education has its origins in psychology, which, in turn, took it from medicine. Development is defined as the process of growth, unfolding, activation, etc. Thus, expected "normal" growth is developmental. In medical terms, there can be developmental "delay," as well. 2: Instruction designed to improve a student's competencies in the basic skills areas and allow increased mastery over the student's environment to facilitate effective learning and communication.

developmental courses

1: any course or series of courses designed to build upon existing skills in order to prepare students for more advanced academic work. 2: any course organized according to the principles of cognitive and student development and designed to promote both affective and cognitive development.

developmental education

1: a sub-discipline of the field of education concerned with improving the performance of students. 2: a field of research, teaching, and practice designed to improve academic performance. 3: a process utilizing principles of developmental theory to facilitate learning.

developmental educators

1: educational professionals who work in programs designed to enhance the academic and personal growth of students. 2: educational professionals who employ the principles of cognitive and affective development in designing and delivering instruction.

**** developmental profile**

description of an individual's academic and/or cognitive competencies.

developmental programs

1: an organized system for delivering instruction, academic support, and personal development activities to college students. 2: any program designed according to the principles of developmental theory for the purpose of promoting intellectual and personal growth.

developmental reading

1: reading instruction in which the primary purpose is to build upon existing reading skills. 2: any reading instruction at the college level that is not remedial and includes the study skills and strategic learning devices necessary to handle college level material efficiently and effectively. Most college students would find this instruction beneficial since they have not been systematically exposed to a process for studying.

developmental students

1: students assessed as having potential for success if appropriate educational opportunities are provided. 2: students who, while meeting college admissions requirements, are not yet fully prepared to succeed in one or more introductory courses.

diagnosis

1: the process of determining students' specific strengths and weaknesses in order to arrive at a particular prescription for treatment. 2: (a) the act, or result, of identifying disorders from their symptoms. NOTE: Diagnosis technically means only the identification and labeling of a disorder, but as the term is used in education, it often includes the planning of instruction based on the evaluation of the problems and considerations of their causes. There are different levels of diagnostic study, ranging from a casual observation that a student appears to be nearsighted to a clinical detection of aniseikonia; from a vague realization that a student is having difficulty in reading to an astute analysis of the process by which he gains meaning, significance, enjoyment, and value from printed sources — R. Strang. (b) the classification of people or things into established categories, as an educational diagnosis. (c) negative diagnosis; the identification of a disorder by the recognition of what is not. A diagnosis of dyslexia is usually a negative diagnosis; i.e., there is no alternative explanation of the reading difficulty (Harris & Hodges, 1981).

elaborating

1: the formation of a relationship between previously learned information and new, unfamiliar material by means of mental images or verbal elaborations, such as inferences and analogies (Anderson & Armbruster, 1984). 2: (a) the process, or result, of expanding in detail or complexity a simpler object or ideas. "Your theme is excellent but needs elaboration." (b) the "extra processing" one does that results in additional, related or redundant propositions, the better will be the "memory" for the material processed — L. Reder (1980). (Harris & Hodges, 1981).

**** emergency crisis management procedures**

established, step-by-step directions for dealing with emergencies.

**** early exit**

a student's leaving a program or activity before its scheduled end; such leave usually based on early mastery of skill that is documented through an assessment measure.

encoding

1: (a) process whereby a message is transformed into signals that can be carried by a communication channel; (b) process whereby a person transforms his/her intention into behavior that will serve as signal in a communication system — usually oral or graphic language, but gestures, signs, etc., may also serve; may involve several steps; for example, a person writes a telegram (first encoding) which is in turn transformed by another into electric signals (second encoding)(Good & Thomas, 1945). 2: (a) to give a deep structure to a message. Encoding starts with meaning . . . you start out with a message; then you assign a deep structure (Harris & Hodges, 1981).

**** ethical standards**

those criteria that provide guidelines for behaving in a manner that is fair to all individuals and ensure that data is collected, recorded and reported with integrity.

evaluation

1: the process of establishing the utility or value of a particular activity or program. 2: the decision-making process of interpreting test/assessment results, deciding what is "good," or "good enough," "effective," etc. Thus, in EVALUATION, an important component is subjective and philosophical. 3: making data-based judgments and decisions about student academic skills on entry or exit from college, student progress and/or program effectiveness.

**** evaluation standards**

criteria that have been established to measure the effectiveness of an activity or program.

**** fair employment practices**

adherence to laws prohibiting employment discrimination because of race, color, gender, national origin.

**** federal education rights and privacy act**

a federal ruling that makes it illegal to disclose information regarding an individual without obtaining that individual's permission.

flexible reading

strategies for varying rates based on the type of reading (skimming, scanning, studying, etc.) and the reader's familiarity with the content.

**** full-time faculty**

teachers who fulfill the full range of responsibilities per academic year as established by the institution.

graphic post-organizers

a visual map, outline, graph, chart, etc., that shows major concepts and relationships that were established in the text.

higher-level reading skills

1: those strategies that one needs to apply to text when processing material at the cognitive levels of analysis, synthesis or evaluation. 2: ability to abstract high level thinking from written text.

higher-level thinking skills

processing material at the cognitive levels of analysis, synthesis, or evaluation; conceptualization.

**** human development**

the total span of life cycle from birth to death with the notion that individuals are in a constant process of growth and change (Shafritz, Koeppel, & Soper, 1988).

**** human subjects research**

investigations (other than normal evaluation of student learning) involving students as participants.

**** institutional educational program**

an organized set of [curricula and coursework] designed to produce a particular result or set of set of results (Shafritz, Koeppel, & Soper, 1988).

**** instructional materials**

resources in various formats (printed, audio-visual, computer-based) to be used by students to improve their academic competence in their specific educational program.

**** instructor**

any individual who performs a teaching function. This could be in any setting (peer, professional, full, part-time).

