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# Using children's literature to develop thinking skills in young children.

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USING CHILDREN'S LITERATURE TO  
DEVELOP THINKING SKILLS IN YOUNG CHILDREN

A Dissertation Presented

By

LINDA JOY MOSHER

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

DOCTOR OF EDUCATION

May 1986

School of Education



Linda Joy Mosher

1986

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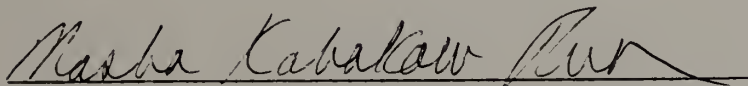
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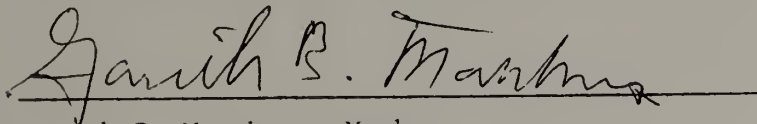
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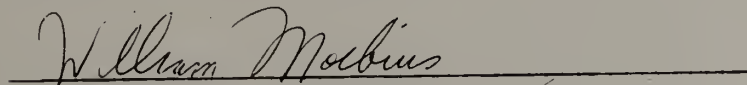
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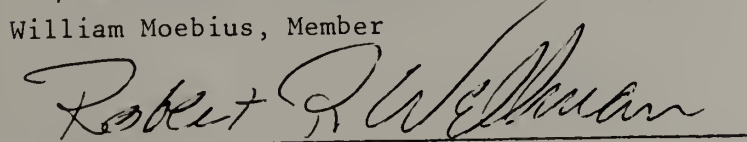
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## ACKNOWLEDGEMENTS

The author wishes to acknowledge the contributions which many people have made to this study.

Dr. Masha K. Rudman, chairperson of the dissertation committee, extended unflagging support and encouragement coupled with keen and insightful criticism. She has been a leader and a friend.

Dr. Gareth Matthews, Dr. William Moebius, and Dr. Robert Wellman, members of the dissertation committee, aided my study of the theoretical foundations of the dissertation and assisted me in examining the experience of children. I am grateful for their wholehearted and perceptive encouragement.

Miss Nancy Morrison, principal of my school as well as my friend, supported and encouraged my work. I am grateful for her faith in me.

My extended family supported me in countless ways. The interest and appreciation offered will forever hold me debtor. Barbara Gould, typist and friend, contributed greatly to the success of this endeavor. I thank her for her concern and her excellence.

My parents, Walt and Betty Odom, supported me with unwavering faith and concrete support. I am grateful to them for all they have done, and all they are as persons.

Finally, my husband Stephen and my sons David, John and Edmund offered support and encouragement to fulfill my goal, but also to recognize that there is more to life than graduate study. My special esteem and thanks are reserved for Stephen, who exhorted, encouraged and prodded me, and who endured with faith and good humor to the very end.

ABSTRACT

Using Children's Literature to  
Develop Thinking Skills in Young Children

May 1986

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Using the definition of reflective thinking developed by John Dewey and B. F. Skinner, this dissertation explores the possibility of using stories to present occasions upon which to provide for the development of thinking skills in young children. The study examines the psychological and aesthetic implications of the use of stories for children as examined in the works of Kornei Chukovsky and Arthur Applebee.

The dissertation describes a classroom program which involved reading stories by Arnold Lobel to children in first and second grade. Following hearing the story, the children were guided in discussion which led them to examine the problems and problem-solving in the story, interpret causes, evaluate solutions and create alternatives. Thinking behavior was the focus of the discussions.

Children participating in the program showed increased ability to identify problems and critically examine their causes and solutions in the stories.

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## C H A P T E R I

### INTRODUCTION

#### Statement of the Problem

Socrates, in the Euthyphro (1956), converses with a young man on the nature of piety, and brings into bold relief two senses in which one may talk of "thinking." In response to Socrates' questions, Euthyphro says what he thinks, so to speak, and then is examined by Socrates, who forces him to think about what he says. That is, the process is one of examining the nature of the apparent facts, assumptions, or conclusions of our experience. Says Socrates, "Are we to examine this definition, Euthyphro, and see if it is a good one? Or are we to be content to accept the bare statements of other men or of ourselves without asking any questions?" (p. 11).

#### Thinking as Reflection

Educationally, the problem of how best to stimulate thinking and how to assess the degree of development has been consistently recognized as crucial, though served with differing degrees of emphasis. Thinking, in this paper, shall refer to what John Dewey (1966) calls "the intentional endeavor to discover specific connections between something which we do and the consequences which result, so that the two become continuous" (p. 145). Thinking, in this sense, is reflective experiencing, involving a continuity of acts and their meaning

in experience. Thinking begins in discontinuity, in a situation which is problematical and thus poses a challenge.

Thinking involves identifying the problem, that is, forming some idea of its nature, gathering data, developing implications and formulating a course of action. Reasoning is the analytical aspect of the process, which reviews consequences, develops implications and formulates a course of action. Without thinking in this sense, the accumulated mass of information in education remains mere content without meaning.

Dewey (1966) develops a "technical definition of education" which states that:

It is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience. (p. 76)

Education depends not only upon the accumulation of data, but upon the reconstruction or reorganization of experience which gives meaning to it. Dewey notes that, in education, the degree of emphasis upon thinking (extracting meaning from facts and forming conclusions) depends upon the very definition the society applies to itself. "The conception of education as a social process and function has no definite meaning until we define the kind of society we have in mind" (p. 97). A totalitarian society supports education which subordinates the individual to the state, and which trains individuals to maintain the status quo. Democratic societies

must have a type of education which gives individuals a personal interest in social relationships and control, and the habits of mind which secure social changes without introducing disorder. (p. 99)

Dewey's influence upon the content and process of American education has been massive. Educational reforms, recognition of the importance of relevant and meaningful content and the expanding recognition of the student as participant rather than recipient has been a continuing theme, articulated by Dewey and examined and redefined by educational philosophers since that time.

#### Growing Emphasis on Thinking Skills in the Schools

Thinking, as part of the curriculum in education, has been the object of much study and theory, and many programs have been developed to enhance the quality of thinking in American schools. The 1983 Winter Survey of Education by the New York Times (G. Maeroff, Section 12, January 9) is titled, "Teaching to Think: A New Emphasis." Five articles describe programs designed to teach critical thinking skills to students from elementary to college levels. The title article notes the development of many such programs, and that "This development reflects rising concern that many students go through school without gaining the ability to analyze, synthesize and generalize" (p. 1).

Perusal of the education section of any bookstore reflects the trend as well. Books which emphasize the development of thinking skills approach the subject from a multitude of angles including visual

and manipulative games, logical analysis, mathematics and the use of computers.

Most people would agree that the development of critical thinking skills is necessary and many are concerned with the positive effect such skills may have upon achievement in math, writing and reading. But the very multiplicity of approaches underlines the tendency to view thinking skills separately from subject matter.

This multiplicity emphasizes another serious difficulty as well. The time available in the school day is limited: increasing demands for the inclusion of a variety of "essential" new subjects or skills provides little in the way of effective means for doing so.

The elementary school day is usually firmly structured. At a time of decreasing funds and increasing demands for "basics" most schools feel restriction rather than expansion in the implementation of new programs. Secondary schools may introduce courses on thinking, but if such courses are elective, one may assume that those most in need may not necessarily receive training. Further, to designate such courses "required" necessitates limiting the program elsewhere.

Obviously, much may be done within any school program as it stands. Textbooks and programs in areas such as reading and science have been designed to teach both the basic skills of the discipline and critical thinking skills as well. Individual school districts may investigate such programs and purchase them when materials are needed and funds are available. However, this approach still serves only a small portion of a population, when the need for the development of thinking skills has been widely identified.

### Using Stories and Discussion in a Thinking Skills Program

The language arts area of the curriculum offers an excellent opportunity to develop thinking skills in all students with virtually no disruption of the schedule or the budget. This approach involves utilizing "story time" and the discussion which follows it as an opportunity to take a more structured and deliberate approach to the development of thinking skills. Teachers are already engaged in questioning aimed at developing vocabulary, sequencing of story events, recall and comprehension. The inclusion of questions aimed at developing the aspect of thinking identified by Dewey as reasoning represents an enhancement of the language arts program which may be expected to provide increased development in language arts while simultaneously developing skills of thinking.

Another advantage of this approach is the flexibility it offers with regard to the age of students. While expectations regarding the depth and complexity of thinking skills may be adjusted according to the developmental level of the child, stories or literature are a part of the educational program at every level and can provide very early for a sound beginning in thinking skills in the child's educational experience.

### Rationale for a Thinking Skills Program Focused on Stories

Listening to stories constitutes an almost-universal experience for children. Literature for children provides not only satisfaction



and enjoyment, but is a significant instrument in the child's development as a member of the human community. The stories that children hear and later may read, represent a unique opportunity to identify and deal with issues critical to their own development and to their connection with and integration into society.

### Language and Membership in the Human Community

According to B. F. Skinner (1974) language, as a human development, "extended the scope of the social environment and created the 'verbal community'" (p. 88). John Dewey (1930) described the infant's acquisition of language from those about him and noted that "ability to speak the language is a pre-condition of his entering into effective communication with them, making wants known and getting them satisfied" (pp. 58, 59).

A story may articulate, for the first time, a conflict experienced by a listening child, allowing the child to identify and describe feelings and issues which had previously been inchoate. Thus, the story may provide for the development of the very concepts and vocabulary with which we express our experiences. Children are also enabled to make connection with their society as they recognize that their experiences are not unique.

The use of language is crucial in this process. Dewey (1966) makes a distinction between "training" and "education." In training, an animal or person is habituated to behaviors which profit those in control. In education, the individual comes to share in the "social

use to which his action is put" (p. 13). Dewey connects social life with communication, and declares that "all genuine social life is educative" (p. 5); in education, the individual "really shares or participates in the common activity" (p. 13).

For Skinner (1980), the act of description is reinforced by the verbal community and makes the consequences encountered by individuals available to all members of the community. The use of language makes the analysis of the contingencies of reinforcement possible. That is, experience may be analyzed, and listeners may make provision for action without directly undergoing consequences. The use of language makes analysis of the contingencies of reinforcement possible, "by the help of which the reasoner may satisfy the contingencies without being directly affected by them" (p. 136).

In human history, early stories in the oral tradition were, quite literally, narrations or descriptions of the contingencies of reinforcement; that is, descriptions of the acts and consequences constituting experience. Books today fulfill the same role, even the blank books which may be understood as repositories for the narration of contingencies encountered by individuals.

### Thinking in Education

As education brings individuals to share fully in the society, it does so by developing reflective thinking or reasoning abilities. In a fundamental sense, thinking is inherently involved in all the curriculum of the school. Subject matter in each area involves



choice, recall, problem-solving and the forming of concepts and generalizations.

Thinking takes place in the context of the experience of the subject matter. As Dewey (1933) says, "Thinking no more exists apart from this arranging of subject matter than digestion occurs apart from the assimilating of food" (p. 247). Children do not engage in "thinking," they engage in "thinking about something." While the term "thinking" may be used in some sense to refer to disconnected images which "go through our heads" or to inconsequential covert behaviors, thinking here shall refer to what Dewey calls "reflective thinking" and Skinner calls reasoning, or the analysis of the contingencies of reinforcement. Thus choice, recall, problem-solving and the formation of concepts and generalizations is completed by the analytical component of reasoning which reviews the consequences, develops implications and formulates action.

The thinking process outlined above does not require a complex or sophisticated occasion for its occurrence. Rather, it requires an occasion upon which the individual is involved in or committed to resolving something problematical. The child who is engaged in formulation of a tentative idea, consideration and support of a conclusion is thinking. The thinker is committed to the resolution of something personally significant and engages in active effort until a solution is effected.

### Children's Literature as Description of Experience

Children's literature presents an already-existing vehicle for the development of thinking skills. The use of literature to develop reasoning ability is particularly appropriate, since literature is a formalized embodiment of the description of the consequences of experience--or, the contingencies of reinforcement. Dewey (1966) said: "This education consists primarily in transmission through communication. Communication is a process of sharing experience till it becomes a common possession" (p. 19). Any story necessarily functions as a description of experience for the purpose of sharing it and may be the occasion for analysis or reasoning.

Literature makes the contingencies of vast experience available for common analysis. It is a tool for the development of reflective thinking ability. Masha Rudman (1984) comments: "Reading, one of the most important areas of instruction in the schools, has emerged as a critical tool for the development of the skills of independent and responsible critical thinking and behavior" (p. 2). Reading gives individuals access to the experience of others, described in literature.

This paper suggests that the quality in a story which stimulates and sustains interest on the part of the child is deeply connected with the quality which occasions reflective thinking or reasoning. The theme or content involves experiences which are important or critical to the interests or developmental issues of the child. Articulation of these issues goes beyond what is already understood by the child. The creation or exposure of some conflict or discontinuity related to

those issues invites or even compels the child to attempt some resolution through reflection.

This quality in a story is likely to have lasting impact. The child will be stimulated to return again and again, a response which signifies involvement in the "problem" and active commitment to the resolution of that problem. Bruno Bettelheim (1976), comments on the essential qualities in a story.

For a story truly to hold the child's attention, it must entertain him and arouse his curiosity. But to enrich his life it must stimulate his imagination; help him to develop his intellect and clarify his emotions; be attuned to his anxieties and aspirations; give full recognition to his difficulties, while at the same time suggesting solutions to the problems which perturb him. In short, it must at one and the same time relate to all aspects of his personality--and this without ever belittling but, on the contrary, giving full credence to the seriousness of the child's predicaments, while simultaneously promoting full confidence in himself and his future. (p. 5)

We recognize that in the use of stories, as with other approaches to the development of thinking skills, it is not the presentation of one problem situation, but repeated experiences of such problem situations in the aggregate experience of stories which develops reflective thinking ability. The role of the educator in the arrangement of these experiences is crucial. In the use of stories with

children to develop thinking skills, the teacher arranges not one occasion, but many. This provides the opportunity to examine and articulate the nature and consequences of experience in a setting designed to encourage and enhance analysis.

### Methodology

The approach to teaching thinking skills through literature is based on the theories of Dewey and Skinner. The researcher read works by Dewey and Skinner as well as works which develop theoretical positions and practical applications regarding curriculum, literature and literary development in the individual.

Dewey's ideas on the nature of thinking and reasoning were examined as they appear in Human Nature and Conduct: An Introduction to Social Psychology (1930); How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process (1933); Democracy and Education: An Introduction to the Philosophy of Education (1966); and Interest and Effort in Education (1975). Skinner's points on the nature of thinking and reasoning appear in Science and Human Behavior (1965); Contingencies of Reinforcement, A Theoretical Analysis (1969); About Behaviorism (1974); and Notebooks (1980).

Points related to techniques and procedural strategies for teaching thinking were examined in Ways of Teaching (1974) and Strategic Questioning (1979), by Ronald Hyman. Points covering a theory and methodology for employing an approach of philosophical

inquiry with children appear in Philosophy in the Classroom (1980), by Matthew Lipman, Ann Margaret Sharp and Frederick S. Oscanyan.

Points having to do with the function of literature and the developmental nature of literary response appear in Kornei Chukovsky's From Two to Five (1963), and Arthur Applebee's The Child's Concept of Story (1978).

### The Classroom Program

The above theories were applied in the development of a program for practical application in an elementary class. The class was a first/second grade which included students aged five to eight. The program was conducted as a part of the regular language arts period of the day. The children listened to stories and participated in discussions designed to develop thinking skills and the awareness of thinking as a skill. Groups for discussion were small--ranging in size from four to nine participants. Group membership was a function of membership in regular reading groups.

Stories used in the program were limited to works by Arnold Lobel, with a focus on his stories concerning Frog and Toad, Owl, and Mouse characters. These stories tend to be brief, simple, and offer a clear opportunity for the identification of characters, critical events and a problem situation. The stories also frequently offer a puzzle of a philosophical nature--for example, whether one can be in two places at once, as in Owl's dilemma in "Upstairs and Downstairs" or whether one can affect the passage of time, as in Frog and Toad's story about "Spring."



The procedure for the story discussion involved reading a story to the students, then facilitating a discussion. A general format for each lesson was provided by the researcher. The format included questions involving recall of basic information in the story (such as "Who are the characters?"), comprehension ("What is the problem in the story?") and analysis of issues. Questions on the format were also aimed at developing the students' awareness of the process of inquiry and increasing the students' ability to generalize the approach. Questions were included which invited the students to evaluate the thinking behavior in the stories and which invited the students to identify examples of "good thinking" within the group discussion. This approach aimed at the development of qualitative judgment regarding thinking, but did not require or impose such judgment. Any example offered was accepted in order to reinforce the process of participation, which was the primary goal of the program.

Another important element involved the attempt to develop an attitude of acceptance and respect for the contributions of others, and the encouragement of student-to-student response, as a means of the development of a community of inquiry rather than merely individual response to the leader.

### Planning

Story discussions were tape-recorded, then transcribed. This permitted analysis of the effectiveness of specific questions and identification of critical issues to be addressed in following

discussions. Analysis also permitted a closer understanding of the level of performance of the group as well as individuals for immediate planning in addition to evaluation of the program. Strategies were identified and implemented to address the needs and issues identified.

The leader's role was an important aspect of the process, and analysis of that role led to identification of effective strategies as well as identification of issues or aspects which necessitated implementation of a change in approach. Each transcript yielded information about the effectiveness of the program which led to the emphasis or refinement of the strategies.

Sample transcripts of the story discussions are included in the dissertation along with a sample discussion guide, in the appendix. Some of this content is included within the body of the dissertation: parts of transcripts serve as data for reflection, examination of practical application of theory, or examples which confirm or challenge the assumptions made.