**** in-service education**

job-related instruction and educational experiences made available to employees [by the institution] to improve knowledge and skills of employees, usually offered during normal working hours (Shafritz, Koeppel, & Soper, 1988).

interacting with the text

1: building meaning from text through predicting, questioning, evaluating and analyzing. 2: attending for comprehension of written material.

**** joint faculty appointments**

professional personnel hired to provide instructional services in developmental as well as non-developmental programs.

**** job functions**

a written description of the skills, [duties], preparation required, and the physical demands of a job. (Hopke, 1968).

learning

acquisition by individuals of skills, information, values and attitudes (both intentionally and unintentionally), as well as demonstrated ability to apply or transfer to new situations.

learning assistance

1: supportive activities, supplementary to the regular curriculum, that promote the understanding, learning and remembering of new knowledge, remediation for prescribed entry and exit levels of academic proficiency, and the development of new skills. May provide study skills instruction, tutoring, reviews, supplemental instruction, study groups, special topic workshops, exam preparation, and various types of self-paced instruction, including computer-assisted instruction. Usually provided in a center that can be staffed with professional, paraprofessional and/or peers. 2: programs which include instruction and activities for developing learning skills . . . study skills, reading, mathematics, writing, critical thinking and problem solving. Subject matter tutoring, graduate exam preparation courses and time management workshops may also be offered (Materniak & Williams, 1987). 3: programs that enable students to develop the attitudes and skills that are required for the successful achievement of their academic goals. These programs are based on research findings in the areas of teaching, learning, and human development.

Learning Assistance Center

1: (a) an organized, multifaceted program providing comprehensive academic enhancement activities outside of the traditional classroom setting to the entire college community; (b) a centralized area wherein tutorial and study skills assistance is provided. 2: a program on campus which offers help to any student experiencing academic difficulties. Assistance is usually individualized but can be either remedial or developmental in nature; usually ancillary to a remedial and/or developmental program or course.

**** learning characteristics**

the way in which an individual receives and processes new information (Shafritz, Koeppel, & Soper, 1988); cf. "learning styles," Learning Assistance Glossary.

learning skills

1: methods taught or student-discovered which permit the student to achieve understanding. 2: communication, organizational and study skills which can enhance learning.

learning styles

1: a combination of affective and cognitive processes and preferences governing individual approaches to the acquisition of knowledge. 2: a preference for a particular instructional methodology.

**** liability exposure**

the breadth of damages for which an institution can be held legally responsible.

literacy

1: the ability to read. 2: the ability to read and write a language, and sometimes to perform arithmetic operations. 3: the possession of reading, writing and sometimes arithmetic skills to a degree thought desirable by a society. 4: competency in a technical field, as computer literacy (Harris & Hodges, 1981).

long-term memory (LTM)

1: that aspect of memory lasting over a long period of time that has great capacity and has structured, or chunked, information into patterns. Long term memory occurs when a person can remember the gist of a story long after it has been read, and from that can work out details. NOTE: LTM is assumed to develop from continued or repeated short-term memory episodes. This process may result in some telescoping or distortions of the original matter (Harris & Hodges, 1981). 2: relatively permanent stored information which is capable of retrieval through association (Bushy & Andrews, 1980).

lower-level thinking skills

processing material at the cognitive levels of knowledge, comprehension or application.

mapping

1: a process of graphically webbing a central idea to all its parts so that one can follow their relationships and discuss, defend or disagree with them. 2: visual representation of major concepts and relationships to supporting ideas. 3: a non-linear method for summarizing and visually representing important relationships among ideas in a text, prepared after reading.

**** measurable objectives**

those goals which have been expressed as specific learning outcomes and can be objectively assessed.

**** media services**

that unit of an educational institution that provides consultation and equipment to faculty for the purpose of developing and utilizing supplemental instructional materials.

**** merit increases**

pay increment based on quality of performance; criteria should be established prior to performance and increment awarded following documented performance review.

**** mentoring program**

a set of activities for providing information about an institution's mission, programs, and procedures to professional and para-professional personnel new to the institution.

metacognition

knowing how one learns (see metacomprehension).

metacomprehension

1: the awareness of and conscious control over one's own understanding or lack of it. 2: the ability to analyze and monitor one's level of understanding or performance.

**** minority students**

those individuals who have been identified as not part of the majority in a particular environment.

motivation

1: arousing or stimulating, in a student, an interest or inward urge to perform a task willingly and to complete it with sustained enthusiasm (Eastridge & Price, 1969). 2: (a) psychologically broadly considered, the process of arousing, sustaining and regulating activity, a concept limited to some aspect such as the energetics or behavior or purposive regulation. 3: the practical art of applying incentives and arousing interest for the purpose of causing a pupil to perform in a desired way; usually designates the act of choosing study materials of such a sort and presenting them in such a way that they appeal to the pupil's interests and cause him/her to attack the work at hand willingly and to complete it with sustained enthusiasm; also designates the use of various devices such as the offering of rewards or an appeal to the desire to excel (Good & Thomas, 1945).

networking

purposeful collaboration of individuals with common interests and/or roles.

**** non-developmental students**

those students not identified as needing formal academic support to succeed in their college coursework.

organizational patterns

the framework(s) used by an author to connect text for the purpose of effectively developing the topic of discourse. May include such patterns as cause-effect, comparison-contrast, etc.

**** orientation program (for part-time faculty)**

a meeting or series of meetings held at the beginning of one's employment to provide information related to both job performance/responsibilities and logistical matters.

**** outreach activity**

any effort by an institution (such as a college or university) to provide education, guidance or other services to those not in the immediate proximity of the facility (Shafritz, Koeppel, & Soper, 1988).

**** part-time faculty**

teachers who occupy positions that require less than fifty per cent of full-time service and whose appointment includes only limited or no fringe benefits.

placement

the assignment of a person to an appropriate course or educational program in accordance with his/her aims, capabilities, readiness, educational background, and/or aspirations. Placement can be based on previous experiences, scores on admissions or entrance tests, or tests specifically designed for placement purposes.

para-professional

a person who has been trained to perform specific, limited responsibilities in a Learning Center setting under the guidance of a trained professional. These responsibilities may include such activities as tutoring in a particular subject matter, monitoring progress through instructional materials, record-keeping, development of materials for use in the Learning Center, etc.

power test

a test of a particular skill having no time limits.

pre-professional

a para-professional who is enrolled in a prescribed course of studies which lead to a degree and will qualify the individual to assume full responsibility for instruction and direction of learning of students in a Learning Center of similar program.

pre-reading

1: the cognitive process used by a reader to gain an overview of the text and to determine how that text fits into his/her own schema. 2: a quick survey, prior to formal reading, giving specific attention to title, introductory and concluding paragraph, locating quickly the main divisions and subdivisions, not any parts set off by contrasting print, etc., find out something about the writer, review the thesis and general organization of the whole article, but no attempt at full comprehension (Eastridge & Price, 1969).

**** professional development activities**

opportunities for personnel to deepen their knowledge of their field through research, post-graduate work, attendance at appropriate professional conferences or institutes, or similar pursuits.

**** professional liability coverage**

a plan designed to provide legal and/or monetary support for damages claimed against any faculty/staff related to their carrying out professional responsibilities.

**** qualified faculty**

those individuals who meet the written, established criteria for a particular position.

**** qualitative data**

information usually gathered through an inductive research design and analyzed in a more subjective manner than that collected through quantitative research.

**** quantitative data**

information usually gathered through a deductive research design that is analyzed objectively and can be tested for statistical significance.

reading process

1: repertoire of strategies to construct meaning from written text; includes use of textual as well as non-textual (e.g., prior knowledge) cues. 2: the act of reading, involving primarily the recognition of printed symbols and the meaningful reaction of the reader to these symbols; such reaction may include the reader's interpretation, appraisal, and attitudinal responses as determined by his/her purposes and needs (Good & Thomas, 1945).

reading strategies

1: techniques which facilitate the construction of meaning from text by the reader. 2: effective techniques for abstracting comprehension from written message.

NOTE: may include such strategies as clarifying purposes for reading, identifying important aspects of the message, monitoring comprehension, and recovering from interruptions (Brown, A. L., 1981).

**** regular promotional increases**

improved financial remuneration for professional personnel moving to a higher academic rank.

remedial

instruction designed to remove a student's deficiencies in the basic entry or exit level skills at a prescribed level of proficiency in order to make him/her competitive with peers. COMMENTS: The assumption is that students have already been taught (or at least been exposed to learning), but that the teaching was not effective and must be repeated.

remedial programs

a group of courses and/or activities to help learners needing remediation to achieve basic skills in their identified deficit area.

remedial reading programs

1: college reading programs designed for those students who have not yet mastered the basic decoding and comprehension skills necessary to begin effectively reading college level texts. 2: specialized reading instruction for students who do not meet entry or exit levels of a prescribed proficiency.

remedial students

students who are required to participate in specific academic improvement courses/programs as a condition of entry to college.

review

reexamination of material previously presented or studied (Good & Thomas, 1945).

scan reading

See SCANNING

scanning

strategy that leads the reader to rapidly peruse text to find very focused information (i.e., specific words, ideas) and to disregard any text that is not related to the focus of interest.

schemata/schema

1: the framework for organizing new information and relating it to existing knowledge which the individual brings to the learning situation. 2: the pattern, plan, design or system an individual is able to discern from the available information.

short-term memory (STM)

limited capacity memory of short duration which dissipates with time or is replaced by new information (Bushy & Andrews, 1980).

skills(s)

behavior(s) that can be developed through instruction and practice. See also specific skills: ACADEMIC, BASIC, HIGHER LEVEL READING, STUDY, THINKING.

skimming

1: a method of rapid reading in which the reader attempts to get the general idea of the passage rather than attempt to read the complete text (Eastridge & Price, 1969). 2: (a) a method of reading according to which the reader looks for certain items but does not read the complete text; (b) a method of reading according to which the reader attempts to get the general meaning without attention to detail (Good & Thomas, 1945). 3: a method of reading in which the reader constructs the general idea of the passage with little focus on supporting details.

**** special populations**

groups deviating from the norm through cultural differences, physical handicaps, emotional disturbance, mental retardation, mental gifts or talents, or learning characteristics (Shafritz, Koeppe, & Soper, 1988).

specialized vocabulary

1: words peculiar to a specific discipline, or more general words used in a particular way within a discipline. 2: names applied to concepts associated with a particular discipline or subject, e.g., chemical elements.

speed reading

strategies for increasing speed while reading without interfering with comprehension. See also: FLEXIBLE READING.

speed set

a rate-of-work mind set purposefully executed to complete a task during the allotted time instead of the time the task demands.

speeded test

a test whose time limits do not allow all candidates to complete the test. (The degree of speededness assigned to a given test is relative to the completion rate or near completion rate of a norming population.)

strategic learning

the selection and application of appropriate strategies/ procedures from a repertoire which can accommodate a variety of learning situations.

students

learners.

study habits

a person's usual ways of applying study skills (or approaching a study task), effective or otherwise (Harris & Hodges, 1981).

study reading

1: a process applied to the text by a student in order to learn the material. The process may include, but is not limited to annotating the text, previewing the chapter, summarizing or outlining the main points, and paraphrasing and reciting the material. 2: a student's usual way of getting meaning from what (s)he reads. 3: reading for the specific purpose of absorbing and remembering information for which one will be held accountable.

study skills

teacher-taught procedures thought to assist students in the process of acquiring knowledge.

strategy

a careful plan or method, an approach, a way of looking at something, as opposed to a specific set of skills or steps. The emphasis is on the whole and on integration. A strategy is internalized and flexible, not rigid.

study strategies

behaviors and procedures that, when thoughtfully and appropriately applied to learning tasks, improve the acquisition, understanding and application of knowledge and skills. May include study skills such as time management and organizational skills, regular, planned study and effective concentration, and well-developed communication skills to send and receive information in an academic setting.

studying

activities directed to understanding, learning material for problem-solving, acquiring knowledge, or developing skills, and remembering what has been learned.

summarize

to condense material so that the original focus is objectively communicated and the minor details are deleted.