#### Related Works

Vivian Gussin Paley's book Wally's Stories (1981), consists of a similar approach, narrating the creation and/or acting out of stories in a kindergarten classroom, along with some teacher commentary. This book does not contain a description of the theoretical basis of the approach or an integrating sequential overview. E. G. Pitcher and E. Prelinger's Children Tell Stories (1963), analyzes stories dictated by children aged two to five, including a Freudian theoretical structure

and the development of the formal dimensions of the children's responses.

This study hopes to go beyond the approaches in these books, recognizing that in the same attempt it shall limit some of the potential realized in each. The intent is to provide a more defined theoretical structure, aimed at developing thinking skills through literature, as well as a more completely developed application of the theories examined to the practical classroom experience.

#### Limitations of the Study

There are several significant limitations to this study. The researcher also served as the implementing teacher (referred to in this study as Teacher A) for the first portion of the story discussion program. This dual role complicated the study in innumerable ways. The teaching role always involves a multitude of goals. Teacher A's familiarity with the children, and her involvement in all aspects of the classroom program and the needs and abilities of individual children enlarged and complicated the role of discussion group leadership. Response on the part of Teacher A to behavioral idiosyncracies of individual children, needs which were not specifically relevant to the story discussion goals, and individual academic issues functioned in tandem with response to children in terms of the program. Issues of discipline, personality and relationships entered, where they might not have if the researcher had a more objective position.



Involvement of the researcher as teacher also made identification and examination of both efficacious and hindering approaches in early discussions more difficult. The recognition of patterns in the responses of both the children and the researcher/teacher possibly took longer since familiarity tended to conflict with the objectivity required in analysis.

#### Transfer in Teachers During the Study

Mid-way through the study, a substitute teacher, identified in this paper as Teacher B, replaced Teacher A. The transfer of leadership from one teacher to another during a school term tends to produce disruption, insecurity and regressive behavior in children. This effect was seen in the class which was the focus of this study. The researcher assumes that these consequences had a negative effect on the results of the study. Skills in thinking and positive practices in discussion may have followed a different course of development than would be observable in a group which suffered no break in the continuity of leadership.

Teacher B was not certified as an elementary teacher. She was inexperienced in the curriculum and management of an elementary classroom. Teacher B was also unfamiliar with the theoretical foundations involved in this study, and with the goals and strategies involved in the discussion component. While explication of theory and discussion and modelling of practice was provided, complete understanding in these areas on the part of Teacher B was unattainable. Support and detailed guidance was provided for the story discussions, but mastery of these areas was unfeasible.

### Limited Size and Scope of the Study

Consequences of the problems discussed above led Teacher B to terminate the story discussion program, ending the practical component of the study. The conclusions drawn and the implications developed are based on discussion of six stories which took place over the course of about nine weeks. The number of discussions and the time span involved are quite limited, which limits the gains which may be observed and the conclusions which may be drawn.

In addition, the size of the study is quite limited. A total of twenty-five children participated in the story discussions. Since the intent of the study was informal and exploratory, no comparison group was established and examined for similarities or differences in relation to the group studied. Further, no set of objectives or specific outcomes was established to guide observation and analysis of the results of the story discussion program. Consequently, no conclusions may be drawn pointing to specific skills or outcomes which may result from such a program.

### Evaluation

Since the intent of this study was exploratory, evaluation was conducted in an informal manner. Transcripts of the story discussion were examined for evidence of skill development in problem identification, interpretation of the story action and consequences, and evaluation of problem solving in the story. In addition, student-to-student response was considered an important factor.

A chart was developed which examined the responses of the children in Group One for each story discussion. The charts were not established in advance as part of an evaluative design, but were created as an organizational tool in the examination of data. The number of contributions to the discussion by each student was recorded. In addition, each student contribution was coded into categories including "Refers to the problem in the story," "Provides possible alternatives to the story action," "Gives a possible reason to interpret story action and consequences," "Gives opinion or makes judgments related to story action," "Evaluates thinking in the story," "Responds to contribution to discussion by peer," and "Identifies a peer who did 'good thinking' in discussion."

Student contributions to the discussions often contained more than one of the categories of responses coded in the chart. Contributions which did not contain any of the coded categories were tallied. Information from the chart was used to scrutinize both the quantity and quality of the student's responses. The charts are included in this dissertation as appendices. The information gathered was used to evaluate whether participation in the program had a positive effect on the development of the skills described above.

Outline of the Dissertation

I. Introduction

- A. Statement of the problem.
- B. Rationale.
- C. Methodology.
- D. Evaluation.

II. Review of the Literature

- A. The theories of Dewey and Skinner regarding thinking and the nature of reasoning inform an understanding of the role of the analysis of experience.
- B. The theories of Chukovsky and Applebee regarding the function of literature and the developmental aspects of literary response give evidence for the efficacy of the use of literature as an occasion for reflection.
- C. The type and content of literature for a program teaching thinking skills is examined, and the connection between philosophy and literature is explored.

III. Description of the Study

- A. The setting of the program.
- B. Initiating the program.
- C. A description of the teacher and the class.
- D. Administration of the program.

IV. Analysis of the Data

- A. Analysis of student responses for evidence of skill development.
- B. The importance of the teacher role.
- C. "Alana" as a typical participant.
- D. Difficulties in the program.

V. Conclusions and Recommendations

- A. The study concludes that a program based on discussion of stories is an effective means of developing thinking skills.
- B. Further research is needed to evaluate a full-scale program and to address several pertinent issues.

C H A P T E R   I I  
REVIEW OF THE LITERATURE

The theories of Dewey, Skinner, Chukovsky and Applebee come together to provide strong evidence for the efficacy of literature as an occasion for reflection. It is the researcher's argument that the connection between literature and the description and analysis of experience as delineated by Dewey and Skinner is not merely fortuitous. Literature is not merely an excellent description of experience, it also serves the prime function of expressing human experience for the purpose of reflection.

The expression of and understanding of human experience is the element which brings the works examined into concert for the purposes of this paper. Use of language is the means by which membership in the human community is developed. Entry into the "verbal community" (Skinner, 1969, p. 229) involves learning to respond to the description of behavior and to engage in that description as well.

The Social Context of Language

In Experience and Nature (1958) Dewey comments on the social context and nature of language:

The heart of language is not "expression of something antecedent, much less expression of antecedent thought. It is communication; the establishment of cooperation in an activity in which there are partners, and in which

the activity of each is modified and regulated by partnership. (p. 179)

Dewey describes language as a "mode of interaction," a "relationship" (p. 158) and characterizes communication as "a means of establishing cooperation, domination and order. Shared experience is the greatest of human goods" (p. 202). Communication allows individuals to understand their experiences in terms of potential consequences. This understanding through analysis of consequences is the product of reflection. The ability to reflect about experience, not present at birth, is developed by the social context and depends upon meanings given by the social community and upon a relationship with that context or community. For Dewey and Skinner, reflection or reasoning is the hallmark of membership in the human community.

In adults, description is reinforced by contingencies in experience. Describing experience to oneself increases the chance of successful performance in the present situation and the future as well. Narrating to oneself the steps in cooking or composition gives structure, aids recall, and supports the process. While we can readily observe the reinforcement present in the contingencies in this type of situation, we can also observe that the development of this behavior in humans depends upon reinforcement by the verbal community rather than upon contingencies in the situation.

The community provides language to illuminate the experiences of the child--essentially narrating the child's experiences from birth, and in the process, providing the language with which the



child develops meaning. Description by the community precedes the ability of the individual to engage in self-description and encounter the contingencies which reinforce and maintain this behavior.

### Chukovsky and the Role of Literature

The role of language in the development of meaning is a strong point of connection in the theories examined. Kornei Chukovsky in From Two to Five (1963) describes the explosion of linguistic development in the young child and examines the intellectual development which is inextricably involved. Chukovsky emphasizes the social nature of the development of these powers: "the young child acquires his linguistic and thinking habits only through communication with other human beings. It is only this association that makes a human being out of him, that is a speaking and thinking being" (p. 8).

Chukovsky describes the powerful role that literature plays as a means for the child to gain knowledge and bring order to experience. He notes the intimate connection between the manner of description and the usefulness of that description for the child's purposes. Chukovsky insists that literature serves as a means of cognitive and emotional growth because it presents experience in the form most appropriate to the child's developing abilities.

### Applebee: Literary Response as Representation of Experience

In The Child's Concept of Story (1978) Arthur Applebee identifies systematic representation of experience as a human characteristic. He

describes individual understanding of, or representation of experience as "literary response." These representations of experience are both "a mental record of our past experience" and a "set of reasonable expectations to guide us in interpreting and reacting to new experience" (p. 3).

Consistent with the other theorists, Applebee makes the point that communication is taught by the social context, and that with the acquisition of language, individuals also learn the rules for building systematic representations of experience: through them the individual builds or conceptualizes "the world" (1978, p. 4). The meaning of experience and the system for communicating that meaning is provided by the community.

Applebee describes how differing purposes of communication require various modes of language use and roles associated with them. Applebee centers the modes in the expressive, where general communication reflects the assumption of shared, common experience. When experience is common, the conversational approach of the expressive mode is adequate for conveying meaning. However, as soon as common or shared experience cannot be assumed, differing modes must be extended from the expressive mode to communicate effectively.

Applebee's primary concern is with the spectator mode which describes subjective experience and which requires a spectator role of the listener. The listener must take in the entire description before formulating a response. Applebee posits that this spectator role develops early in children, and that early development of



spectator role language in children is evidence of the early development of literary response.

Applebee parallels the mastery of modes of literary response and cognitive development. His identification of the cognitive nature of language development, or the connection between the development of language and cognitive development is consistent with the other theoretical positions examined in this paper.

Applebee identifies the expressive mode of shared experience as the primary mode developed by individuals. He points to the early development of the spectator mode that follows. Applebee states that the early development of the spectator role functions as a means for the child to order his or her own experiences as well as the experiences described by others. He makes a point of the observation that the young child does not discriminate spectator-role experiences from real-world experiences.

#### The Community Provides Meaning Through Language

Dewey, Skinner and Chukovsky identify the role of the community in providing language and meaning to inform experience: common experience develops through interaction with the community. Individuals must first take in description provided by the community in order to develop meaning. To state this position in Applebee's terms, some form of "spectator-role" must function from birth to allow the accumulation of meaningful experience which would lead to the ability to engage in a conversational approach based on shared experience.

Applebee's point that the child does not discriminate spectator-role experience from real-world experience seems a logical support to the position that the spectator role functions to establish reality. All the theories examined emphasize the dependency of the child upon the social context for the development of meaning. All describe the limited experience of the young and the manner in which the community provides the meaning associated with experience. To know what is real depends upon support from the community.

While this divergence in interpretation between Applebee and the other theorists is important to note, the crucial point of agreement among all four is the role of literature in providing an extension of experience and an expanded development of meaning. Dewey, Skinner, Chukovsky and Applebee's theories illuminate the function of literature in providing a broader range of experience than is available within the first-hand scope of the individual.

Applebee's use of the term "literary response" to describe systematic representation of experience helps to discriminate literature from what might be termed mere recounting of experience or "running commentary." While any description of experience is useful, the literary representation of experience has distinct advantages in its appropriateness and richness as an occasion for reflection.

#### Aesthetic Quality in Experience

In Art as Experience (1934) Dewey draws a distinction between experience as it occurs continuously "under conditions of resistance

and conflict" where "things are experienced but not in such a way that they are composed into an experience" and experience "when the material runs its course to fulfillment [and is] integrated within and demarcated in the general stream of experience from other experiences" (p. 35). Interaction with the environment involves many responses, some of which are instinctive, habitual or impulsive. Skinner discriminates contingency-reinforced behaviors from behavior which analyzes contingencies. In the course of experience, reflection or reasoning does not occur continuously.

Dewey makes the point that experience which is the occasion for reflection is marked by consummation, a wholeness or integration of parts where unity and completion exist without submersion of the individual parts. His description is evocative at times of Applebee's discrimination of spectator role experiences from the transactional language used to evaluate them. Dewey says:

The existence of this unity is constituted by a single quality that pervades the entire experience in spite of the variation of its constituent parts. This unity is neither emotional, practical, nor intellectual, for these terms name distinctions that reflection can make within it. In discourse about an experience, we must make use of these adjectives of interpretation. (p. 37)

Dewey continues with the important point that "an experience of thinking has its own esthetic quality" (p. 38). This correlates with Applebee's description of literary response in the spectator

mode where the experience is taken in as a whole, parts integrated and completion allowed before analysis begins.

Dewey's point that to be amenable to reflection an experience must have some coherence for sustaining meaning is consistent with the views of the other theorists which connect language development with cognitive development. "The action and its consequence must be joined in perception. This relationship is what gives meaning; to grasp it is the objective of all intelligence" (p. 44).

Dewey further notes that the meanings that may be perceived depend upon the range of experience and the maturity of the individual; no individual ever perceives all the connections that could be made. Chukovsky and Applebee describe the limited experiences and perceptions of the child. Applebee's description of "heaps" as a stage of both cognitive and literary development (1978, pp. 57, 68) illuminates by contrast the pattern and structure which all the theorists agree qualifies and gives meaning to an experience. The mastery of the discriminating features which make a story may be paralleled to the ability to discriminate the relationship of consequence and meaning.

Skinner describes the progression from self-description to general description which is the beginning of verbal practices developing "rules."

An advanced verbal community generates a high level of such awareness [of our behavior and the relevant variables involved]. Its members not only behave appropriately with respect to the contingencies they

encounter in their daily lives, they examine those contingencies and construct rules--on the spot rules for personal use or general rules which prove valuable to both themselves and the community as a whole. (1969, p. 245)

The development of rules involves movement from behavior which is contingency-reinforced into behavior which is "rule-governed." The analysis of contingencies thus involves behavior which is not reinforced by those contingencies, but by the verbal community.

The community teaches description which becomes more effective as it is refined. "A crude description may contribute to a more exact one, and a final characterization which supports a quite unambiguous response . . . A child learns to describe both the world to which he is reacting and the consequences of his reactions" (p. 143). Individual description becomes "public property" (p. 139) and the more refined or powerful the description, the more valuable:

Much of the folk wisdom of a culture serves a similar function. Maxims and proverbs describe or imply behavior and its reinforcing consequences. . . . Maxims usually describe rather subtle contingencies of reinforcement, which must have been discovered very slowly. The maxims should have been all the more valuable in making such contingencies effective on others. (pp. 139, 140)

#### Literature Presents Experience for Reflection

Literature, by its very nature, presents experience stripped of the extraneous and intensified in meaning. It provides complete



experience, unity of theme and content. The intent and level of complexity of a work may make this unity easily perceived or perceived with difficulty, but it makes meaning available without direct experience. The construal of experience and the meaning are available to composer and consumer, and the experience of each is broadened.

Dewey, Skinner, Chukovsky and Applebee all point to the role of literature in providing an occasion for reflection. Literary description presents experience in a coherent and complete form which invites and enhances analysis. The connection made by the theorists between language development and cognitive development appears in the role of literature as well. Dewey makes the claim that

an experience of thinking . . . differs from those experiences that are acknowledged to be esthetic, but only in its materials. . . . In short, esthetic cannot be sharply marked off from intellectual experience since the latter must bear an esthetic stamp to be itself complete. (1934, p. 38)

Chukovsky makes an important point regarding the particularly effective role of a literary presentation of experience. All the theorists point to the limited experiences of the young, and the slow development of the ability to describe and reason about experience. According to Chukovsky, the child's limited experience and perception makes realism, detail and scientific orientation inappropriate as a means for the child to gain and order knowledge of the world. Chukovsky describes poetry, nonsense and fantasy as powerful expressions

of experience which allow the child to conceptualize and bring meaning to the world. Bruno Bettelheim more recently identified this issue in The Uses of Enchantment (1976). Bettelheim points to the crucial need of the child "to find meaning in his life" and states that after the primary

impact of parents and others who take care of the child; second in importance is our cultural heritage when transmitted to the child in the right manner. When children are young, it is literature that carries such information best. (p. 4)

Bettelheim, like Chukovsky, rejects stories which are inadequate or inappropriate to the child's needs. According to Bettelheim, the experience of literature provides "access to deeper meaning, and that which is meaningful to [the child] at his stage of development (p. 4). Bettelheim identifies the fairy tale as the particular form of literature which expresses this meaning best. Both Chukovsky and Bettelheim are concerned with the need of the child "to bring his inner house into order, and on that basis be able to create order in his life" (Bettelheim, p. 5) and both identify literature--which is rich in "overt and covert meanings" (p. 6)--as most useful to the child.

Here is the crux of the rejection of the realistic or scientific. Even the fairy tale includes realistic detail: at one time the spinning wheel was an important technological advancement, yet it has its place in the fairy tale. The crucial point is that the material under treatment is human experience. Chukovsky and Bettelheim turn

to literature because of the refinement and concentration of meaning found there. The realism, detail and scientific orientation in stories are not qualities which function in opposition to knowledge of the world and experience, however stories whose purpose is to provide information of a realistic or scientific nature are contrasted with stories which express the meaning of human experience, and found inappropriate in terms of the needs of the child.

All the theorists point to the role of the aesthetic and the literary in providing a description of experience which is rich and complete. This description expresses consequences which are often quite subtle and recognized quite slowly, thus providing an optimum occasion for the analysis of experience without the need to undergo consequences.

#### Type and Content of Literature for a Thinking Skills Program

Having established the efficacy of literature as an occasion for reflection, this study now addresses the type and content of the literature to be used. This section examines two extremes of literature and discusses pertinent issues which bear on the selection of materials.

#### Classic Stories as Rich Description of Experience

Bettelheim echoed Chukovsky and Skinner in his indication of the richness and power of meaning available in the folklore of a culture. The refinement of folk and fairy tales over centuries of repetition



has given them particular richness, complexity and depth. The exquisite power of classic stories to express the child's innermost concerns and struggles makes them an extremely important resource for the child. Their aesthetic quality provides the primary delight which attracts the child and allows for their psychological impact.