**** Supplemental Instruction**

SI targets historically difficult academic courses and provides regularly-scheduled out-of-class peer facilitated collaborative learning sessions. These sessions contain both course content review and modeling and practice of study strategies. SI is one example of an adjunct instructional program. See also ADJUNCT INSTRUCTIONAL PROGRAM, COLLABORATIVE LEARNING.

**** support areas**

institutional services [other than regularly scheduled classes and labs] designed to assess and improve the [academic and emotional] well-being of students (Shafritz, Koeppel, & Soper, 1988).

surveying

1: (noun) an overall examination of performance, as a reading survey (Harris & Hodges, 1981). 2: (verb) to make a comprehensive overview, as survey a textbook or chapter (Harris & Hodges, 1981).

**** teaching/learning process**

that planned program for which there is expected teaching and expected learning.

**** teaching load**

[a professional employee's] workload defined by number of students instructed, number of periods of classroom instruction per week, or number of different courses taught or a combination of the above (Shafritz, Koeppel, & Soper, 1988).

testwiseness

the ability to correctly answer test questions on some basis other than knowledge that the questions were designed to measure (Ferrell, 1972).

thinking skills

1: the basic intellectual tools used for the acquisition, processing, organization and application of knowledge. 2: a series of strategies for improving content mastery.

time-critical test

a timed test, scored without correction for error, that encourages score-inflating testwise strategies and/or elicits a negative or interfering level of anxiety.

transfer

the ability to apply, strategically and independently, learning from one situation to a new situation (for example reading or study skills to college level materials from a variety of disciplines).

tutoring

1: one-to-one instruction that explains, clarifies and exemplifies a topic and, ultimately, promotes independent learning. 2: (a) individual or small group activities designed to supplement formalized instruction; (b) an individualized instructional technique.

visual imagery

1: the process of visually imagining how something looks from a word description (Eastridge & Price, 1969). 2: the process, or result, of mentally picturing objects or events that are normally experienced directly. See also: IMAGERY (Harris & Hodges, 1981).

writing process

consists of prewriting where the writer organizes thoughts and focuses the topic; writing where the ideas are initially developed in a connected text; and rewriting where the text is edited and proofread.

APPENDIX B

SUMMARY OF SELF-EVALUATION GUIDE

APPENDIX B
SUMMARY OF SELF-EVALUATION GUIDE

Table 18--Organizationally-Oriented Statements from the Mission, Goals, and Objectives Portions of Self-Evaluation Guide

<u>Self-Evaluation Guide</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Mission, Goals and Objectives	<p>IB.1d: supporting the institution's academic standards</p> <p>IB.1j: providing learning support to meet the needs of returning adults, culturally diverse students, the physically challenged, first-generation college students, and other at-risk student populations</p>	<p>IA.1: develop transferable study strategies that students can use in all their classes</p> <p>IA.2: develop affective domain skills. . .that enable students to make a better adjustment to the college learning environment</p> <p>IA.4: be an available resource for the faculty and staff in the improvement of classroom teaching and other instructional activities</p> <p>IB.1: have. . .goals and objectives that are consistent with the stated mission of the institution</p> <p>IB.2: goals are reviewed and disseminated to staff, faculty, and administrators on a regular basis</p>	<p>I.1: support the institution's written mission statement</p> <p>I.4: support the goals of the respective departments within the institution as well as the institution's academic standards</p> <p>I.7: provides support for the total college curriculum by teaching learning strategies that can be transferred to other coursework</p>

<p>Mission, Goals and Objectives, cont.</p>		<p>IB.3: size of [program] is commensurate with institutionally assessed academic needs of population IB.4: supports academic standards of respective departments as well as the institution IB.7: attached to specific courses where it has the full support and cooperation of the faculty member who teaches that course</p>	
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Table 19----Organizationally-Oriented Statements from the Program Portions of Self-Evaluation Guide

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Program	<p>IIB.3: is compatible with institutional offerings</p> <p>IIB.9: staff is aware of academic and other institutional policies and procedures</p> <p>IIB.10: referrals to other college services are made as appropriate</p> <p>IIB.12: assistance in each content area supports the institutional standards in that discipline</p> <p>IIB.13: includes opportunities for faculty, staff, and administrators to understand the learning needs of the students</p>	<p>IIB.1: cooperates with other campus departments to provide a positive learning environment that helps to neutralize the negative environmental conditions that some students endured before or while attending the postsecondary institution</p> <p>IIB.2: provides, or makes referrals for, diagnostic services for students to determine their cognitive and affective skill levels</p> <p>IIB.3: refer students . . . to other support services</p> <p>IIC.1: provides consultation and assistance to faculty, staff, and administrators in recognizing and understanding the learning skill needs of students</p>	<p>II.1: clearly a part of the academic structure of the institution</p> <p>II.7: responsive to the needs of the academic departments whose students it serves</p> <p>II.8: is a clearly recognized part of the admissions process</p> <p>II.11: recognizes its role, along with other academic and support areas, in providing positive educational experiences for students</p> <p>II.14: staff who teach developmental courses are knowledgeable about other support services and encourage students to take advantage of them</p>
		<p>IIC.2: staff members are available to share suggestions with faculty, staff, and administrators on how to help students develop appropriate learning skills and behaviors and apply them to their academic coursework</p>	

Table 20--Organizationally-Oriented Statements from the Program Administration Portions of Self-Evaluation Guide