Bettelheim (1976) states that

The delight . . . the enchantment we feel, comes not from the psychological meaning of a tale (although this contributes to it) but from literary qualities--the tale itself as a work of art. (p. 12)

Bettelheim stresses the responsibility of adults to assist the child through making fairy tales available in their most complete and complex form. However, Bettelheim cautions against the attempt to use fairy tales in a more direct way. Though adults may have some knowledge of concerns on the part of a child, Bettelheim insists that it is not possible to finally know which story will be exactly right for a particular child. The wise adult will make a variety of the tales available and the responses of the child guide the selection of stories.

The eagerness a child displays for hearing a particular story gives clues regarding the relevance of that story to the child's concerns and may even illuminate the adult's knowledge of those concerns. However, Bettelheim stresses the point that this process may not be recognized or consciously understood by the child and cautions against attempting to bring this into awareness or explain it:

Explaining to a child why a fairy tale is so captivating to him destroys, moreover, the story's enchantment, which depends to a considerable degree on the child's not quite knowing why he is delighted by it. And with the forfeiture of this power to enchant goes also a loss of the story's potential for helping the child struggle on his own, and master all by himself the problem which has made the story meaningful to him in the first place. (p. 18)

Bettelheim's statement of this issue seems an echo of Chukovsky's concern regarding the developmental inappropriateness of an approach which is realistic or practical.

#### The Necessity of Personal Response to Literature

Louise M. Rosenblatt, in her classic Literature as Exploration (1976), adds insight to the complications which may arise with an inappropriate approach to the use of literature. In discussing teaching literature, Rosenblatt begins with the role of literature in portraying experience:

Certainly to the great majority of readers, the human experience that literature presents is primary. For them the formal elements of the work . . . function only as a part of the total literary experience. The reader seeks to participate in another's vision--to reap knowledge of the human spirit, to gain insights that will make his own life more comprehensible. (p. 7)

Rosenblatt recognizes that personal response to the experience presented by literature is primary. The emotional response to literature in individual terms is vital: it provides the foundation upon which the ability to appreciate literature is built.

Rosenblatt emphasizes the need for teachers to allow a personal response to literature (or provide for it if necessary) before instituting analysis. She does not deny the importance of literary form or structure, but stresses the fact that the "spontaneous response should be the first step towards increasingly mature primary reactions" (p. 75). The personal response is a "necessary condition of sound literary judgment, [but not] a sufficient condition" (p. 75). Analysis of meaning, whether of a deep personal nature or of a technical nature, proceeds from and is built upon a personal emotional response.

#### Negative Consequences of the Demand for Premature Analysis

Emphasizing the role of literature in expressing human experience, Rosenblatt describes the negative impact that may result from the demand for analysis before a personal response has been allowed. Focus on analysis before allowing a personal response distorts that response and may totally prevent any real understanding of the experience portrayed. Rosenblatt describes a positive approach:

The difference is that instead of trying to superimpose routine patterns, the teacher will help the student develop these understandings in the context of his own emotions and his own curiosity about life and literature. (p. 66)

Rosenblatt stresses the possibilities for developing skills of interpretation and analysis, both in the use of technical approaches to literature and in the understanding of experience. Approaches to literature (and life) which involve the application of reason serve a very important function and the teacher must actively establish them as a part of the classroom program.

Rosenblatt's focus is the teaching of literature at the secondary level, but her description of the proper sequence of instruction is enlightening. The personal, emotional response to literature is the critical foundation upon which skills of analysis are built. In working with the young child, the personal, emotional response may constitute the major portion of the task, given the developmental level of the child's abilities. The ability to articulate and analyze the meaning of experience develops slowly.

This is not to say that the young child cannot develop habits of analysis and reflection in response to literature. However, careful consideration must be given to the points above regarding the appeal of folk and fairy tales. Bettelheim and Chukovsky give evidence of their power: the time required for the child to internalize the content and meaning may be extensive. Given the time required and the negative effects of forcing premature analysis, it seems that the use of fairy tales as the focus in a program for development of thinking skills could be problematic or inappropriate. Thus, while the fairy tale has an undeniably important place in children's lives and there are strong reasons for including the tales in story times in the

classroom, fairy tales are not necessarily appropriate material for the focus of lessons aimed at the development of thinking abilities.

### Stories as Vehicles to Embody Philosophical Issues

Lipman, et al. have suggested that the best means for providing the occasion for reasoning in such a setting is a story created specifically for those purposes; a story contrived to contain the necessary approach and issues. Philosophy in the Classroom (1980) describes the Philosophy for Children Program which "stages" the introduction of philosophy to children in kindergarten through second grade using "a story or stories together with a manual of activities and exercises for the teacher's use" (p. 51). These stories are part of a "special body of literary works" created by the authors of the program. The stories "embody and display" the modes and techniques of philosophical inquiry and contain situations which present problems of a philosophical nature (p. 51).

Lipman praises "the richness of children's folklore" and contrasts it with "children's literature [which] is generally written for children rather than by children." He continues "the chef d'oeuvre of the world of children's literature is the fairy tale" (p. 35). Lipman recognizes the antiquity of fairy tales and the richness of "the possibilities [they] spread out for interpretation" but insists that "the point to note, however, is that the authors of fairy tales are grownups" (p. 35). Lipman suggests that when adults create for children, the very delight and creativity involved tend to rob the children of the stimulus and opportunity to create for themselves. He suggests that "if adults

must write for children, then they should do so only to the extent necessary to liberate the literary and illustrative power of those children" (p. 35).

Lipman's position on the importance of philosophy for children as a method of teaching thinking, and the nature and purpose of literature for children presents both insights and problems for examination. Lipman states that "just as the perfection of the thinking process culminates in philosophy, so too is philosophy par excellence, the finest instrument yet devised for the perfection of the thinking process" (p. xi).

#### The Connection Between Philosophy and Literature

Lipman recognizes the early connection between philosophy and literature: "prior to Aristotle, in fact, philosophy was virtually embodied in some literary vehicle (pp. xi, xii). Lipman emphasizes the teaching/learning nature of philosophical inquiry and recognizes that "ever since Plato, efforts to present philosophy in a manner that is popularly accessible and yet that has authenticity and integrity have been very few and far between: (p. xv). He insists that it is this very issue that makes the need for instruction in philosophy crucial today:

But philosophy cannot be force-fed to people; they must want it. And they must somehow be motivated to want it--perhaps by the sorts of literary devices the Greeks employed. . . . A people that wants its posterity to be wise can do no better than create a vast repertory of



artistic activities embodying those values whose pursuit it wishes to inculcate, . . . Of foremost importance in that repertory will necessarily be a variety of new curricula that will help children think for themselves, . . . (pp. xv, xvi)

Thus the Philosophy for Children Program includes a recognition of the need to develop thinking skills in children, a recognition that literature poses the occasion for reflection, and an emphasis upon the practical purpose literature serves as a device to embody philosophical issues.

#### The Rejection of Literature Created by Adults

Although there at first appears to be a paradoxical embrace and rejection of literature for children, examination reveals that literature or "literary works" as they are described, are only considered acceptable in terms of their practical use as vehicles for philosophical inquiry (and possibly to encourage children's imagination). Literature written for children by adults is suspect. Lipman cautions against doing for children "what they should do for themselves" (p. 36) and takes care to rationalize the stories written and used by the Philosophy for Children Program. In discussing these stories, Lipman states that "our purpose is not to establish an immortal children's literature, but to get children thinking. If this purpose is attained, the instrument can self destruct, . . ." (p. 36).

Lipman voices the concern that "there is something unwholesome, even parasitical" in the adult creation of works for children in the

sense that such works depress creativity in the child (p. 36). The Philosophy for Children Program will create books for children "that will promote their creativity rather than diminish it" until "we can devise effective ways of getting children to think for themselves" (p. 36). In Lipman's theory then, the literary text as he has created it serves only a practical function as the vehicle for an issue for philosophical inquiry.

Beyond these concerns, Lipman takes a strong stand regarding the importance of teaching philosophical inquiry to children and the need to present experience in a way which attracts and engages the child. "Children for whom the formal presentations of philosophy are anathema may find hints of the same ideas entrancing when embedded in the vehicle of a children's story" (p. 42). Thus, though problematical, literature is identified as an effective means of providing an occasion for the development of reasoning abilities.

#### The Need for Developmentally Appropriate Material

Chukovsky's perceptions regarding the unreadiness of the child for detail and facts are illustrated by Lipman's point. Adult formulations and organizations of material may not address the developmental readiness of the child and the need for the presentation of material in a form which is appropriate. Bettelheim addressed this same point in his statements regarding the negative effects of explaining the attraction of the fairy tale to a child.

In a like manner, neither Dewey nor Skinner supports the notion that knowledge is imparted in the form of "ideas." Knowing how to

reason and the "knowing that" which is its result are embedded in experience. John Dewey (1970) decries philosophies of education which assume "the externality of the object, or end to be mastered to the self" (pp. 6, 7). This assumption of externality leads to the view that the subject matter has no intrinsic interest to the child, and must therefore be "made interesting" by artificial means or forced on the child by the demand for the exercise of will power.

Dewey identifies the "genuine principle of interest [as] the recognized identity of the fact to be learned or the action proposed with the growing self" (p. 7). This principle of recognized identity illuminates the connection that may be made between literature for children and the effective occasion for reasoning. Further, it provides cues to the selection of stories for use.

While stories such as fairy tales may present experience in a form so rich and complex that the task of analysis may conflict with the personal response, the practical-didactic tale may lack the aesthetic quality which effectively expresses experience. The four theorists examined connect the aesthetic with the cognitive. Dewey refers to the difference between the aesthetic and the intellectual as "one of the place where emphasis falls" (1934, p. 15).

The indispensability of the aesthetic argues against the use of didactic stories as a focus for reasoning. Chukovsky contends that exposure to inferior literature may "cripple" the aesthetic tastes and literary abilities of children (1963, p. 73). The aesthetic is, therefore, both necessary and attractive.

C H A P T E R   I I I  
DESCRIPTION OF THE STUDY

Based on Dewey and Skinner's definition of thinking as data collection, problem-solving and reflective analysis of experience, a program was designed to develop thinking skills through listening to and discussing stories. The aim of the work was exploratory: a descriptive rather than a statistically significant study was intended, but some practical exploration of the ideas and examination of the issues which emerged in application was deemed crucial. In particular, data which would help answer certain questions was sought: would stories for children provide a useful occasion for developing thinking skills? What particular types of stories would work best? What positive outcomes could be observed in the skill development of the children who participated in the program? Would working together in groups enhance the development of thinking skills in children, and what evidence would suggest this outcome? What aspects of the teacher role would be most effective in developing thinking skills in children? Implementing the program provided data helpful in answering these questions.

The Setting of the Program

The program was planned for and implemented in a first/second grade class in a public school. Permission for the program was granted by both the administration and the parents of the children. The class

was a typical class from one of the five elementary schools in town. The class was about equally balanced by sex, and included a variety of races, cultural heritages and native languages. The community is a basically prosperous, middle-class, semi-rural town in Massachusetts whose main industry is education. Five major colleges or universities are located nearby. The public schools have a reputation for quality.

### Initiating the Program

During the fall of 1982, plans were made for the program. Parental and administrative permission was obtained in order for children to participate. Only one parent refused permission. That child participated in discussions as a part of his regular instruction, but his responses were deleted from transcriptions and were not used in analysis and discussion of the program.

### The Teacher and the Class

The teacher who began the thinking skills program with her class is designated Teacher A in this paper. Her class consisted of both first- and second-grade children, and both beginning and more-advanced readers. Teacher A was replaced by a substitute teacher about half-way through the program, when Teacher A took a maternity leave. The substitute teacher is designated Teacher B in this paper.

The story discussions were begun in January 1983. Teacher A conducted the first three story discussions. This process took about eight weeks. After this time, at the beginning of March 1983, Teacher B

took over the class. She continued the story discussions, following guides developed for her use for the remaining stories. Teacher B conducted three story discussions, terminating the program in April 1983.

Children in Teacher A's reading groups participated in the thinking skills program. The story discussions were conducted with the existing reading groups. Teacher A worked with five reading groups, consisting of four to eight children each. Groups were formed on the basis of reading ability, and the specific, individual needs of children. Four of the groups consisted of beginning readers who were working at generally the same level, and in the same materials. All but one of these children were in first grade. The second-grade student was beginning instruction in English, and the placement in a beginning reading group was intended to facilitate this process.

Five of the twenty-five students composing the reading groups spoke a native language other than English. One of the children was totally bilingual at the time of the program. Two children were at least minimally proficient in English, and two were, as yet, not proficient in English. The native languages represented included Japanese, Chinese and Spanish. The two students who were not proficient in English were included in the story discussions to the degree that seemed appropriate. They were always present for the story and were included in the discussion for some questions that they could understand and answer.

Preliminary questions of a concrete nature served to establish the "facts" of the story for all the children. These questions served



the additional purpose of developing the vocabulary and deepening the understanding of children whose language skills were limited. The students who were not proficient in English were not required to remain and participate for the entire story discussion, but were released to an alternative activity at an appropriate stopping point.

Beginning readers were divided into four reading groups, Group One, Group Three, Group Four and Group Five. One of the groups (Group One) consisted of children who were able to attend and perform adequately in a large group of seven children; the other three groups consisted of no more than four or five children each. The groupings were designed to meet various instructional and individual needs within the classroom, including difficulty with reading, difficulty with attending and focus, and the need for extra assistance in addition to the regular classroom program because of difficulty with reading or the English language.

Groups Three and Four were merged into one instructional group during reading instruction in the classroom and during the story discussion for the thinking skills program. Group Three consisted of four children. Two had limited skills in English. Group Four consisted of five children who received extra support from the Reading Resource teacher for one half-hour each day in addition to the regular classroom program. When Group Four left the classroom to work with the Reading Resource teacher, Group Three worked independently on reinforcement materials.

Group Five also consisted of children who received extra support from the Reading Resource teacher for one half-hour each day. This

group of four children was instructed separately in the classroom in order to support attending behaviors, completion of work, and the development of English language skills. One member of this group received an additional half-hour of English-as-a-Second-Language tutoring each day. During this time the other members of the group worked in the classroom on reinforcement materials.

The remaining group, Group Two, consisted of five second-grade students working on grade-level materials in reading. The small group size was due merely to the number of children working at that level.

Group One is examined in detail in this study because it presents a particularly useful example of the story discussion groups. Group One was involved in every story discussion. It included children with a variety of needs and styles which influenced the operation of the group, and several events within the group discussions illustrate implications for the administration of a thinking skills program.

#### Description of Group One

Group One consisted of seven children; two girls and five boys. Although all the children were working on grade-level in the same materials in Language Arts, they varied greatly in their approach to academic tasks and in their needs.

Adam was a mature and thoughtful first-grader who was able to form opinions and defend them in discussions. He was responsive to others without being overly subject to peer pressure. He tended to contribute frequently in class discussions and often contributed details from his experience and knowledge of the world at large.

Alana was also a mature and thoughtful first-grader. She was not a particularly active participant, but contributed to discussions in ways that indicated that she had given close attention to them. Alana generally avoided taking risks in her work: she usually volunteered a comment only when she felt secure that her answer would be correct.

Frank was a chronologically mature first-grader who exhibited immature behavior: while he was one of the older first-grade children, he was dependent upon adult attention and often resorted to baby talk or babyish behavior. He relied upon being "cute" as a source of power and attention. He was an intelligent child, capable of insightful and creative work, but dependent upon teacher assistance to perform up to his potential.

James was also one of the older first-graders. He had difficulty with organization: he was physically uncoordinated, frequently exhibited speech dysfluency and often had difficulty organizing his ideas. Treatment of amblyopia prescribed by an ophthalmologist involved patching James' "good" eye, requiring James to use his weak eye, which functioned with twenty/three-hundred vision. The treatment was an attempt to strengthen the vision of this eye. James was seated near the teacher during story discussions. In spite of his difficulties, which at the time of the program were being addressed through Special Education support for speech and language, James was an average performer academically. In the estimation of Teacher A, James was above-average to superior in potential. James' ability to contribute insightful and penetrating summaries or evaluations of the situations

in the story discussions belied the occasions when he appeared to be confused or unable to deal with pertinent issues.

John was the youngest of the children who were "age-appropriate" to first-grade. He turned six at the end of November 1982. In spite of this, his behavior and intellectual performance were consistent with the most mature of the first-grade children. He was insightful, creative and willing to take leadership in a group. John had a great interest in science and frequently took a scientific position in class discussions. He was a strong propounder of his views.

Juliet was a young first-grader who was thoughtful and creative. She often made connections between her experience in the world at-large and her experience in the classroom, bringing up examples or making applications from her experience to illustrate or expand upon the subject at hand. She was willing to speak up but did not often seek leadership.

Saburo was a bilingual child, fluent in Japanese and English. He was the youngest child in the group: he had just turned six in January, when the discussions began.

### Classroom Expectations

Certain regular classroom expectations had an important impact on the story discussions. Story times were an important part of instruction: children were expected to sit up and give attention. While lying down, playing quietly with materials or interacting quietly with friends might be considered appropriate during story time in some classrooms or

day-care settings when a story is intended as a quiet time, in this classroom these behaviors were not permitted. The attending behavior appropriate to a learning situation was expected.

In most parts of the classroom program, there was a firm expectation that children raise hands and be called upon before entering a discussion. In the story discussions, this was not always rigidly required due to the desire to encourage discussion and focus the children's attention upon the responses of their peers. Still, children were expected to listen to the responses of others without interruption.

### The Teacher Role

The teacher role was active; calling upon children, reminding children whose turn it was to talk, using a summary of what had been contributed to both reinforce the speaker and remind listeners of the content, and inviting children to respond in terms of what had been offered by the previous speaker. Consequently, a teacher comment usually punctuated each student response.

The role of the teacher as an active facilitator was an extremely important part of the program design. A teacher role which facilitates the confrontation by students of the ideas put forth in a story and put forth by others in a discussion group contributes to the development of the group, and the development of individuals as well. Hilda Taba reported that an increased accomplishment of thinking takes place in a group when the ideas contributed by each member stimulate and deepen



the thinking of others: "The author has observed many classrooms in which group thinking produces by cross-stimulation chains of ideas which reach a fullness and maturity no single individual could achieve alone or with only the help of the teacher" (Curriculum Development, Theory and Practice, 1962, p. 165).

Another important aspect of the planning and administration of the program proceeded from Teacher A's knowledge of the personal and academic skills and needs of each student. The guide for the discussion contained questions that ranged from the easy to the difficult, from the concrete to the abstract, and from the safe to the threatening. This range of questions allowed the teacher to attempt to provide for meaningful participation by each student. The discussions were most effective when all students participated: anticipating the ability of some students to answer primarily easy or more concrete questions and making provisions for those students to participate early in the discussion helped ensure their participation. (This does not necessarily imply that the less-able students participated first. Often the children who needed easier questions or concrete questions were intellectually able, but shy or slow to respond.)

The emphasis in the program was upon participation and contribution to the discussion by all students. All responses were considered valuable and valid for consideration. In practice, it was necessary to monitor and sometimes modify the nature of student comments, but in general, all contributions were validated by Teacher A. This teacher response emphasized the priority of participation and the focus upon



the process of discussion rather than a particular point of view. Teacher A did not require that the responses of individuals conform to the opinions or perceptions of the other children or the teacher.

This teacher role supported individual progress and also provided an essential model for the participants in the discussion. Failure to treat a contribution as valid would invite similar behavior in the students, which would be especially damaging in a group where discussion skills were in a formative stage.

### The Story Discussions

A total of six stories were used as foci for discussion during the course of the program. Because it was not always possible to conduct the story-discussions on the same or even the following day, they were held as was appropriate and convenient.

The sessions for the program involved reading the story to the children and following the reading with a discussion. The entire session lasted about thirty minutes. Some sessions ran over this time, but the children were not able to sustain work of this sort for much longer than thirty minutes. Some sessions were terminated early when the discussion became unproductive.

In some cases all groups participated in the story discussions. In two cases, Group Five did not participate in the story discussions. In the first case, absences within the group and classroom contingencies interfered with the scheduled discussion. In the second case, Teacher B chose to omit the group from discussion. This was also the case with one discussion by Group Three/Four.

The Selection of the Literature to Be Used

The objective of this study was to provide a setting for the development of thinking skills. Children would hear and discuss stories, recall data, engage in problem-solving and analyze experience as presented in the story. The selected stories had strong aesthetic power, yet were amenable to immediate analysis.

Stories from Frog and Toad Are Friends, Mouse Soup and Owl at Home, written and illustrated by Arnold Lobel, were selected for the thinking skills program. Lobel is a popular and respected author and illustrator who has written many books for children. Lobel received a Caldecott Honor award (a runner-up citation) for the illustration of Frog and Toad Are Friends in 1970. He received a Newberry Honor Award (also a runner-up citation) in 1973 for the text of Frog and Toad Together. Mouse Tales was listed in "Recommended Paperbacks" in the February 1979 issue of "Hornbook Magazine" and Owl at Home was reviewed in the December 1975 issue of the same magazine.

Lobel's works are widely recognized for their quality in the field of children's literature. Best Books for Children Preschool Through the Middle Grades (1981) acknowledges many of Lobel's books including all those used in this study. The Best of Children's Books 1964-1978 includes Frog and Toad Are Friends, Mouse Soup and Owl at Home as well. Lobel won the Caldecott Medal for his book Fables in 1981.

The characters in the Lobel stories selected for this study are animals who behave as if they are people. They encounter and create

predicaments which are basically human rather than animal in nature. In Lobel's stories, the animal characters have human personalities and the context of their experience is human. They are essentially "little people" both in size and behavior.

The stories selected for the classroom program represented characters, action and setting readily understandable to children aged five through seven years. The vocabulary and sentence structure make access to content easy. Although the situations themselves are straightforward, they present complex and interesting implications for analysis. The stories do not require recognition or analysis of these implications in order to understand or enjoy them, but they do invite it.

The problem-solving behaviors and the reasoning by the characters involve outrageous and amusing violations of reality or common sense. This nonsensical and humorously irrational quality provides enjoyment and involvement on the part of the children and also stimulates examination of the reasoning of the characters involved.

Lobel's books are especially appropriate to a thinking skills program, since each book contains five or six short stories about the same character or characters. The brevity of each of the stories allows sufficient time for discussion and analysis within a thirty or forty minute time frame. The brevity and straightforward quality of Lobel's stories made them especially appropriate for a program requiring immediate analysis.

### The Stories Used in the Program

In Mouse Soup, (1977) "The Crickets" tells the story of a mouse whose sleep is disturbed by the chirping of a cricket. When the mouse calls to the cricket, the cricket responds "I cannot hear you and make music at the same time" (p. 32). The mouse replies, "I want to sleep. I do not want any more music" (p. 33). Here, the crucial conflict appears, for the cricket only hears the end of the mouse's request, and responds willingly with "more music." The problem situation escalates; more crickets and more music. Each exasperated request by the mouse ends with a phrase which inadvertently invites more noise until finally the mouse says "I wish you would all GO AWAY." Hearing "Go away," the cricket responds "Why didn't you say so in the first place?" (p. 40). The crickets depart and the mouse returns to bed.

The second story, "Spring," is from Frog and Toad Are Friends (1970). Frog arrives at Toad's house one April morning to call Toad out into the world for "a whole new year together" (p. 8). The phlegmatic Toad answers "bleah" from his bed, rises unwillingly and resists the efforts of the vivacious Frog to keep him in the April sunshine. "Wake me at about half-past May," says Toad as he returns to sleep. Gazing at the calendar which still marks November when both Frog and Toad went to sleep, Frog conceives a plan. He quickly tears off the pages November through March, then tears off April as well. He awakens Toad once more and shows him the May calendar. Toad hops out of bed and the friends depart "to see how the world [is] looking in the spring" (p. 15).

The remaining stories were all from Owl at Home (1975). Owl is a solitary character involved in activities or difficulties which center upon his home life. In "Upstairs and Downstairs" Owl (who is downstairs) frets "I wonder how my upstairs is?" Upstairs, Owl says, "I wonder how my downstairs is getting along? I am always missing one place or the other" (p. 42). Pondering that there must be a way to be in both places at one time, Owl attempts to do so by racing madly up and down the stairs, calling to himself from each place. In each case, "There was no answer. 'No,' said Owl, 'I am not downstairs because I am upstairs. I am not running fast enough'" (p. 44). After an evening of frantic attempts, exhausted, "He sat on the tenth step because it was a place that was right in the middle" (p. 49).

In "Strange Bumps" Owl encounters difficulty when strange bumps appear under the covers at the foot of his bed when he retires for the night. Peering under the covers, all he can see is his feet. When the covers are replaced, the strange bumps reappear. All manner of exhortation and thrashing about does not provoke a response or a retreat from the bumps. Finally, his bed a shambles, Owl departs to sleep downstairs in his armchair.

In "Owl and the Moon" Owl sits at the seashore and watches the moon rise. "If I am looking at you, moon, then you must be looking back at me. We must be very good friends" says Owl (p. 53). The moon does not answer, but Owl sees the moon "follow" him as he walks home. Owl counsels the moon not to follow him: "You must stay up over the sea where you look so fine" (p. 56). He shouts "Good-bye moon!" (p. 58)



from a hilltop. Clouds cover the moon and Owl continues on his way home. At home, dressing for bed in his room, Owl is sad at the thought of saying "good-bye to a friend" (p. 60). When silver moonlight floods the room, Owl says, "Moon, you have followed me all the way home. What a good, round friend you are!" (p. 62) and goes to sleep happy.

In "The Guest" Owl, sitting by the fireside during a winter storm, hears a loud sound at his door. Finding only the wind, snow and cold outside, Owl concludes that the "poor old winter" wants to come in and "sit by the fire. Well, I will be kind and let the winter come in" says Owl (p. 9). Winter comes in indeed, and Owl's house is filled with snow. His pea soup turned to green ice despite his protests, Owl cries, "You are my guest. This is no way to behave!" and tells winter to go (p. 13). When winter rushes out the door, Owl makes a new fire and finishes his supper.

#### Planning the Story Discussions

Planning for each story discussion involved the selection of a story and generation of a guide containing questions to cover the data in the story and the nature of the problem involved. The questions were designed to elicit the important details, or "facts" of the story as necessary, and invite identification, analysis and evaluation of the problems and solutions in the story.

The guide for each story was prepared in advance and used during the discussion. It was designed as an aid, not an inviolable protocol. Questions included in the guide were to be omitted when discussion covered the relevant material or when the questions were not germane



to the discussion. Alternative questions were often generated spontaneously in the discussion as seemed appropriate. A sample guide is included in the appendix with typical questions.

In an early story discussion ("Spring") Teacher A departed from the guide to fantasize with the children about what would happen if one could change all calendars from March to April. Would time change? While this fantasy was not a planned part of the program, it emerged as a creative opportunity during the discussion. The freedom to explore in this manner provided important data which will be discussed in Chapter V under planning a full-scale thinking skills program.

Other departures from the guide were due to the exigencies of the classroom or the situation in particular groups. Teacher A varied pace and tone and the focus of questions in response to needs she observed in groups. She omitted questions with some groups when other questions seemed more important to pursue, when the questions seemed unnecessary, or when she felt the questions had not proved effective in use with other groups.

### Practical Application

Two works by Ronald Hyman guided and illuminated planning and analysis of the story discussions. In Ways of Teaching (1974) and Strategic Questioning (1979) Hyman examines methods by which teachers may more effectively develop thinking skills in students. He identifies questioning as a prime tool in the development of thinking skills and elaborates implications and strategies for use.

Several areas in Hyman's work were identified that appeared relevant to the program: the use of a variety of types of questions to supplement alternatives to empirical responses, the use of questions for only positive purposes, providing wait time to encourage student responses and providing positive encouragement of student responses.

#### Providing a Range of Questions

Provision was made in planning for a range of kinds of questions. Questions involving recall of factual details of the story were important in ensuring that the students had adequate and accurate information, but questions that encouraged inference, analysis, evaluation and application were important as well.

In Strategic Questioning (1979), Hyman states that questions which elicit empirical responses--that is, questions which "ask for facts, comparisons and contrasts among facts, explanations of events, conclusions based on facts or inferences which go beyond the facts on hand" (p. 11) constitute over eighty percent of the questions asked in classrooms (p. 17). Hyman describes the need for other modes of questioning and response as well, including definitional and evaluative approaches. "By asking a variety of questions and considering the responses in terms of the verification needed for them, we introduce the respondents to a fuller view of the world in general" (p. 17).

Many of the skills the thinking program sought to develop are included within the empirical mode described by Hyman. One justification for the preponderance of empirical questions with young children

was the developmental stage of the children involved. As Chukovsky noted, the young child is in process of developing secure knowledge of what is real and what constitutes dependable facts about experience. Consequently, the teacher can assume less about what the young child "knows" about a given story. The exploration in detail of salient empirical features of the experience portrayed in a story is a necessary and productive approach. Most questions posed in the formats were empirical in nature, but Hyman's point was well-taken and important to bear in mind in developing the remaining questions. Care was taken in the guides to include questions which elicited evaluative responses from students, calling for the expression of attitudes, feelings, moral views and personal beliefs.

#### The Use of Questions for Positive Purposes

With regard to the questioning process itself, Hyman comments on the negative effects which may accrue in the classroom when questions are used to maintain order or punish those who are not prepared (p. 4). Both Teacher A and Teacher B avoided using questions which put children "on the spot" because they were inattentive or unprepared to answer. The children were generally at ease about answering, without undue concern for the completeness or accuracy of their answers. This may partly reflect developmental level: the children were just learning to engage in discussion. Children will only gradually come to a sharper awareness of expectations in terms of attention and precision in classroom discussions.

This is not to imply that the children were always attentive or that questions were never used to cue their attention. Young children are often cued for attention by questions, and their responses are often based on little deliberation. The important factor was the atmosphere of acceptance, and the lack of intimidation provided by the teacher in the questioning process. The discussion plan provided encouragement and repetition if children did not understand or were not ready and the children usually responded through their own initiative rather than teacher direction.

Hyman noted the importance of the atmosphere of acceptance in Ways of Teaching (1974):

The point is simply this: if the activity is to be called teaching, the teacher must respect the student, must seek to minimize anxiety and threat, and must seek to establish mutual trust. (p. 25)

#### Providing Wait-Time to Encourage Student Responses

The provision of adequate time for students to formulate a response is an important point connected to the points discussed above. Hyman refers to research which indicates that teachers usually wait less than one second before reacting to a response, or rephrasing or moving on if there is no response. He discusses significant positive effects when teachers wait for three to five seconds before reacting. Those effects include longer student responses, increased "unsolicited but appropriate" responses, fewer cases of non-response, and increased

confidence on the part of students. In addition, speculative thinking, offering of evidence, alternative explanations, inferential thinking connected to the evidence, questions by students and responses by "slow" students increased (1979, pp. 101, 102). Positive effects are not limited to the students' performance: Hyman notes that "teachers became more flexible in their discourse, asked fewer questions, increased the variety of their questions, and improved their expectations of the performance of 'slow' students" (p. 102).

Implementation of this approach was directed in the plans for discussions. Analysis of the tapes indicated that, in most cases, students responded quickly to questions. When the responses took longer, the wait time by Teacher A was consistently four or five seconds. Further, she took care to pause in posing questions and summarizing points, to speak slowly but naturally and to pause after asking questions before she called on volunteers. Although Hyman recommends that teachers call on students before formulating the question as a means of providing balanced opportunities for student participation (p. 163), posing questions and pausing before the selection of a respondent was intended to encourage involvement on the part of more students; an approach which seemed more effective in terms of the goals of the program.

#### Providing Positive Encouragement for Student Responses

Teacher A relied heavily on restatement and positive encouragement of student responses to enhance participation. Tone of voice was an

extremely important factor: the phrase "O.K." may be voiced in a thoughtful tone that indicates that a point has been understood and invites further reasoning, or it may be delivered in a flat or perfunctory tone which implies that the desired response has been delivered and the next question will follow. (Hyman stresses the importance of tone in his summary of issues on page 263 of Strategic Questioning.)

While the tapes show that Teacher B provided adequate wait time for student responses, speaking naturally and tone of voice were areas of difficulty. This will be discussed in some detail in Chapter IV.

Hyman discusses the necessity of providing feedback of an appropriate kind to both clarify and enhance student responses. He recommends restating or "crystallizing" in order to capture in capsule form the essence of the remarks and ask if the speakers accept your crystallization (p. 135). Students may confirm or correct the restatement. In addition to sharpening focus, restatement may be a powerful message to students about the teacher's commitment to understanding and valuing their contributions. Restatement can be included with positive responses as a technique of reinforcement. This technique was used consistently by both Teacher A and Teacher B.

#### Analysis of Tapes and Planning

After the discussions began, analysis of the tape recordings of the discussions was a preliminary step in planning the next round of discussions. The tapes were then sent to a typist for transcription.



The transition from Teacher A to Teacher B required additional instruction and planning by the researcher. Prior to implementation of the program by Teacher B, the theories and practices involved in the program were discussed with her. It was recognized that assimilation and implementation by Teacher B was an area of potential difficulty: in addition to the questions for possible use listed on the guide provided for Teacher B, a section titled "For Emphasis" was included. This section articulated the points of major emphasis in the role of the teacher in guiding the discussion. They were points which had been emphasized in discussion with Teacher B during planning.

#### Completion of the Program

Teacher B attempted to follow the guides closely. After observing Teacher A conduct the discussion of "Upstairs and Downstairs" with Group One, Teacher B conducted the remainder of the discussions for "Upstairs and Downstairs" and discussions of two more stories: "The Moon" and "The Guest." She elected to terminate the program at that time.

When all tapes had been transcribed, analysis of the program was begun.

## C H A P T E R I V

### ANALYSIS OF THE DATA

This chapter contains the analysis of data collected from the transcripts as described in Chapter III. The analysis focused on evidence of gains in attitude and skills in the children.

#### Attitude and Participation

In order to describe the level of improvement, it was necessary to examine the degree and quality of social interaction within the group. Attitude as the researcher defined it in this case, involved receptiveness to the ideas presented in the story and presented by group members; that is, it required willingness to participate in the discussion and to entertain the ideas of others. It also required an examination of the merit of the ideas and actions in the story or discussion, not of the individuals who "owned" them. Individuals might agree or disagree with the actions and ideas presented in the story or presented within the group discussion, but a focus on issues, not individuals, was necessary.

Willingness to participate was demonstrated by children contributing details from the story or applying details from real life, expressing opinions and forming judgments about the story or the contributions of others, or contributing ideas which expanded upon or extended elements in the story or the contributions of others. Thus participation involved more than mere quantity of response in the discussion.

The researcher examined the transcripts for evidence of thinking skills: gathering and summarizing data, identifying problems, forming opinions or judgments, reasoning about implications of the story events or the contributions of others, creating alternatives, asking questions and focusing on thinking behavior as it could be observed in the stories.

Listening to and discussing stories was a familiar activity involved in various parts of the school program. The children moved easily into the story discussions for the thinking skills program and responded readily to expectations consistent with their classroom experience such as listening and participating.

In the first story discussion, the children did not hesitate to participate. Frank responded to the question "What was going on in the story?" with "Well, they were making too much noise and then she started saying 'stop it' and there was more crickets coming." Five more group members volunteered comments in turn, elaborating and explaining the nature of the problem in the story. Teacher A's comments merely served to restate or crystallize responses, and call upon the next volunteer during this sequence.

Since the formation of opinions and judgments and the exploration of alternatives were familiar aspects of both social situations and curricular areas (for example Social Studies and Science) the researcher assumes that this familiarity contributed to the ease with which the children adapted to the story discussions.