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Program Administration		<p>IIIA.1: cooperates between student services and academic programs</p> <p>IIIA.8: faculty, staff and administrators outside the AIP are involved resources for the AIP</p> <p>IIIA.10: professional staff serve on or chair key committees outside the AIP</p> <p>IIIC.1: maintain effective working relationships with campus departments whose operations are relevant to the AIP's designed mission</p> <p>IIIC.2: maintains regular communications with academic and student affairs offices in order to encourage cooperation, the exchange of ideas, consultation, and referral of students</p>	

Table 20--Continued

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instruction Programs	Developmental Coursework
Program, cont.		<p>IIIc.3: staff is aware of academic and other institutional policies and procedures</p> <p>IIIc.5: services are publicized so that all students and faculty know of [their] availability</p> <p>IIIc.6: promotes campus understanding of its mission by establishing an advisory board and holding periodic meetings with staff, faculty and administrators</p> <p>IIIc.7: needs of students involved with AIP are understood at the highest level of the institution</p> <p>IIIc.8: provides the academic community with current information about the AIP, its clientele, and its relationship to the institution's academic mission</p>	

Table 20--Continued

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Program, cont.		<p>IIIC.5: services are publicized so that all students and faculty know of [their] availability</p> <p>IIIC.6: promotes campus understanding of its mission by establishing an advisory board and holding periodic meetings with staff, faculty and administrators</p> <p>IIIC.7: needs of students involved with AIP are understood at the highest level of the institution</p> <p>IIIC.8: provides the academic community with current information about the AIP, its clientele, and its relationship to the institution's academic mission</p>	

Table 21--Organizationally-Oriented Statements from Human Resources and Facilities Portions of Self-Evaluation Guides

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Human Resources		IVC.4: staff possess a clear understanding of their limitations and refer to appropriate professionals when warranted IVC.15: course professor is given an opportunity to approve student paraprofessionals who may be employed	
Facilities	VIA.3: all facilities are in a location convenient to campus academic life	VA.6: all facilities are in a location convenient to campus academic life	VII.1: all facilities are in a location convenient to campus academic life

Table 22--Organizationally-Oriented Statements from the Legal Responsibilities Portions of Self-Evaluation Guide

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Legal Responsibilities	VIIIA.2: staff members utilize policies and procedures that limit liability exposure for the institution and its agents	Via.4: staff utilize policies that limit liability exposure for the institution and its agents	VIII.2: staff members are well-informed and regularly updated about the obligations and limitations placed upon the institution by constitutional, statutory and common law; external governmental agencies; and institutional policy VIII.4: staff members utilize policies and practices that limit liability exposure for the institution and its agents

Table 23--Organizationally-Oriented Statements from the Campus and Community Relations Portions of Self-Evaluation Guide

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Campus and Community Relations	XA.1: evidence of systematic efforts to maintain effective working relationships with campus and community agencies whose operations are relevant to the [program's] designated mission		<p>X.2: information regarding the DCP, its goals, purposes, and its relationship to the overall academic program is disseminated to faculty and administrators</p> <p>X.3: advisors are kept fully informed about courses, their sequences, and criteria for placing students</p> <p>X.5: students are fully informed about developmental courses through . . . publications</p> <p>X.7: evidence of cooperation between faculty teaching developmental courses and the learning center and other campus support programs</p>

Table 24--Organizationally-Oriented Statements from Equal Opportunity, Access and Affirmative Action Portions of Self-Evaluation Guide

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Equal Opportunity, Access and Affirmative Action	<p>IXA.2: services and facilities are readily accessible to all students in all programs</p> <p>IXA.5: seeks to identify, prevent, and/or equitably remedy other discriminatory practices</p> <p>IXB.4: services correspond to the assessed needs of the various student populations</p>	<p>VIB.2: services and facilities are readily accessible to all students throughout the institution</p> <p>VIB.6: there is evidence of efforts to adapt...services to meet expressed needs of differing student sub-populations</p>	

Table 25--Organizationally-Oriented Statements from Ethics Portion of Self-Evaluation Guide

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Ethics	<p>XIIB.4: all students are provided access to . . . services on a fair and equitable basis</p> <p>XIIB.8: staff members . . . recognize the limitations of their duties, knowledge, and experience and make appropriate referrals</p>		XII.8: members are encouraged to recognize their limitations when dealing with students and to make appropriate referrals

Table 26--Organizationally-Oriented Statements from Evaluation Portion of Self-Evaluation Guide

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Evaluation	XIIIA.3: evaluation data include responses from students and other significant constituencies		XIII.3: evaluation data include responses from students and other significant constituencies XIII.5: is keyed to various criteria for student success established by the program and college XIII.6: measures of competency in the developmental courses are evaluated in the contest of the institution's overall academic program

Table 27--Organizationally-Oriented Statements from Organization and Administration Portions of Self-Evaluation Guide

<u>Self-Evaluation Guides</u> Portions	Tutoring Services	Adjunct Instructional Programs	Developmental Coursework
Organization and Administration	IVA.2: structured so that student needs are easily communicated to top administrators IVB.3: members. . . serve on or chair key committees outside the [program] IVB.4: faculty, staff, and administrators outside the [program] are utilized resources	IIIA.6: there exists an organizational chart showing job functions and reporting relationships within and beyond the [program]	IV.1: developmental courses are organized as well-defined component of the institution's academic program

APPENDIX C
PARTICIPANTS IN THE
NATIONAL STUDY OF DEVELOPMENTAL EDUCATION

APPENDIX C

PARTICIPANTS IN THE

NATIONAL STUDY OF DEVELOPMENTAL EDUCATION

By Subsample and State Location, as Reported by Boylan, H.R., et al. (1992). Summary Report: National Study of Developmental Education: Students, Programs & Institutions of Higher Education, p. 20. Boone NC: National Center for Developmental Education, Appalachian State University