While the children were aware of general expectations regarding listening and participating, and responded appropriately to cues

regarding those expectations in the story-discussions, the students' performance depended greatly upon the teacher's ability to sustain and encourage those behaviors. This was borne out when there was a change of teachers: the quality of participation declined; the discussions became difficult to manage and were soon terminated. (See pp. 85-100 of this chapter for further discussion of this situation.)

The transcripts demonstrate that while Teacher A was in charge, the discussions proved a fruitful arena for student participation. Although patterns of participation varied individually, with some students contributing frequently and others maintaining a less-frequent pattern of response, all students engaged in the discussions and contributed responses voluntarily. While Teacher B was in charge a decline in positive attitude and participation is observable in the transcripts, although impressive incidents demonstrating skill development may be observed as well.

#### Participation and Skill Development

As the children grew accustomed to the process of the story discussions, positive gains in skill areas could be identified in the transcripts of the discussions. Students became more adept in the identification and articulation of the problems in the stories. Their responses became more elaborate and zeroed in more sharply upon the issues raised.

The general pattern of the discussion involved a teacher question or comment followed by a student response, then another teacher comment

or question. This pattern of discussion provided structure, clarification and reinforcement of responses, and also helped identify participants on the tape.

In planning the first story discussion ("The Crickets") the question "Is there a problem in the story?" was posed in the guide in order to invite problem identification in an open way. In the story discussion for Group One, Teacher A first asked "What was going on in the story?" Frank described the noise that the crickets made and the mouse's frustration. At that point, Teacher A asked, "So what was the problem?" The children described the relevant part of the action. Working out the cause of the problem, that is, the primary problem, took longer.

The researcher found that this pattern of response to questions about the problem continued in all the story discussions. From the beginning, Teacher A used questions about "a problem," and "the problem," and made reference to "talking about the problem in the story." The children responded easily and flexibly in all cases.

The first story, "Crickets," involves the difficulty a mouse has sleeping because of the noise made by a cricket. The cricket misunderstands the mouse's request for "no more" because he only hears the last word. The confusion escalates until the message is made clear.

The children actively discussed the story and the problem and demonstrated that they understood, but had some difficulty articulating the cause of the problem. Frank volunteered his summary of the problem (see page 64) and other children elaborated. Adam said there was "too

much noise" and Alana added, "but all the time she keeps saying 'go,' more crickets keep coming."

As was usual in the early discussions, some children saw more clearly than others what the problem entailed. After the first five comments by children, John volunteered "'Cause they don't understand her. They think that she wants more." John recognized the problem in the communication between the mouse and the crickets and stated it succinctly.

The other children did not respond to John's comment, but kept discussing the difficulty. Teacher A summarized after five more contributions and said: "I wanted to ask you a question. We talked about what the problem was, and you said it was when she said 'Stop' they kept giving her more. Why was that happening? You said they didn't understand."

Although the answer had been put forth by John, and Teacher A had provided cues to guide them, the majority of the children were not ready to arrive at a conclusion. Discussion continued as before: Saburo said, "They didn't hear good." Adam offered, "They're making the noise and they can't listen to what they're saying when they're making all the noise." He continued with the observation that "They're using their feet."

This was not pointless activity. The children were accumulating information and connecting it with concepts and events in their own experience in order to make more meaning out of the story. Adam's contribution that the crickets were using their feet showed that he



was implementing knowledge from his own experience outside of the story. He moved from the noise the crickets made in the story to what he already knew about crickets, namely that they make their noise with their "feet" as he put it. This connection with schemata possessed by the child is an important step in the comprehension of a story.

Juliet noted, "It's hard to hear when they're making music and rubbing their legs and their ears are 'way down here.'" She had taken account of Adam's information and added some scientific knowledge of her own about the location of a cricket's "ears." She continued with the comment that, in the story, the mouse was "why up there" (calling from the window) contributing another detail from the story to help puzzle out the meaning.

Teacher A attempted again to lead the discussion: "And she's way up in the air. Do they hear anything she says?" There was general comment, then James offered that the crickets heard the mouse say "Go away." Teacher A said "Do they hear anything else she said?"

Finally, John, who had followed but not participated since his earlier comment, said "Yeah. 'You want more? We'll get more.'" Teacher A said, "Why do you think they said 'you want more?'" Saburo and Frank commented two or three times each, reiterating what had gone before.

Teacher A asked, "Why do you think they were mixed up about that?" Saburo answered "I don't know" and Alana offered, "They thought that she wanted more and she didn't want more." Teacher A asked, "Did they hear any words?" Adam volunteered, ". . . 'cause they just heard her

say 'more.' 'Probably didn't hear the other part of it." Teacher A responded, "Didn't hear her say 'no.' 'You think that's true?" Juliet confirmed her opinion, and the teacher re-read the pertinent passage from the story.

In this discussion, the children worked toward a clear understanding of what happened in the story to create a problem. The discussion demonstrated that the story was not as simple as it appeared to be. Identification of the essential aspect of the problem was quite difficult.

Teacher A had taken a very directive role, leading the children toward recognition of the significant element. This approach was not helpful. Just as the children were not ready to recognize and accept John's definition of the problem, but needed time to explore and make connections, so they were not ready for intervention which threatened to attenuate the process.

#### The Impact of Development upon Student Performance

One interesting factor which recurred in the story discussions was the way the children willingly responded to the gamut of questions, but demonstrated varying abilities to understand and perform. The strongest example of this was in the effect that appeared in response to the question "Does this sort of problem ever happen with people [children]?" The question was included at the end of the discussion guides to encourage children to abstract the problem from the specific

context and generalize it into the context of their own experience. This outcome was never achieved. The children's responses indicated that, while they could supply an example of a similar concrete event, they could not identify an example of the generalization of the problem from their own experience.

### Providing Literal Examples

In the discussion of "The Crickets" Teacher A asked "'You think anything like this ever happens to boys and girls?" James and Saburo began to tell stories about how crickets kept them awake at night and they yelled at the crickets to be quiet. Adam reported hearing crickets when he took a walk with his parents, "but we usually don't step on 'em, we just like listening to them." Frank described a situation on television: "This girl, she was sleeping, and she . . . heard some 'clang, clang, clang' stuff and she couldn't sleep, . . ."

At this point, Teacher A attempted to guide the discussion in the direction of the more general problem: "We're talking about one mouse's problem; the problem that she's bothered by the noise. Can somebody tell what her other problem is?" Juliet answered, "Well, that the crickets didn't understand her words." Teacher A responded: "Her other problem was she couldn't make the crickets understand her. 'You ever have a problem like that?"

John responded with, "Well, on 'Sesame Street' there was this rabbit who was trying to sleep, and all these other animals were banging on drums, and playing flutes, playing trombones, and she

couldn't sleep." Although John made quite a strong connection-- identifying similar themes in stories from different contexts, the themes were literal story lines rather than generalizations about the problem.

Teacher A probed further: "James, you said, yes, it happens to you sometimes that you can't make people understand what you're saying. When do you have that problem?" James answered, "Every night, every night." Teacher A responded: "James, can you tell me about that?" James answered, "Well, not really."

#### Resorting to Fantasy

Although the children willingly entertained the questions, attempts to lead them to the abstraction were fruitless. They ignored the question, responded with concrete examples in kind, or launched into fantasy. These responses are appropriate to children in a concrete stage of development, and demonstrate the need for teachers to pose questions which are developmentally appropriate.

The resort to fantasy in response to the questions provides an interesting insight into Applebee's comments about the spectator mode (see p. 22 of Chapter II). Children listen to stories in the spectator mode, but discussion is conducted in the transactional mode. A response in the spectator mode might be a creation which is poetically similar in utterance to the original; the children provided this when they told stories about being kept awake by crickets. They used the spectator mode when they were no longer able to discuss the story in

the transactional mode. This may tend to support the view that the spectator mode is the primal mode from which other modes develop. Taken beyond their means in terms of the transactional mode, the children resorted to the spectator mode to express meaning.

When the children responded with concrete examples, they demonstrated the level at which they could produce and work with the ideas. Further pressure by Teacher A produced more examples, not deeper thinking. Further, the fantasy in which the children engaged in this setting can be discriminated from creative fantasy that occurs in response to a more positive stimulus. In the discussion of "Spring" the children entered into a creative entertaining of "what if?" regarding changing time by changing calendars. The creative thinking on this occasion was very different from the process where the children created stories about crickets making noise. Teacher A's pursuit of a desired response did not encourage or validate creativity.

#### Silliness as a Symptom

Another interesting factor which emerged in these discussions was the eruption of silliness in the children's responses. James told a story in which "every middle of the night I wake up and 'whoops, whoops, whoops . . .'" Saburo followed with, "Yeah, the same with me and I go, 'Shut up little crickets!'" James continued, "Then I go outside and step on them."

The emergence of silly or disrespectful language in this case was another indicator that the children were attempting to meet a

demand which exceeded their ability to perform. They attempted to respond to the question, but their silliness indicated some insecurity or discomfort regarding the task. Review of the session allowed the researcher the opportunity to change plans for further groups in order to avoid repetition of this approach by Teacher A.

#### The Purpose of Teacher Questions and Comments

Questions on the guide were designed to elicit important details from the story and to stimulate their use in the examination of issues introduced in the story or by students. The questions were intended to invite the expansion and extension of ideas. When they were not germane to the discussion, they could be omitted by the teacher.

In the program design, once a subject was initiated by a teacher question or a student comment, subsequent responses by the teacher were to serve the purpose of clarifying or "crystallizing" student responses in order to facilitate the discussion. Movement to the next issue was either initiated in the discussion by participants or initiated by the teacher in the form of a question leading to that issue, when movement seemed appropriate.

#### Number of Responses to Particular Questions

In the story discussion for "The Crickets," comments focused on the characters and nature of the problem involved fifty-five teacher and student responses combined. For "Spring," the teacher and student



responses focused on the characters and problem numbered forty-nine. These two stories involved more characters and a more-complicated problem situation: discussion of these aspects took up much of the discussion session.

The number of characters and consequent multiplicity of problems provided a rich occasion for reflection since so many viewpoints and needs and desires were involved. The movement into stories about Owl simplified the problem situation and the points of view, but still offered much for analysis. Owl's problem-solving could be observed in a series of stories, inviting generalizations about his problem-solving skills. His conversations with himself and his perceived companions invited analysis of his reasoning.

The problems in the stories about Owl were easier for the children to articulate. During the thirty minute class-time allotment for the story discussion, forty-four teacher and student responses focused upon the character and problem situation for "Upstairs and Downstairs." Twenty-three teacher and student responses were involved in the discussion of "Strange Bumps."

#### Articulation of the Problem by Students

In the early discussions, teacher questions about the characters and the nature of the problem served to guide the children in the process of discussion and the examination of the consequences of the action. The children grew more efficient in identifying problems with practice and began to articulate them independently.

In the discussion of "Upstairs and Downstairs" and "Strange Bumps" children responded to Teacher A's question about the problem with fairly well-constructed answers. For "Upstairs and Downstairs" Juliet said, "Well, he couldn't get up and down at the same time so he kept missing . . . the half that he wasn't on." Forty-four responses followed in subsequent discussion of Juliet's comment.

In the discussion of "Strange Bumps" Alana identified Owl as the main character and Adam elaborated the problem: "'thought [his] feet were the bumps. . . .And he got scared because whenever he took his feet out they weren't there, then they keep on being there when he came in, 'cause they were his feet.'" Twenty-three responses elaborated Adam's identification of the problem, and fifty-one more evaluated Owl's solution to his problem.

The discussion of "Owl and the Moon" marked the first discussion conducted by Teacher B with Group One. After establishing that Owl and the moon are the characters in the story, Teacher B asked "Is there a problem in this story?" James answered "Well, Owl thinks that the moon keeps following him but it isn't." The children were ready to identify problems and little or no stimulation from Teacher B was required to initiate the process.

The discussion of "The Guest" began with a lengthy discussion of the previous story, "Owl and the Moon." Teacher B and the children established in twenty-five comments that Owl perceived the moon as a living "friend." Teacher B continued, "In today's story . . . Owl talks to another character and he has an adventure because of what he

thinks about this character. Can someone tell who the characters in this story are?"

James and Frank both volunteered that Owl and the snow were characters in the story. Alana raised her hand and volunteered that Owl "thought the snow would be a good guy. He let the snow come in . . ." Alana was ready with a succinct statement of the problem before Teacher B asked.

#### "Strange Bumps" and the Resort to Fantasy

The story "Strange Bumps" seemed a likely place to include the questions, since Owl got scared at night in bed, although the strange bumps were, in fact, nothing threatening. It seemed that this story might prompt some recognition by children of some similarity to their own experience.

Discussion of this story occurred during the transition from Teacher A's leadership of the groups to Teacher B's. Teacher A conducted the story discussion with Group One. She omitted the question relating the story to the children's own experience because the children became involved in an examination of the quality of Owl's thinking.

Teacher B used the question with the following results: working with Group Five, she asked "Does this kind of problem ever happen with children?" General answers from the group included "Yes. No. Yes. Some babies." Teacher B said: "Andy, you say some babies might get . . . What would some babies think?" Andy answered, "They might think it's a monster come to gobble them up." Teacher B did not pursue this response further.

With Group Two Teacher B posed the question "Does this kind of problem ever happen with children?" Peter answered, "Yes, it happened to me once," launching into a tale in which "I saw, like, these two bumps and I started shaking and they started shaking . . . " He ended with "Don't be silly, they're just your feet . . . I just swatted at one of the feet and, 'Yow, my foot!' so that solved the problem."

Teacher B said "So you really had the same kind of experience as Owl when you were younger. You got frightened by two dark-looking bumps in your bed and you solved your problem in a different way." Peter continued his story, visiting his parents' room, looking under his bed with a flashlight, including his cats in the tale, then moving into a story of the cats under his bed.

Following analysis of these results on the transcripts, the researcher noted the need to proceed more slowly and concretely on questions asked. Questions included about "whether this sort of problem ever happened to people" on the guides were emphasized as "for use only as seems appropriate."

#### Developing Opinions and Forming Judgments

As the discussions progressed, children began to voice opinions and judgments about the story actions and the patterns of behavior they identified. Students examined the implications of the stories in the wider sphere of their experience in the real world. They asked questions and made judgments, summoning evidence from the stories and real life to support their views. They not only used specific

incidents, but also identified patterns of behavior in the stories and used those as evidence to support their views.

Some of these responses represented reactions to questions posed by the teacher, but voluntary generalization and evaluation increased as well. In addition, the incidence of students giving reasons to support their views increased. These behaviors were especially notable in the discussions in which the children examined and evaluated the thinking behavior described in the stories.

The stories about Owl provided a particularly effective occasion for examining thinking, since Owl's behavior in a series of situations can be analyzed. After discussion of the first story about Owl, "Upstairs and Downstairs," Teacher A asked Group One: "What do you think of Owl's thinking? Do you think he's a good thinker?"

The children gave their opinions and provided reasons for their ideas. They freely took opposing views and gave different evidence to support their views. James felt that Owl was "a good thinker 'cause at the end of the story . . . he sat on the tenth step, and ten plus ten is twenty. . ."

Adam disagreed: "When he was running upstairs and downstairs, he wasn't thinking 'cause [you] can't think when you're running real fast." Juliet added, "Well, he's not a very good thinker because . . . Owls don't run, they fly. He could have flew up and down the stairs."

John summarized: "He's not a good thinker because if he runs up and down the stairs, you won't be in the same place at the same time, even if you go the speed of light." Teacher A crystallized: "No

matter how fast you go, you can't do that. So, you're saying his idea . . ." John concluded: "wouldn't work." This pattern of examination and judgment formation was consistent with all the groups which discussed "Upstairs and Downstairs."

### Detecting Patterns

A new element appeared with the discussion of "Strange Bumps," the next story in the sequence. Teacher A asked: "Well, what do you think about his thinking?" Juliet replied, "Kinda stupid like." She reasoned, "he always never guesses that he can't be up and downstairs at the same time and that the bumps are really his feet." Juliet used evidence from two stories to support her opinion, identifying a pattern in Owl's behavior.

Saburo also used evidence from the two stories: "he doesn't even think of something on ups and when he goes up and down and . . . when he should have been looking inside the bed or something, or just leaving, or turn around in his bed and make his feet cold and his body warm or something." Saburo used evidence from two stories to develop the opinion that Owl failed to understand the situation, then continued with an alternative solution.

Thus, by the second story about the same character, the thinking skills described at the beginning of the chapter were observable in the operation of the discussions. Alana's response patterns throughout the story discussions are detailed here as an example.



### Alana as a Typical Participant

Alana was a member of Group One. Her pattern of participation remained consistent throughout the program: she did not contribute as frequently as some children, sometimes only speaking up once or twice in a relevant way in a discussion. However, her comments indicated that she was following the discussions and considering the points involved.

Alana's responses demonstrated development of her ability to identify problems and to interpret and evaluate the actions and motives of the characters. She demonstrated independence in forming opinions and judgments, and she introduced points for consideration.

### Describing Problem Situations

In the discussion of "The Crickets" Alana made two non-relevant comments and two relevant comments. In her first response, she described the problem situation: "But all the time she keeps saying 'Go' more crickets keep coming." She was called upon again, when Teacher A said "Alana, your hand is raised." Alana indicated that she had nothing to say at that point. Possibly her point had been articulated by a student called upon before she was recognized, or she had forgotten her idea for the moment.

In her next comment Alana attempted to answer a question posed by Teacher A: "Why do you think they were mixed up about that?"  
[Why did the crickets think "more" when the mouse wanted "no more"?]

Alana responded, "They thought that she wanted more, and she didn't want more." Alana again described the problem situation accurately, although she was not able to articulate the essential problem.