<u>Subsample 1</u>	<u>Subsample 2</u>	<u>Subsample 3</u>
Benedictine College KS	Alabama A&M AL	Ball State U. IN
Colgate University NY	Cincinnati Tec OH	Bronx C.C. NY
Dermark Tech. SC	Coll of Charleston SC	Cal. State U. CA
Garrett C.C. MD	Concordia Teachers NE	Carlow Coll. PA
Georgia State U. GA	Delgado C.C. LA	Nott C.C. MI
Illinois Eastern C.C. IL	Franklin & Marshall PA	Flathead Valley CC MT
Kansas Wesleyan KS	Howard C.C. MD	Hendrix Coll. AR
King College TN	Illinois Tec IL	High Pt. Coll. NC
Mary Baldwin Coll. VA	Indiana Uof PA PA	Illinois Coll. IL
Marywood College PA	Iowa State U. IA	Jefferson Tech. OH
Mississippi State U. MS	Itasca C.C. MN	Long Island U. NY
New Hampshire Tec NH	Lk. Superior State MI	Navarro Coll. TX
N. Central Missouri MO	Morningside Coll IA	Neosho County Coll.
Ohio State U. OH	North Seattle CC WA	KS
Sioux Falls Coll. SD	Northern State Coll. SD	Northwest Coll. WA
Unity College ME	Northwest Tech OH	Northwest Iowa Tech
Valley City State U. MD	Olivet Nazarene U. IL	IA
Wor-Wic Tec MD	Orangeburg-Calhoun SC	Penn State--NK PA
Yale U. CT	Richmond C.C. NC	Rugers U. NJ
U. of Oklahoma OK	Rivier Coll. NH	St. Mary's Coll. IN
	Penn State PA	Salem State Coll. MA
	U North Carolina NC	Southwestern Coll. CA
	U. Maryland MD	Syracuse U. NY
	U. Wisconsin-Richland WI	U. of Colorado CO
		U. of Akron OH
	University of Tampa FL	U. Southern Cal. CA
	Wittenberg U. OH	York Tech. Coll. SC

Appendix C--continued

Subsample 4
 Bard Coll. NY
 Bloomfield Coll. NJ
 Cecil C.C. MD
 Cloud County C.C. KS
 Cumberland Coll. KY
 Germanna C.C. VA
 Greenville Coll. IL
 Grossmont Coll. CA
 Humboldt State CA
 Linfield Coll. OR
 Louisiana State U. LA
 Northeast Louisiana LA
 Oklahoma State U. OK
 Quiniebaug Valley C.C.
 CT
 Ripon Coll. WI
 SUNY-Fredonia NY
 Coll. of Low Country
 SC
 Umpiqua Coll. OR
 U. of Cal.-SB CA
 U. South Dakota SD
 U. West Florida FL
 West Va. Wesleyan WV

Subsample 5
 Carson-Newman TN
 Central State U. OH
 Chaffley Coll. CA
 Columbia Coll. SC
 Eastern Montana MT
 Fontbonne Coll. MO
 Gonzaga U. WA
 Haverford Coll. PA
 Hendersib C.C. KY
 Kansas City KS
 Luzerne County PA
 Miss. Valley State MS
 Ohio Dominican OH
 St. Michael's VT
 Seminole CC FL
 TX StateTech. Coll.-
 Waco TX
 Union Univ. TN
 U. Texas-PanAm TX
 U. Missouri-St.Louis
 MO
 U. South Carolina SC
 Washtenaw C.C. MI
 Waterbury State Tech.
 CT
 U. Alaska AK
 Colorado State U. CO

Subsample 6
 Austin Peay U. TN
 Bethel Coll. MN
 Blue Ridge C.C. VA
 Coll New Rochelle NY
 Horry-Georgetown SC
 Howard Coll. TX
 Lake Erie Coll. OH
 Lake Michigan Coll. MI
 Lee Coll. TN
 Meredith Coll. NC
 Montgomery County
 C.C. PA
 NE Wisconsin Tec. WI
 Oakland U. MI
 Rocky Mtn. Coll. MT
 Tri-County C.C. NC
 U. New England ME
 U. Rhode Island RI
 New Mexico State NM
 Virginia Polytech VA

Additional Field Test Sites

Bloomsburg U. PA
 Brevard Coll. NC
 Glen Oaks C.C. MI
 Hudson Valley C.C. NY
 Mattatuck C.C. CT
 Pace U. NY
 St. Thomas U. FL

APPENDIX D
EXAMPLES OF MAILING MATERIALS

APPENDIX D

EXAMPLES OF MAILING MATERIALS

October 28, 1994

FIELD(1)

FIELD(2)

FIELD(3)

FIELD(4)

Dear FIELD(5):

I am conducting research for my doctoral dissertation in Educational Leadership and Policy Studies in Higher Education at Loyola University-Chicago and am writing with a request that should take no more than five minutes of your time. My research involves a nationwide study of nonproprietary two- and four-year institutions of higher education, with the intent of determining whether various models of organization exist for developmental education programs (i.e., programs intended to assist college students prepare for and successfully undertake college-level academic work) and, if so, whether a typology of program models can be developed. There is no evidence that development of such a typology has ever been attempted; yet without a means of identifying the structures of developmental education programs and classifying programs, studies aimed at comparing programs, or their outcomes, and unravelling the complicated skein of cause and effect cannot be meaningful.

Furthermore, although the National Center for Educational Statistics recently reported that about one-third of all college students participate in developmental education programs at some point in their college careers and that 98 percent of all institutions report having at least one program that can be identified as being developmental in nature, we know very little about the placement of developmental education programs within the greater institutional environment or their articulation with other parts of institutions. It seems truly remarkable that programs involving so many students, so many campus professionals, and so many other resources of all types have seldom been studied in the context of the greater institutional organization. This, too, is an aim of this study.

Review of the institutional self-studies prepared prior to accreditation/reaccreditation visits of the six regional accrediting agencies is to play a major role in data collection for this study. Self-studies were selected for documentary research to assist in this study for several reasons: (1) they are typically the result of intensive efforts to produce a high-quality, candid, and complete picture of the institution and its subunits; (2) they are available for every institution of interest in this study and may be expected to address the questions of interest; (3) their format and material of interest is generally comparable, yet reasonably compact in form; and (4) self-studies are collected as part of the accrediting process and, thus, substantial numbers of them can be readily examined with a minimum of travel and expense by travelling to the seven offices of the six regional accrediting agencies. Of course, each of the regional accrediting agencies has its own policies regarding provision of access to self-studies to researchers.

That is why I am writing you. The Commission on Higher Education of the Middle States Association of Colleges and Schools advises me that I must receive permission from each institution individually to review its most recently submitted self-study. I have received information from the Commission dealing with its concerns about confidentiality and agree with them completely. I am committed to maintaining the confidentiality of the institutional self-studies: I will make every effort to ensure that my final report(s) of this study do not reveal the identity of any individual, program, or institution or reveal information that could foreseeably lead to revealing those identities.

The methodology to be used in reviewing the self-studies is to read the parts of them relative to this study, sketch the organizational structure of developmental education programs, locate those programs within the larger context of the institution, and to attempt to identify points at which developmental ed programs articulate with other portions of the institution. Study of a substantial sample of institutional self-studies from across the nation should provide sufficient data to abstract models and develop a generalizable typology, as well as yield information about where models tend to be located within the larger organization. Because the point of the study is abstraction and generalization, I have no interest in and no reason for identifying any particular person, place, or program.

I hope that you will agree with me, the IRB at Loyola University, and Dr. Simmons of the Middle States Commission on Higher Education (see copies of letters enclosed) that this project poses no foreseeable risk to your institution and agree to allow me access to your institutional self-study on file with Middle States. Enclosed are two postage-paid cards; will you please complete them--indicating whether I may review your self-study-- and drop them both back into the mail today?

I would deeply appreciate your cooperation not only in making this study possible, but also in helping guarantee representation of all institutional types from all regions of the U.S. If you choose to grant me permission to review your self-study, I will be pleased to send a summary of findings and discussion to you or anyone you care to designate at the conclusion of the study. Please write or call me if you would like to receive a summary.

Very truly yours,

Enc.

C O M M I S S I O N o f H I G H E R E D U C A T I O N

3624 Market Street, Philadelphia, PA 19104 Tel: 215-662-5606 Fax: 215-662-5950 662-5302

October 24, 1994

VIA FEDERAL EXPRESS

Ms. Gail D. Dantzker
5029 Church
Skokie, IL 60077

Dear Ms. Dantzker:

I am sorry that I am just now providing a response to your correspondence dated October 3rd and which arrived in my office on October 11th. However, I have been out of the office for an extended period.

After reading the contents of your letter and the attachments, I believe you have presented a procedure that will be acceptable to our member institutions. Further, I believe that the nature of your research will be of value to regional accrediting bodies.

While I will be happy to cooperate with you in this research, it will be necessary for you to mail your inquiries directly to the institutions affected. I enclose a complimentary copy of the Commission's current directory for your information and use.

If I can be of further assistance, please let me know.

Sincerely,



Howard L. Simmons, Ph.D.
Executive Director

Enclosure

j:dantzker.024

Example of Response Card (Message Side) Accompanying MSA Mailing

I, _____, _____
Name Title

an authorized representative of

_____ on _____
Name of Institution Date

 DO **DO NOT**

Authorize the Commission on Higher Education of the Middle States Association of Colleges and Schools to allow Gail Dantzker access, for the purpose of conducting research, to this institution's self-study submitted during the academic years 1992-93 or 1993-94. I understand that she will maintain the confidentiality of the self-study and will aggregate her findings in the final report so that no individual, program, or institution can be identified.

April 26, 1995

FIELD(1)

FIELD(2)

FIELD(3)

FIELD(4)

Dear FIELD(5) :

I am conducting research for my doctoral dissertation in Educational Leadership and Policy Studies in Higher Education at Loyola University - Chicago and am writing with a request that should require less than five minutes of your time. My research involves a nationwide study of nonproprietary two- and four-year institutions of higher education, with the intent of identifying and relating both formal organizational structures and informal organizational structures (operational connections across organizational subsystem boundaries) within them. I am specifically interested in academic support and student support services and their working relationships with other parts of the institutions.

Review of institutional self-studies prepared for accreditation/reaccreditation visits occurring during the 1992-93 or 1993-94 academic years is to play a major role in data collection for this study. Self-studies were selected for documentary research to assist in identifying structures for several reasons: (1) they are typically the result of intensive efforts to produce a high-quality, candid, and complete picture of the institution and its subsystems; (2) they are available for every institution of interest in this study and may be expected to address the questions of interest; (3) their format is generally comparable across institutions, yet reasonably compact; (4) most self-studies include either organizational charts or narrative descriptions from which organizational charts can be developed; and (5) the informal web of related activities and communication among subsystems of the educational institution can usually be teased out of the narrative.

Like each of the other regional accrediting agencies, the Southern Association of Schools and Colleges' Commission on Higher Education has provided me with a membership list including dates of initial accreditation and reaffirmation of accreditation. In reviewing this listing, I note that your institution is listed as having undergone an accreditation/ reaffirmation visit in 1992, 1993, or 1994. This potentially places your institution within the target population. Therefore, I am writing to ask, providing your accreditation visit fell into either academic year 1992-93 or 1993-94, if I may have a copy of your self-study to use solely for the purposes of this research?

I am committed to maintaining the confidentiality of the institutional self-studies: I will make every effort to ensure that my final report(s) of this study do not reveal the identity of any individual, program, or institution, or any information that could foreseeably lead to revealing those identities. I will keep self-studies secured in a private location and will not allow anyone else access to them. I will return your self-study as soon as I have completed my study of it or see that it is destroyed by shredding, if you so specify. Because the point of the study is to extract generalizable models from the mass of data and to develop a typology, I have no interest in and no reason for identifying any particular person, institution, or program in the final report(s).