Alana's final response in the discussion was not a response to a teacher question or the comment of another child. She raised her hand for permission to be excused to the bathroom. In this discussion, although Alana participated fewer times than most other students, her relevant contributions indicated involvement and attention.

In the discussion of "Spring," Alana made six contributions to the discussion. The first time she was called upon, she had no comment, although she had raised her hand. In her next two comments, she described the problem situation in the story. First she said "The frog had a little problem." In response to a query about her comment, Alana answered, "He keeps bugging Toad to get up."

#### Interpreting Motives and Drawing Conclusions

After Adam stated that Frog solved his problem by putting the calendar on May, John commented that "It's sort of like lying. Because it's not really May and he says it is." Alana responded, "I know why he did it; 'cause he wanted to go play." Alana interpreted the motive involved in Frog's action.

In the discussion that followed, the children speculated on whether it was good or bad for Frog to rip off calendar pages. Several children labelled it good because Frog needed a companion. One child voiced concern about the tearing of the pages. Alana raised her hand.

Teacher A asked "What do you think?" Alana answered "Good, because he got up." Teacher A said, "So it worked," and Alana confirmed, "Yep."

In the discussion of "Upstairs and Downstairs," Alana made only one contribution. Children identified Owl's problem as being unable to be upstairs and downstairs at the same time. After three responses by other children, Alana interjected, "Well, another thing: he wanted to be at both places at the same time, so he was running--he was running his fastest--so he would try to be in the same place at the same time." Alana described both the motive and the method in Owl's behavior.

#### Identifying Problems Evaluating and Giving Reasons

In the discussion of "Strange Bumps" Alana contributed to the discussion five times, each time relevantly. In her first response, she identified Owl as the main character. In her next comment she stated the problem and interpreted its nature: "Well . . . he was afraid of his feet because he didn't really know that his feet were the bumps."

Juliet responded to the question "What do you think about his thinking?" with "Kinda stupid like." Alana followed with "I think he thinks kinda stupid too, because he never knew what it was . . . the bumps."

Later, when the discussion turned to whether Owl had good ideas, Alana spoke up: "I have something to say . . . he's a scaredy cat in that story." She took the problem one step further, proposing a cause

of Owl's behavior. Possibly, Alana thought that fear kept Owl from logically considering what the bumps might be. Unfortunately, Teacher A did not pursue the comment, so we do not know more about Alana's idea. This would have been an excellent opportunity to expand the discussion in an evaluative area.

### Asking Questions

Alana introduced another point as the discussion of Owl's thinking and good thinking within the group proceeded. She said, "Well, I don't think that, because I want to ask: Why did that owl live in a house and not a tree?" Her question generated extensive discussion of the natural habits of owls and a comment that some trees are big enough to hold a house. James mentioned that Owl didn't live in a tree because "he's in a book and he's not really real." Teacher A did not pursue this comment either. The researcher wonders what might have come out in a discussion of characters who are "not real."

The discussion of "Owl and the Moon" was the first discussion led by Teacher B with Group One. Alana made only one comment in this discussion. Referring to the moon, Alana offered, "It's part of the solar system." Teacher B did not follow up the comment and it is not clear what connection Alana meant to make with her comment, or how involved she was in the discussion.

In the discussion of the last story, "The Guest," Alana contributed four times. After an initial determination of whether the moon had been a character in the previous story, Teacher B asked about the characters

in the story. Frank and James answered, then Alana volunteered a comment which defined the problem: "Well, see, he thought the snow would be a good guy. He let the snow come in and then it came zooming in and around and around . . . and it blew out the fireplace but he thought that the . . . snow would come in and sit down with the Owl." The teacher responded "He thought he would just come in and . . ." Alana continued, "Be like a normal guest."

At the end of the discussion Teacher B asked, "Can you tell about Owl's thinking?" Alana answered "Owl's thinking is terrible." Teacher B said, "Owl's thinking is terrible in what way?" and Alana offered, "'Cause he thinks . . . winter's going to be nice."

#### Summary of Alana's Skill Development

Alana's responses demonstrated the development of many skills. Alana became more efficient in identifying problems in stories and she began to identify the cause of the problems both in specific cases and in the general patterns rooted in Owl's personality. Alana introduced information from outside the context of the stories, examined the motives of characters and evaluated the characters' actions.

Alana's strongest participation and performance is seen in the middle discussions. Her participation and the elaborateness of her responses tapered off in the last two stories, although her ability to identify problems increased with each story.

### Difficulties in the Program

Teacher B began conducting the story discussions after she observed Teacher A conduct the first discussion of "Strange Bumps" with Group One. Following that, the discussions were conducted by Teacher B.

Teacher B maintained a positive attitude toward students. There was no use of questions to discipline children and no use of a negative or harsh tone in any teacher response on the tapes. Teacher B paused carefully after questions, and sought to provide positive responses in the form of repetition and in the form of comments.

Difficulties emerged both in the use of the questions on the guide and in Teacher B's response to student contributions. Behavioral difficulties with students emerged as well, compounding the problems.

### Mechanical Application of Questions in the Guide

Teacher B tended to proceed somewhat mechanically through the questions provided on the guide whether or not the next question was appropriate to the discussion in progress. Although the children displayed growing efficiency in identifying problem situations, Teacher B was not consistently responsive to this efficiency. At the beginning of the discussion about "Owl and the Moon," James offered, "Well, Owl thinks that the moon keeps following him, but it isn't." James' articulation of the problem made several questions on the guide obsolete: it was not necessary to discuss in detail the events which led up to



Owl's misapprehension about the moon. However, Teacher B conformed to the question guide: fifty-eight questions and responses followed which covered material obviated by James' observation.

The researcher interprets Teacher B's adherence to the guide as an indication of both her strong desire to fulfill the obligations of the task and also her inadequate understanding of the teacher role. The result was a mechanical, step-by-step leadership, often out of rhythm with the group.

#### Artificial Tone of Voice

Teacher B tended to use a somewhat artificial tone of voice to pose the questions. This tone tended to create a sense that the discussion was an exercise, reducing the sense of philosophical dialogue. The researcher attributes this also to unfamiliarity or inexperience with the task, and a strong desire to perform well. The researcher felt that Teacher B had no intention to create this sense of exercise, although her approach to the task was consistent with it.

#### Negative Consequences in the Discussions

The consequences of this approach were immediate and far-reaching. In "Owl and the Moon," the problem in the story revolves about Owl's perception that the moon follows him home. Owl sees the moon as he sits on the seashore, then thinks the moon has followed him as he sees it on his way home.

Following James' articulation of the problem, and in the midst of Teacher B's questions, the students tried to discuss the story in their

own terms. Teacher B asked "What happened right in the beginning while Owl was watching the sea?" Frank volunteered, "The moon rised," but Adam also had a hand up. Teacher B asked, "Adam, did you want to say something about that?" Adam answered "No." Teacher B continued, "Did you have something else you wanted to say?" Adam offered, "The moon, he thinks the moon is moving, but it isn't. It's just, like, gigantic and, like, so it's almost as big as the world, actually almost."

John immediately interjected "No it isn't! No where as big as the world!" Teacher B intervened and restated John's position: "John, you feel, you say that the moon is not as big as the world." John answered, "It isn't, but it's giant." Teacher B repeated, "But it's giant."

Several factors were important at that point. A lively discussion had broken out, which was positive, but neither the process of questions nor the response of the teacher was adequate response to the intensity of feelings. Much was being said at once and the emotional level was high. Other children were voicing comments, interrupting, arguing and expressing ideas without much care for or response to the contributions of others.

Teacher B asked the children to slow down, repeating the contributions of various children and asking for confirmation or clarification. In one case she mirrored the confusion of the conversation, saying "so this is . . . You think this is what Owl . . . Tell me again exactly what you think Owl thought about the moon." In this statement, Teacher B moved the discussion away from the disagreement

about the size of the moon back to a discussion of Owl's perception of the moon. The intervention also moved the discussion back into an area already covered.

A child who was unidentifiable on the recording answered, "He thought it was following him. It wasn't, it was just so big that you could see it in a lot of places." This comment succinctly answered the teacher's question and also gave a reason for Owl's perception which connected with and responded to Adam and John's concern.

#### Consequences of Premature Termination of Discussion

Teacher B said "Good. Good thinking." The child continued: "But it's not far away from people, it's just . . ." and stopped. This comment indicated that the child felt no closure about the discussion of the moon. Some of the children had enough knowledge to attempt to describe the effect the size of the moon has on the ability to see it when travelling some distance, but this knowledge was not secure, or the children would not have pursued it so persistently.

Teacher B's response "Good thinking" appeared to be a desire to close that part of the discussion and move on. The children were not ready to do so. As Chukovsky points out (1963, p. 41) the child attempts to bring order to experience but may often make confusing and even contradictory statements in the process. Scientific knowledge, often foisted upon the unready child, contributes to this confusion. The need to pursue the subject persisted in spite of Teacher B's attempt to move on.

Teacher B summarized: "The moon wasn't following Owl. He thought it was. But you say it looks that way because it's so big. You could see it from all around." The use of "you say" makes it seem as if Teacher B was repeating the conclusions of the children. If this were so, it would have been an effective bridge from a dead end back to the main thrust of the discussion. The next comment confirmed that the issue was still unresolved.

Teacher B called on James: "James, did you want to add something to that?" James said. "No. No, but, but, um, but, but, the moon is the world. The moon is the world." James had been raising his hand. He was obviously perplexed and trying to express some idea. His first comment, "No," indicated that James was not ready to accept the teacher's summary and move on. His repetitions and hesitations following that comment were not unusual in his speech pattern, but they were an indicator of his difficulty ordering his thoughts and articulating his idea.

James was immediately challenged by John: "No it isn't."

#### A Discussion Out of Control

Teacher B knew James well enough to be certain that he knew the moon was not, in fact, the world: however, it was not clear what he meant. Teacher B said, "You think the moon is the world." Laughter and comments such as "No sir" followed. James responded "Yeah."

The researcher speculates that, in this case, exact repetition of the phrase "the moon is the world" by Teacher B was unhelpful because

the phrase meant something different to James than it did to the others. In order to help James, Teacher B perhaps needed to ask questions which probed into the meaning involved, such as "What do you mean?" or, "Do you mean that the moon and the world are like each other, or, do you mean that the moon and the world are the same size?" Such questions might elicit a "No" from James, but could also elicit an explanation of why he rejected them, leading to some articulation of what he did mean.

Teacher B hesitated, then turned her attention to another student: "Alana, did you want to say something about that?" Alana's response was not apparently directed to James' comment: "It's part of the solar system." Alana provided supporting information of a scientific nature about the moon. She did not attack James' position.

At this point, the teacher could choose to return to James' statement and attempt some clarification, or could attempt to move the discussion elsewhere. Teacher B did not address James' comment and the disagreement that had followed it. She asked, "What did Owl say to the moon?" While individuals were answering this question and the ones which followed, conversation between James and a few other children commenced, a conversation of attack and defense, argument and rigidity. Ignoring an inappropriate response is an effective method of reducing unwanted behaviors, but James was serious: his contribution was confused, but not inappropriate. James was left in a position of vulnerability, confusion and error.

Teacher B continued through the questions on the guide. Toward the end of the discussion, Teacher B attempted some recapitulation:

she summarized, then called upon three boys (including James) to comment. She named the three possibly to engage their attention: they had been continuing the argument in a private undertone. The teacher asked James to recall what Owl had said to the moon earlier in the story.

Frank interrupted ahead of James and said "Don't follow me." James also spoke: "No, he went 'good-bye.'" Teacher B acknowledged Frank: "Frank, you said he said 'don't follow me?' What . . . ." James interrupted her with "Good-bye."

Teacher B said, "James, you said he said 'Good-bye.' That's all he said to him?" James answered, "Yeah, he said 'good-bye moon.'" Frank echoed James' statement. Teacher B did not pursue the issue further, which was curious to the researcher because Teacher B had initially seemed to want something more from James.

A deterioration in attitude is observable in this discussion. As was discussed on pages 45 and 46 of Chapter III, it was often necessary to monitor and modify student responses. Frank, for example, often required teacher support to maintaining self control. He tended to erupt into attention-getting behavior and tended to interrupt others and shout out his ideas. Frank's inappropriate behavior in this situation possibly reflected some sense on his part of a lessening of control in the discussion.

Teacher B accepted Frank's interruption, but when James attempted to interrupt, she stayed with Frank's statement, repeating and reinforcing it before turning to James. At this point, Teacher B moved to



another question. The movement, again, seemed mechanical to the researcher, since the question did not bear on the discussion in process and no natural point of transition had occurred. Teacher B asked, "Do these kinds of problems ever happen with children?" The children chimed in with general agreement. Adam said, "Yes, sometimes." Teacher B asked him to continue, but James interrupted with "All the time for me."

Teacher B asked the students to clarify, but mixed up names--asking Frank what he meant, then correcting herself and asking James. James launched into a tirade about his little brother. "When my little brother . . . He's just a pain! Every time I just pick some, something up of his and I'm starting to play with it, he wants it and he grabs it away from me." Teacher B said, "Um, hm," and James continued "So I punch him right in the eye."

It occurred to the researcher that James was talking very directly through metaphor, about his experience earlier in the discussion. Just as James picked something up only to have it grabbed away by his little brother, James had picked up something in the discussion and had it grabbed away. It was possible that in both cases, James felt angry, like punching someone "right in the eye."

Teacher B did not respond to James' comment. Turning to Adam, she asked "You were saying that sometimes this happens to people. Can you give us an example of what you meant? Were you talking about with the moon and with something else?" Adam answered, "No."

Teacher B responded, "With the moon. Um, hm. What kind of a thinker is Owl?" She repeated the question four times. It had become

difficult to keep the discussion moving. James was off task and the other children had little to say.

Then Frank responded, "A dumb one." It seemed to the researcher that, again, more can be read into the response than mere commentary on the story. Name calling and the equation of bad or "dumb" with ineffective solutions had emerged in the discussion. It was possible that James was feeling "dumb" and that his peers were having some conflicting feelings about James and the issues.

The transcript of the discussion seems to confirm the intrusion of concerns about this issue: Teacher B said, "Frank, you think he was a dumb thinker? Why do you say that?" Frank said, "Because he couldn't think no good." Teacher B said, "He couldn't think very well? James?" Frank interrupted again with, "He was just a garbage can."

#### Disrespect as a Dynamic in Discussions

The emergence of pejorative language in the discussions is worth noting. This can be a cue that children are uncomfortable or do not understand the purposes and expectations of the story discussion. As was discussed on pages 72 and 73 of this chapter, silly or disrespectful behavior or language on the part of the children may indicate confusion or discomfort with the task.

In the situation discussed earlier the children attempted to cope with a task which was developmentally inappropriate. In the present case, the researcher felt that the resort to pejorative language indicated the participants' discomfort and insecurity regarding their

perception of expectations. They were no longer sure of "the rules" of the situation.

This was the fifth discussion. In earlier discussions, with teacher support, both Frank and James maintained a constructive manner and attitude in evaluation. The researcher assumes that the resort to pejorative language was a development related to the situation with James' comment about "the moon is the world." Frank's use of words like "dumb" and his talk that Owl was "just a garbage can" indicate criticism of the worth of an individual rather than an idea. Further, the criticism can, perhaps, be applied to the situation with James' comment about the moon with more congruence than to the situation with Owl.

Teacher B asked, "James, why do you think he was not a good thinker?" James answered, "Well, he was stupid. He thinks the moon is following him and then, and it's not, 'cause the moon, it's big and you can see so high that you can see the moon everywhere you go except inside the clouds." Notably, in this comment, James demonstrated his understanding of the story and the problem.

#### The Use of Valuative Feedback by Teacher B

Teacher B answered, "Uh hm. Very good. Who did some good thinking in this group?" Teacher B, once more, did not pursue the previous comment, but capped it and moved on. Further, the use of the comment, "very good" introduced serious complications into the process of giving ideas, evaluating thinking, and participating in the discussion in general.

The use of comments such as "very good" in response to student contributions may reflect merely a reflexive response on the part of a teacher, meant to indicate, "You responded, I heard you." However, these words imply an evaluation of the contribution by the teacher.

A teacher comment such as "very good" conflicts with the program goals which stress participation and the development of skills rather than mastery. "Very good" gives no criteria for understanding how a response is good: it gives little indication of how to produce a good response next time. Further, it tends to produce insecurity and competitiveness.

A student whose response is labelled "very good" may have a momentary sense of satisfaction, but this satisfaction dissipates quickly since it does not guide further responses. Other students, seeing the label applied to the contributions of a peer, may withdraw to avoid failure or may compete for similar approval. Neither response is consistent with the development of skills in an atmosphere respectful of and encouraging to participation by all students.

When Teacher B asked "Who did some good thinking?" the question posed a risky task for the children. One child had fallen into difficulty when he put forth an idea. Other children had been told "good thinking" by the teacher following their comments. This may be contrasted with Teacher A's comment at the end of the discussion of "Spring" with Group One when she said "I like to hear all your ideas," and "I'm really interested in knowing what you think." At the end of Group One's discussion of "Upstairs and Downstairs" Teacher A said, "Look around

you and think if you can tell somebody who had a good idea or was doing some good thinking, because we've been paying attention to that." Both Frank and Saburo volunteered that they felt they had good ideas. Frank felt that his own suggestion that Owl could move to a home without an upstairs and downstairs had been a good idea. Saburo recalled his own good idea that Owl "Just get about three or four binoculars." From this point, the children began discussing ways that they felt Owl was or was not a good thinker, as discussed on pages 77-79 of this chapter.

Identification of those who did good thinking in previous discussions had focused on the contribution of ideas, the examination of solutions and the creation of alternatives. Now, the meaning of "good thinking" had become much less clear.

James volunteered "meeeeee" in a playful and babyish way. The researcher felt that James was not willing to accept a negative evaluation of himself, but was uneasy about defending himself directly. Frank sided with his friend James, but was perhaps also unsure: he spelled out the name "J-A-M-E-S."