I hope that you will agree with me and the IRB at Loyola University (see enclosed approval) that this project poses no foreseeable risk to your institution, or any individual in it, and allow me the use of your institutional self-study. I will deeply appreciate your cooperation not only in making completion of this study possible, but also in helping guarantee representation of all institutional types from all regions of the U.S., by mailing a copy of your recent self-study to me at your earliest convenience. If there are reproduction or postage expenses that you wish to have reimbursed, please notify me and I will be pleased to send a check to defray them. I will also be pleased to send a summary of findings and discussion resulting from this research to you or to anyone you care to designate at the conclusion of the study, if you choose to participate. Please do not hesitate to write or call for additional information or to give specific instructions about the handling of your self-study.

I have completed this work in each of the other regions and now lack only representative institutions from the South to complete national data collection. Initial reaction has been very positive about both my careful use of self-studies and the potential this study has to be theoretically and practically useful in higher education. Please take just a minute now to see that a copy of your self-study is put into the mail to me today, so that institutions like yours will be fully represented in this study!

Very truly yours,

Gail Dantzker
5029 Church Street #2
Skokie IL 60077-1255
(708) 675-1942

Enc.: Letter from Matthew Creighton, Chair, Loyola University-Chicago IRB

APPENDIX E
DESCRIPTORS

APPENDIX E
DESCRIPTORS

List of Descriptors Used to Aid in Identifying Relevant Portions of Self-Studies

developmental
remedial/remediate
support/supportive
disadvantaged
minority
learning disabled/disability/LD
tutor/tutoring/tutorial
assist/assistance
learning lab/learning assistance center/academic assistance center/tutorial assistance center
adjunct instruction/supplemental, supplementary instruction/SI/study group
peer tutoring/peer mentoring/student leaders/student assistants
orient/orientation
developmental courses/remedial courses/pre-college courses/non-credit courses/not for college credit
courses/institutional credit only courses
individualized instruction/IEP/Individual Educational Program or Plan
assess/assessment
placement
diagnosis/diagnostic
open-door/open-admission/liberal [admission standards]
entry-level testing/ exit-level testing/screening
special admission/conditional admission
advising/counseling

List of Descriptors--cont.

Student Support Services/Educational Opportunity Program/TRIO/Title IV/Special Services/JTPA/Displaced
 Homemakers/Displaced Workers/Perkins/Single Parent
 first-generation/economically disadvantaged
 Success Seminar/Workshop/academic skills/learning skills/time management/testtaking
 skills/notetaking/anxiety/textbook reading/study skills
 literacy/illiteracy/numeracy
 GED/ABE/basic education/adult education/basic adult education
 ESL/non-native speakers/international students/LEP/limited English proficiency/ nonstandard English
 grammar/reading/arithmetic/introductory algebra/basic math/less than college level/ pre-college/[any grade
 level of 12 or less]
 nontraditional students/adult learners/returning students/underprepared students workplace learning
 non-credit/institutional credit/nontransfer
 child care
 financial aid
 bibliographic instruction/library orientation
 intercollegiate athletics/recruitment/admission standards/support to athletes/NCAA standards/NAIA
 Standards/AJCAA Standards/progress toward a degree/eligibility/ tracking/reporting
 ability to benefit
 CAI/computer-assisted instruction/individualized/flexible/competency based
 access/equality/level playing field/equity
 minority students/underrepresented group/special population
 first-tier testing/second-tier testing/pre-testing
 English [language] institute/academy
 career/career exploration/interest inventory/personal inventory/aptitude inventory/job search skills/resume'
 writing/interviewing practice

List of Descriptors--cont.

institutional research

tracking/longitudinal studies/persistence/retention/graduation rates

residence life

learner-centered/student-centered

APPENDIX F
INSTRUMENTS

APPENDIX F

INSTRUMENTS

Basic Data Screen Used to Enter Information from Each Self-Study**Institution: (alpha)****Association/Institution Number: (num: 1-6=assn + 001..00n=institution)****Date of Self-Study: (num xxxx)****Carnegie Classification: (num)****Mission Statement: (alpha)****Organizational Chart in Self-Study? (num: 0=no 1=yes)****Org Chart Copied? (num: 0=no 1=yes)****Notes/Comments:**

Sample Data Reduction Forms:**DEVELOPMENTAL INTERVENTION TYPES**

	Type	Located	Supervise By	Carried Out By	For Who	Purpose
	Tutoring: Content Specific					
	Tutoring: Targeted					
	Tutoring: General					
	Individual Instruct					
	Adjunct Instruct: General					
	Adjunct Instruct: Targeted					
	Pre-College Courses: No Credit					
	Pre-Coll. Courses: Inst. Cred.					
	Credit Courses					
	Learning Skill Dev.: General					
	Learning Skill Dev.: Targeted					
	Personal & Interp. Skill Dev.: General					

Personal & Interp. Skill Dev.: Targeted						
Freshman Orient: General						
Freshman Orient: Targeted						
Other Orient						
ABE						
GED						
ESL						
LEP						
Entry-Lev. Assessmt: General						
Entry-Lev. Assessmt: Targeted						
Exit Asmt: General						
Exit Asmt: Targeted						
Other Assessmt: Ongoing						
Other Assessmt: Pre-detd Points						

APPENDIX G
ACCREDITING REGIONS

APPENDIX H
FACTORS

APPENDIX H

FACTORS

Variables Underlying Informal Organizational Structure(s) (with Factor Coefficients)

Factor 1--Provision and Support of Basic Academic Skills by English and Math Departments: English

Department (.87) and Math Department (.88)

Factor 2--Matriculation Services: Enrollment Services (.72) and Separate Orientation (.57)

Factor 3--Counseling: Counseling Center (.81) and Counseling Center 2 (.77)

Factor 4--Adult Education: Adult Education (.65)

Factor 5--Intercollegiate Athletics: Athletics (.74)

Factor 6--Other Developmental Education: Developmental Education Department (.78) (informal organizational structure) and Other Department (.62)

Factor 7--Career Enhancement: Career Center (.59) and Learning Center 1 (.72)

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