Teacher B called on Juliet. Juliet named Alana as a good thinker. Alana's one comment in the discussion had been that the moon was part of the solar system. Juliet did not risk evaluating thinking, she simply named a friend and ally.

None of the comments above indicated any real involvement or concern on the part of the participants for evaluating thinking. Although the students complied with the request to name others, the vitality of the discussion had faded. Teacher B closed the discussion with the comment "Okay. This was a good discussion."

The researcher feels that while there was no intent on the part of Teacher B to dismiss possibilities, and no lack of respect for children, Teacher B's lack of familiarity with the theoretical issues and the lack of practical skills necessary for guiding the discussions reduced Teacher B's effectiveness.

#### Deterioration in Participation

In the discussions led by Teacher B, the number of responses to a particular question decreased--often including merely one or two contributions. In some cases, as soon as any response was provided, Teacher B moved on to the next question. However, it is important to note some interesting elements within the situation. While Teacher B solicited fewer responses to particular questions and sometimes cut off response to issues by moving on, students demonstrated growth that had taken place in their skills.

In the discussion of "The Guest," Alana identified the problem in the story without any cue from the teacher. She described the disaster which resulted when Owl opened his door and invited winter into the house. She responded to a question from Teacher B with the further comment that Owl thought winter would be like a "normal guest." Frank followed with "Yeah and sit down and warm himself up," and James chimed in "But he didn't." These details, while correct, added little to the information presented, neither extending nor deepening the point under discussion.

Teacher B followed with the question "What is the problem in this story?" Frank replied that "The wind kept on blowing [sic] around and



he said 'that's not the way to behave.'" This response was confused and fragmentary, although essentially correct. Some of the confusion may have resulted from the fact that the problem had been described already. Frank may have felt that some other description was desired.

Frank continued, "The wind was being bad. He's a bad boy." Saburo added, "And so Owl has to spank him, has to spank him 'cause he's being a bad boy." Teacher B intervened by asking, "John, you had something else to add to it?" John answered, "No." Teacher B then asked, "How does this story begin?" Teacher B's question, at this point, impeded the flow of the discussion.

James interrupted with the comment, "Well, what I want to say is something about Owl. Owl is dumb!" Frank spoke up: "I know. He is very very very very dumb and stupid!" Although these two comments are pejorative, and some silly behavior has erupted in the discussion of winter as a "bad boy," it is possible to see the students striving to stay with the problem and evaluate its causes. Further, students are listening to and responding to comments made by other students. These comments seem more coherent and detailed, partly because they form part of a sequence of discussion. In contrast, student responses to the teacher are less coherent and less detailed, possibly because Teacher B's questions run counter to the flow of the discussion to some degree.

This situation continued in the discussion, with teacher questions interrupting student efforts to identify and articulate issues. James commented again that Owl was "kind of stupid" to let winter into the house, and Frank agreed. Teacher B followed with the question "What

did Owl think about Winter?" Frank offered the comment that Owl thought winter "could be his friend." This comment did not deepen or extend the discussion of the issues, but it did demonstrate Frank's interest in pursuing examination of the problem.

Teacher B then asked, "Is winter a character in the story?" John answered "Yes," giving the reason that "If he's in the story he's a character." Teacher B asked, "Is he the same kind of character as the Owl?" and John answered, "No." Frank spoke up in an apparent attempt to examine the way Owl perceived phenomena as persons, but trailed off in some confusion: "Well, Owl and the moon, when he sat on top of the mountain and watched . . . "

Teacher B asked, "What did Owl think happened after he opened the door?" James spoke up to answer, but first made the comment "Well, everybody keeps saying this." James, like the other children, was attempting to discuss the issues and also attempting to respond to the teacher's questions. His comment indicated that, not only was he performing both tasks, he was monitoring the process of the discussion as well. James was aware that many individuals were providing the same information, over and over. He followed with another statement of the problem.

Thus, although participation as described on page one of this chapter declined and the incidence of statements which did not expand or deepen the discussion of issues increased, the maintenance and the development of skills is also in evidence. Students independently pursued the problem, evaluated the solutions, identified patterns in

Owl's behavior from story to story, and followed and responded to the contributions of others.

The decline in the quality of participation, and the somewhat confusing and frustrating nature of the questions posed by Teacher B was accompanied by a decline in the number of students who participated. In addition, questions were sometimes omitted by Teacher B, primarily as the result of increasing disruption within the groups which required more and more teacher attention to issues of discipline.

#### Termination of the Program

It is not possible to separate out the implications of these problems within the story discussion groups from problems in the class as a whole. Difficulty with discipline was not confined to the story discussions. Transitions are difficult for children: problems in the class had increased as a result of the change in teachers. Under the stress of the transition, children had reacted with regressive and negative behaviors. Observing the difficulties, the researcher began to consider terminating the program.

Following the story discussion sessions for "The Guest," Teacher B indicated that she felt the program should be stopped. The demands of administering lessons related to other parts of the curriculum had become more pressing than had been anticipated by Teacher B; the energy and motivation to continue the story discussions declined as more was required elsewhere. In addition, she felt that the story discussions were not profitable. The researcher agreed, concluding that termination of the program was a sensible solution.

In spite of the negative consequences which have been discussed, and although the program was terminated, powerful evidence was already available regarding positive outcomes that might accrue from a thinking skills program of the sort described in this dissertation. The discussion of stories can be a very effective occasion for the development of thinking skills. In addition, the difficulties themselves led to important considerations for planning and administering future programs.

#### Important Developmental and Academic Issues

The knowledge possessed by the teacher regarding the general developmental stages represented in an age-group provides an essential foundation for the teaching role and for the leadership of a thinking skills program. In addition, familiarity with the individual needs and abilities of children is required. The teacher must rely heavily on knowledge of the academic, physical, social and emotional strengths and needs of the children to provide for their success in learning.

Since the stories were read to the children, reading ability per se was not a direct factor, but ability in language use and comprehension played an important part in the children's responses. Knowledge about the language development of individual children allows the teacher to pause when necessary to explain vocabulary or concepts, repeat particular points, or in other ways provide adequate understanding as a basis for participation.

The teacher can structure discussion so that all the children have adequate opportunities to participate, and so that all may be challenged.

For some students this may require providing the opportunity to participate early in the discussion. Taro and Fumihiko had minimal knowledge of English at the time of the thinking skills program. They were able to follow the story and to answer questions regarding concrete details of the setting and action.

Questions addressing concrete aspects of the story are not merely token opportunities for participation for they help establish essential details of the action and are important parts of the joint-thinking activity of the group.

The early contributions are necessary and valuable. Since participation at a later point in the discussion may be much less liable to success for some students, providing the opportunity to contribute early is essential. Obviously, any desire on the part of these students to contribute again later in the discussion is supported and reinforced. Early participation does not preclude later participation, it merely helps guarantee success. Furthermore, early participation by these students enhances the positive perception on the part of others of the individuals, and of the group as an entity.

The teacher plays a crucial role in supporting the success of individuals and the group in terms of physical, social and emotional needs as well. It was important that James sit close to the teacher during the story discussions so that he could see the teacher and the story book. His involvement with the task was supported in this way. In addition, proximity to the teacher kept James more closely in touch with the leader, supporting his focus and organization.



The teacher's knowledge of student's style of learning and participation is another important factor in the success of a thinking skills program. For example, the opportunity to participate early may be important for the shy or timid child. The security of a concrete answer may be necessary in order for the timid child to take the risk of participating. By providing for individual styles, the teacher can increase the potential for successful participation by all.

The experienced teacher knows the varying abilities of individual children to take risks, and can provide opportunities for each to participate at a level of comfort. This is not meant to imply that the thinking skills program should never stretch children, but the teacher can arrange opportunities for participation in ways that develop children's ability to respond. Presentation of challenge is preferable to a demand which poses a threat because a perceived threat may cause the child to withdraw or be defensive. The knowledgeable teacher knows how to provide challenge.

Listening skill is another individual factor which has direct impact on the child's performance and progress. Teacher knowledge of the skill level of a class and of particular individuals in the class allows the teacher to structure the discussion in ways which will provide for optimum performance on the part of each.

Style of participation is an important factor in the story discussions as well. Children who are reflective or slow to formulate ideas or thrust them forward may never have the opportunity to contribute new material or take leadership, even if they do participate.



Students who are quick or impulsive responders may monopolize the discussion and may not develop skills of dialogue or an appreciation for the contributions of others.

Knowing individual styles of participation, the teacher can guide the discussion in ways that minimize negative consequences of individual styles and enhance the growth of all students. This is not merely a matter of making sure that some individuals get a "turn." This opportunity opens the possibility of growth in leadership and enhanced self-esteem on the part of the slow responders while it builds discussion skills and develops the positive perception of others in the fast responders.

Frank was seated close to the teacher in story discussions for the reasons discussed above. While Frank's academic skills were strong, he had difficulty maintaining self-control, both physically and verbally. Proximity to the teacher reduced extraneous stimuli and supported his involvement with the story and appropriate behavior. The teacher could touch him, maintain frequent eye-contact and help him maintain himself on task without much interruption of the story or discussion.

The teacher knows which children are ineffective in work when seated close to each other. Care may be taken to place these children so that they do not impede one another. This supports their individual performance and reduces the distraction that their individual behavior might pose for others.

Similarly, the teacher knows which children provide a strong model of listening and response, or whose comments may stimulate the thinking

of others. Placing these children strategically in the group or calling upon them at strategic points in the discussion can enhance the process for all.

The points discussed above illustrate the necessity for the teacher-leader to establish strong but sophisticated control of the group. This control is used to foster the development of each individual and the group. While firm, this control is intended to guide and support the participants, not lead them to a pre-determined answer or position.

#### The Teacher as Model

Teacher control of the pace of the discussion is important as well. It is in this area that the teacher's role as model becomes most clear. The teacher must employ a reflective and thoughtfully-unhurried manner, providing both the slow-responders, the fast-responders, and the rest of the group with a positive model. This involves the issue of wait time (discussed on pages 59 and 60 of Chapter III) and also involves demonstrating a positive model of participation and self-control.

The manner used in calling upon children is important. The teacher can pause after posing a question, scan the group and encourage the response of particular children with eye-contact, a nod, or some other non-verbal cue. Calling on a participant after this pause avoids reinforcing mere speed of response. The teacher may even choose to call on individuals who did not volunteer, but this choice must rest

on the reasonable certainty that the child has formulated a response and will meet success articulating it.

Meanwhile, the teacher must recognize the fast-responders as well. While these children must learn to make room for others they need the support of the teacher to help them wait and listen. They also need recognition of their motivation and hard work. The teacher can use eye-contact, nods, touch, and even side comments such as "I won't forget you," to help these eager children. Knowing that a contribution is valued and will be entertained is a powerful support to the child who is just beginning to learn to make way for and listen to others.

In discussing teaching strategies, Hyman describes "exemplifying" in which "teachers set up or build upon situations . . . that have the potential for them to exemplify what they want the students to learn." Hyman notes that the "exemplifying strategy is particularly suited to the teaching of skills, processes and values" and notes that by using the strategy "the teacher allows the students to see for themselves the consequences of these actions as well as how to perform them" (1979, p. 152).

Conscious employment of an exemplifying strategy on the part of the teacher is a powerful and necessary support to the other aspects of the program described in this dissertation. Further, the design of the program provides situations where the teacher can identify and exemplify the desired skills "smoothly and comfortably" and where students can observe the model on repeated occasions, leading to application; two factors stressed by Hyman (1979, p. 155).

The analysis of the study described in this chapter, and the implications developed in that analysis led to conclusions and recommendations which will be discussed in Chapter V of this dissertation.

## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

Analysis of the successes and difficulties encountered in this study led to several conclusions about the possibilities of a thinking skills program based on the use of stories for children. The gains identified in the children's attitudes and skills support the conclusion that the program is an effective means of developing thinking skills. The evidence underscores the importance of the teacher's role as facilitator of the program, and the need for theoretical and practical preparation to support the role.

Further research is necessary to more sharply define and evaluate the areas of skill development, requisite skills and preparation of the facilitator, and materials for the program, as well as to answer questions suggested by the findings examined in this dissertation. This research can define and evaluate what has been identified in general terms in this study.

#### Gains in Attitude and Skills

The conclusion that a program based on discussion of stories is an effective means of developing thinking skills is based on evidence that children showed gains in identifying and articulating the problems presented in the stories. The children developed independence in identifying problems, pointing them out and commencing analysis before the teacher elicited it. The children's descriptions grew more precise.

The children developed their skills of discourse; they increased their ability to respond pertinently and appropriately to the issues and to each other.

The evidence gathered in the study points to the usefulness of a story in presenting experience and describing problem-solving in a form which is complete and coherent. The story presented all necessary parts of the experience under scrutiny, and all the steps in the characters' behavior and reasoning in response to the problem. This provided a context for the children to effectively examine and evaluate situations which raised problems and solved them.

The increase in the children's ability to identify problems and detect patterns of Owl's response to problems demonstrated the effectiveness of using the stories about Owl as a focus. The stories about Owl proved more susceptible to problem-identification by the children without proving simple or too cut-and-dried. As a solitary character acting in response to phenomena, Owl presented a subject for analysis uncomplicated by the acts and motives of other characters. Owl's narration of his perceptions and reasoning made the task of analysis far easier for the children; they did not have to guess what ideas motivated his behavior. The focus on Owl's reasoning and the examination of his problem-solving in a series of stories, stimulated the recognition and articulation of patterns and the formation of judgments about the nature and adequacy of his response.



### The Importance of the Teacher Role

The evidence from the study also underscores the importance of the teacher's role as facilitator of the thinking skills program. Both Teacher A and Teacher B followed the guides, yet differences in the teachers' approaches produced important differences in the children's achievement. Teacher A and Teacher B both waited appropriate lengths of time for student responses. Both elicited identification of problems; but Teacher A applied questions in a manner more directed to individual needs of students and pursued questions in ways that involved more students in problem identification and analysis. The positive effects of Teacher A's approach suggest that the teacher role which elicits sustained examination of situations and issues fosters skill development and maintains positive participation.

The above points emphasize the importance of the teacher's role as a model for the children. Observed differences in the consequences of the models provided by Teacher A and Teacher B support the conclusion that a teacher model of respect for students and interest in their contributions not only enhances and encourages participation and performance, but guides students in appropriate behavior. Disruptive or off-the-point responses were characteristic in the behavior of some of the children in the study. Effective listening and responding behaviors replaced those behaviors in the children as Teacher A modeled and elicited appropriate responses. This teaching model was less rigorously applied by Teacher B and the responses of some children deteriorated as a consequence.

### Implications Regarding Participating Teachers

The issues discussed above suggest that the novice teacher, the teacher who has moved to a new level or work place, and the teacher working under difficulties of a personal nature or difficulties peculiar to a particular class might better delay embarking on the type of program described in this paper. Implementation of a structured thinking skills program seems an endeavor more susceptible to success when a degree of stability and continuity has been established in a class and when the class is led by an experienced and knowledgeable teacher.

### Recommendations for Further Study

The study described in this dissertation examined the results of using stories as the focus of a thinking skills program with a small sample of children. It demonstrated the possibilities inherent in the approach, but did not pose or confirm specific hypotheses regarding student skill development, the necessary qualifications and preparation for teachers, or the type and range of stories most appropriate for this use. Further research in these areas is needed. A full-scale program which examines the development of thinking skills in this context in detail seems a logical step.

### The Teaching Role

Teacher experience, interest and motivation are concluded to be necessary but not sufficient preparation for facilitation of a thinking

skills program. Analysis of the evidence leads to the conclusion that a training program for teachers would most effectively support the success of the program. This training would involve several components: theoretical foundations, practical training and support during teaching. Theoretical foundations would include a development of the definition of thinking proposed by Dewey and Skinner and examination of pertinent works. Exploration of the theories of Chukovsky and Applebee and further examination of the psychological and aesthetic implications of the use of stories would be included. Additional components should include some specific focus on discussion leadership and questioning techniques, and on teaching thinking.

Learning about the theories and practices involved in the application of a thinking skills program should be followed by opportunities for actual practice, either through role-play or practice teaching situations. While these experiences need not be extensive, they seem a valuable and necessary component, contributing to successful application.

Following this period of instruction and practice, teachers would be ready to begin thinking skills programs using children's stories in their own classes. Knowledge of both theoretical and practical issues would inform and support the teachers' role and provide for optimum development of teacher skills. Such a program should include on-going program and peer support.

### A Tighter Focus in the Program

Problem identification and analysis emerged as a pivotal element in the discussions examined in this study. It would be useful for the thinking skills program to limit itself to particular emphasis upon one area (such as this one), or perhaps two areas.

The recommendation regarding establishing a tighter focus on skill development is not intended to limit the range of possibilities open to development in the program. Latitude must be built into the program to provide freedom to explore divergent possibilities, but the program itself should provide increased support and focus in the areas which have proved to have most potential for development of thinking skills.

### Materials

In a full-scale thinking skills program, stories might be limited to only those concerning Owl and the choice and sequence of particular stories might reflect a focus upon a progression of thematic elements or issues. Owl's reasoning emerged in the study as a natural and powerful arena for the children's analysis. Owl's perceptions and the reasoning and consequences which follow might be the focus in a sequence of stories designed to facilitate this goal. Students' ability to identify and discuss the particular elements could be used to assess thinking skills, using this one body of stories and one primary focus within the stories.

### Evaluation

An evaluative instrument designed to assess the gains in thinking skills is needed. This evaluation might also extend to identification and assessment of the most effective teacher behaviors and approaches in the discussions. The establishment of control groups of children and teachers would be useful in assessing the skills under examination.

The areas for future research described above provide one opportunity to answer questions pertinent to the use and value of a thinking skills program of the kind examined in this dissertation. The primary purpose of the thinking skills program is skill development in children, not only in the specific situation designed to develop these skills, but also in the broader context of the academic and social aspects of the entire classroom program. Consequently, an assessment procedure which effectively answers questions about the program's impact on skills beyond the program goals is needed.

### Important Issues to Be Addressed

Participation in the thinking skills program involved the goal of developing individual abilities of students, based on their own patterns of growth. This program assumed that positive gains in attitude and participation implied a concurrent development in thinking skills. Research is needed to clearly delineate and assess these areas.

It was also assumed in this study that, as skills of dialogue improved, the self-esteem and peer-esteem of individuals would grow in positive ways. Further, it was assumed that a positive appreciation

of the utility and worth of the group would develop. Research which examines gains in the nature and degree of these phenomena is needed.

What impact does participation in the thinking skills program have on a student's approach to other experiences in his or her environment? Do participants examine and evaluate experiences presented in stories differently as a result of participation in the program? Do participants examine and evaluate areas of subject matter presented in the various parts of the curriculum differently as a result of participation in the program, and what aspects of the program enhance this outcome? Do participants examine and evaluate their own experiences and problem-solving behaviors differently (or at all) as a result of participation in the thinking skills program?

Does participation in the program foster increased independence in the formulation of opinions and judgments in the areas described above? Do participants demonstrate increased confidence in contributing and supporting their own views in all areas of the school experience?

The theorists examined in this dissertation connect cognitive development with language development. Lipman states that "introducing philosophy to children in a sustained and rigorous way by trained teachers can make a significant impact on basic skills" (1980, p. 20). What impact does a thinking skills program have on the development of students' abilities in the basic skills?

All the areas discussed above are intimately related to the student's self-concept. Does participation in a thinking skills program, with attendant development in the areas described, contribute in



any measurable way to a student's self-esteem? What role does this play in the student's attitude toward himself or herself as a learner, and toward the learning experience and the school environment in general?

Just as the questions discussed above seek important answers regarding the impact of participation in a thinking skills program upon students, what effect does participation have upon teachers? Does the theoretical and practical knowledge which is developed in the course of the program have a positive effect on the teacher's performance in other areas? How could such outcomes be defined and measured? What impact does this knowledge and ability have on teacher attitude; does teacher self-esteem change? Does teacher perception of students as learners change?

### Conclusion

In drawing this dissertation to a close, the researcher returns to Dewey's definition of education. Education rests upon the reconstruction or reorganization of accumulated data. That reconstruction develops meaning and implies renewal for the individual and the social group. This examination of the nature of thinking and the possibilities inherent in developing thinking skills constitutes an attempt on the part of the author to formulate and communicate experience for these purposes. Dewey said:

The experience has to be formulated in order to be communicated. To formulate requires getting outside of it, seeing it as another would see it, considering what points of contact it has with the life of another so that it may be got into such form that he can appreciate its meaning. Except in dealing with commonplaces and catch phrases one has to assimilate, imaginatively, something of another's experience in order to tell him intelligently of one's own experience. All communication is like art. It may fairly be said, therefore, that any arrangement that remains vitally social, or vitally shared, is educative to those who participate in it. (1966, pp. 5, 6)

APPENDIX A

GROUP ONE: DISCUSSION THREE

Teacher A: "John, Juliet, Alana, Adam, Saburo, James, Frank; and we are going to discuss what story? Who remembers the story?"

Adam: "Owl at Home."

Teacher A: "The book is called 'Owl at Home' and the story that we read was? John raised his hand."

John: "Upstairs and Downstairs."

Teacher A: "You know something Frank? I can hear your voice and I called on someone else. You know whose turn it was?"

Frank: "Yeah."

Teacher A: "Do you know why I'm asking people to raise their hands?"

Frank: "Yeah."

Teacher A: "Because when I listen to the tape afterwards, it's hard for me to know who's talking unless the person whose turn it is is talking. And I like to listen to these just like you do. O.K. Raise your hand if you can tell what the problem was in this story."

Juliet: "Well, he couldn't get up and down at the same time, so he kept missing half of the . . . he kept missing one the half that he wasn't on."

Teacher A: "He couldn't get up and down at the same time, so he kept missing the half that he wasn't on. Who was it that had this problem? Go ahead Juliet."

Juliet: "Owl."

Teacher A: "Owl had this problem. O.K. Alana, what were you going to say about it?"

Alana: "Well, another thing, he wanted to be at both places at the same time so he was running, he was running his fastest--so he would try to be in the same place at the same time."

Teacher A: "He wanted to be in the same place at the same time, so he was running his fastest so he could try to be in the same place at the same time."

Adam: "That way was impossible because he can't be at two places at the exact same time."

Teacher A: "So you're saying . . ."

Adam: "Because he can't run so fast."

Teacher A: "It's impossible because you can't run that fast? What do you think, Frank?"

Frank: "Well, umm, what he what he could have done to solve his problem is umm, move to a different house that has no stairs. 'Cause then he could stay in the same place."

Teacher A: "He would be in the same place, yeah."

Adam: "He could solve his problem by getting a friend over to tell him what's happening upstairs and what's happening and then the owl would know what was happening downstairs."

Teacher A: "So he would know. Adam, you said it's impossible to be in the same place at the same time. Do you mean it's

impossible for him to be upstairs and downstairs at the same time?"

Adam: "Well unless you go into the middle of it, and then, like, you can see real far. You got good eyes and you can see real far and you can see what's going on upstairs and downstairs."

Teacher A: "So you're saying it would be possible to get somewhere where you could see both places."

Adam: "But you couldn't be there."

Teacher A: "But you couldn't be both places? What do you think James? Do you think that you could be in two places at the same time?"

Frank: "Yeah, I could."

Teacher A: "Let James finish. He's about to say something, and I'll come back."

James: "'Cause 'cause you see if if you're upstairs you can't go downstairs at the same time."

Teacher A: "O.K. Adam."

Adam: "What you do is just put your leg on the tenth stairs and you'll be both feet will be on both sides."

Teacher A: "He says, if you put your legs on the tenth stair and your feet are sticking out, you would be on both sides. James, you had something to say about that?"

James: "Yup. Well, see, how we solve this problem, you see ten plus ten is twenty, so, so we stand on the tenth step, step."

Teacher A: "So, you're thinking about what Adam was talking about, and Owl tried to solve his problem by being on the tenth step."

Juliet: "Well, really, you can't be in two places at the same time, 'cause how can you be in Amherst and California at the same time either?"

Teacher A: "You're thinking about two other places, like Amherst and California."

Juliet: "Yeah, you can't be in those two places at the same time."

Teacher A: "Yeah. That's a thought, 'cause those are two places."

Frank: "Yes, you can. You can just stand there and your son Steve would come in . . ."

Teacher A: "Hold on, Frank. John, what do you think? Do you think you could be in two places at the same time?"

John: "No. It's impossible to be here at that end of the school and at this end of the school at the same time."

Teacher A: "It would be impossible to be at that end of the school and this other end of the school at the same time. O.K."

Saburo: "He wanted to know what's happening upstairs and downstairs. You can just get a friend and let him go upstairs, and you can just get something like a little telephone thing to call us, and you can ask what is it like upstairs."

Teacher A: "So, you're saying you could find out what it's like."

James: "Well, he could call me over, and he said [sic] I'm having trouble to find out what my upstairs is like and what my



downstairs is like. So I, so I went over and I had to go upstairs and I, and so he got a little telephone thing, and he can call me, what's happening upstairs? And I could call him what's happening downstairs."

Teacher A: "So . . . "

James: "That's, that's what he's talking about."

Teacher A: "Who was talking about?"

James: "Saburo."

Teacher A: "Saburo was talking about that, and James, you're saying, you were explaining it. That shows that you were really listening to and thinking about what Saburo was saying. Good."

Frank: "Well, uh, instead of just running upstairs and downstairs, he could have just sat downstairs. And well, he doesn't have to just run upstairs and downstairs, but what he could do is, well, just, um, well, he could, um, ahh . . . forget it."

Teacher A: "Hard to think about. Let me ask you a question. Do you think, do you think if he could go faster . . . He was trying to go faster and faster. Do you think he could go fast enough to make it happen?"

General: "No."

Frank: "Oh!"

Teacher A: "Did you remember Frank?"

Frank: "Yep. If if he was magic, he he could just change it and make upstairs and downstairs at the same time."

Teacher A: "So, you might be able to use magic to do it. O.K."

Saburo: "You could get a giant binocular and put it downstairs and upstairs and, and be at the tenth step. Then you can just look through it and then, you could see downstairs and upstairs."

Teacher A: "So you could see. Let me ask you another question. Do you think being able to see, like Saburo was saying, or to have a radio or a telephone or a walkie-talkie, like several of you talked about to know, to see, or hear, or know about what's happening. Do you think that would be the same as being there?"

John: "No."

Teacher A: "You said no, John."

Frank: "Yes."

Teacher A: "Wait a second. John said no. Can you give a reason?"

John: "Because if you were there, then you're not umm . . . I forgot."

Teacher A: "I was asking if being there is the same as knowing about it, and you said if you were there . . ."

John: "Yeah, if you were there, then you don't know what was going on unless somebody tells you."

Teacher A: "O.K. All right. Somebody over here had an answer too. What do you think? Do you think that knowing what's going on in both places is the same as being in both places?"

James: "Yeah."

Teacher A: "You think so James? How come?"

James: "'Cause, 'cause, if you're in both places then, then, uh, you could see both places."

Teacher A: "If you're in both places, you can see both places. Does that mean that if you can see both places you're in both places?"

James: "Yeah."

Teacher A: "Ohh. All right."

Teacher A: "All right. Let's see. Let me ask you something that we haven't talked about before, but that I wanted to talk about this time. Stop just a minute James. Let's finish this other business. Look around you, and think if you can tell somebody who had a good idea or was doing some good thinking because we've been paying attention to that. Frank, you're telling that you had a good idea. What do you think was some good thinking that you did?"

Frank: "Well, that if, um, if he would have moved and had um a thing with upstairs and downstairs but no stairs."

Teacher A: "So, you have the idea of having a place where he didn't have to have an upstairs and downstairs. All right. Frank remembered a good idea."

Juliet: "Well . . . I just forget."

Teacher A: "Hard, isn't it? Anybody else remember some good thinking?"

Saburo: "Just get about three or four binoculars."

Teacher A: "And who's good idea is it that you are talking about, Saburo?"

Saburo: "And one tape recorder, and just say what's going upstairs and just look at everything."

Teacher A: "Are you talking about your good idea or somebody else's that you heard?"

Saburo: "Mine."

Teacher A: "Your's. That's good."

Juliet: "Um, well this is about my house. It can still have an upstairs and downstairs and not be missing a half like in my house. 'Cause somebody lives downstairs and I live upstairs."

Teacher A: "Juliet says you can have an upstairs and a downstairs and not miss half of it because you live in one part and somebody else lives in the other. All right."

John: "Oh I bet you had a good idea to do this."

Teacher A: "It feels good to me. I see some good thinking going on here. Good problem solving. What do you think of Owl's thinking? Do you think he's a good thinker?"

James: "Yeah."

Teacher A: "Give me some reasons when you have ideas. Frank raised his hand."

Frank: "No."

Teacher A: "You don't think Owl's a good thinker. Why not?"

Frank: "Because he, he doesn't know what's going on upstairs and when he's upstairs he doesn't know what's going on downstairs. But I got umm umm a house with upstairs

and downstairs but I don't got any stairs because I could just, when I'm in the kitchen I could just walk around and go to my room but I don't gotta go upstairs."

Teacher A: "I see. Anybody else have some ideas about Owl as a thinker? What do you think James?"

James: "Um, I think that he is a good thinker 'cause at the end of the story, he thought, he, he, sat on the tenth step. And ten plus ten is twenty, and there's twenty steps, so, so if he sat in the middle he could, he could see both places, 'cause, 'cause for him to go upstairs he, he, would only have ten more steps to go."

Teacher A: "So you're thinking about that thinking he did. All right. Adam, what do you think of Owl as a thinker?"

Adam: "When he was running upstairs and downstairs, he wasn't thinking, 'cause he couldn't have done that if he was just thinking, 'cause he can't think when you're [sic] running real fast."

Teacher A: "So you think his running up and down the stairs the way he did was showing that he wasn't, and then he had to sit down on the steps 'cause he was tired. O.K. Anybody else want to say something?"

Juliet: "Well, he's not a very good thinker because, well anyways owls don't run, they fly. He could have flew up and down the stairs."

Teacher A: "O.K."

John: "He's not a good thinker, because if he runs up and down the stairs . . . You won't, you won't be in the same place at the same time even if you go the speed of light."

Teacher A: "No matter how fast you go, you can't do that. So you're saying his idea . . . "

John: "Wouldn't work."

Teacher A: "Wouldn't work. All right. I think the good thinkers have been right here. Thank you."



APPENDIX B

GROUP ONE: DISCUSSION FIVE

Teacher B: "We have just heard the story 'Owl and the Moon.' Who are the characters in the story?"

Juliet: "The Owl and the moon."

Teacher B: "O.K. Is there a problem in this story?"

James: "Well, well, Owl thinks that that that the moon keeps following him but it isn't."

Teacher B: "O.K. He feels that the moon keeps following him but you feel it isn't. Where did Owl go one night?"

Saburo: "Up the hill to the rock."

Teacher B: "He went up the hill to the rock. Um, what did Owl do?"

Saburo: "He, um, he was sitting on the rock and the moon came along, then when he went down, the moon kept on following him."

Teacher B: "O.K., Saburo, you said that he he was on the rock and the moon . . . "

Saburo: "The moon kept on following him and Owl said, um, 'don't follow me' but . . . kept on following, and he got . . . "

Teacher B: "O.K., and so the moon kept following him and he told him not to."

Saburo: "And then, when he came home, he got in bed and then the moon came out, and he said, 'The moon you have followed me.'"

Teacher B: "Uh hum. O.K. So you feel, and then he went home and he told the moon not to follow him, but he did, and he went home and he got into bed and there was the moon. What were you going to say?"

Saburo: "And then he went to sleep and then the moon kept on shining on his head."

Teacher B: "Uh huh. What what happened right in the beginning while Owl was watching the sea?"

Frank: "The moon rised."

Teacher B: "He saw the moon come up. O.K. Adam, did you want to say something about that?"

Adam: "No."

Teacher B: "No. Did you have something else you wanted to say?"

Adam: "The moon, he thinks the moon is moving but it isn't. It's just, like, gigantic and, like, so it's almost as big as the world, actually almost."

John: "No it isn't. No where near as big as the world!"

Adam: "Yes it is!"

John: "No it isn't!"

Teacher B: "O.K. Wait a minute, wait a minute. John, you feel, you say that the moon is not as big as the world."

John: "It isn't, but it's giant."

Teacher B: "But it's giant."

Adam: "And he thinks it's alive, but it's not."

John: "It's just a little like a third of the moon, just like a third."

Teacher B: "Wait a minute. We need just one at a time so I can hear what each person is saying. So this is, you think this is what Owl, . . . tell me again exactly what you think Owl thought about the moon."

Adam: "He thought it was following him. It wasn't, it was just so big that you could see it in a lot of places."

Teacher B: "Good. Good thinking."

Adam: "But it's not far away from people, it's just . . ."

Teacher B: "The moon wasn't wasn't following Owl; he thought it was. But you say it looks that way because it's so big. You could see it from all around. James, did you want to add something to that?"

James: "No. No, but the moon is the world. The moon is the world."

John: "No it isn't!"

James: "Yes it is!"

Teacher B: "You think the moon is the world."

James: "Yeah."

John: "No Sir!"

[laughter]

Teacher B: "Umm. It seems. Well let's ask James. James . . . Somebody can, . . . Alana, did you want to say something about that?"

Alana: "It's part of the solar system."

Teacher B: "Would you come a little closer so we can hear you?"

Frank: "He didn't know why the moon keep [sic] following him."

Teacher B: "Owl didn't know why the moon kept following him. Right.  
What's, um, what did Owl say to the moon? What did Owl  
say to the moon?"

Frank: "Don't follow me. He didn't want the moon to follow  
him so he went into his house."

Teacher B: "O.K. Owl said he didn't want . . ."

Frank: "So he hid behind a tree. Hid behind a tree."

Teacher B: "Owl hid behind a tree?"

Frank: "Yeah."

Teacher B: "And what happened to the moon then?"

Frank: "It went behind the cloud."

Teacher B: "It went behind the cloud, uh hum."

Frank: "And then he didn't see it so he went home."

Teacher B: "What did he think when he didn't see the moon any more?"

Frank: "He thought it went away."

Teacher B: "He thought the moon went away and was not going to  
follow him any more? O.K. What happened when he got  
home? The moon went behind the cloud and he thought he  
had gone away. What happened when the Owl got home?  
Juliet? Do you have anything you can add to this? Do  
you, what did Owl, think when he got home and in bed?"

Juliet: "That the moon just went back to the river, only it was  
just behind a cloud 'cause the clouds were moving and not  
the moon."

Teacher B: "Because the the clouds were moving and not the moon."

Juliet: "Yeah. The moon, well the clouds were . . . "

Teacher B: "How did Owl feel, James and John and Saburo, how did Owl feel when the moon, when he was in bed and the moon started shining through his window?"

Frank: "He felt happy and when he got home, he went to bed and then when he when he fell asleep, the moon was shining in his window, then he was so happy."

Teacher B: "Then he felt happy when the moon was shining in the window. What was, what was it he, James, James. We need to backtrack a little bit. Remember, Owl went up on a hill and shouted to the moon. What did he, what did he . . . "

Frank: "Don't follow me."

James: "No, he went 'good-bye.'"

Teacher B: "Frank, you said he said 'don't follow me.' What . . . ?"

James: "Good-bye."

Teacher B: "James said, you said he said 'good-bye.' That's, that's all he said to him?"

Frank: "Yeah, he said good-bye moon."

Teacher B: "Do these kinds of problems ever happen with children?"

General: "Yeah."

Adam: "Yes, sometimes."

Teacher B: "Adam, you say 'sometimes.'"

James: "All the time for me."

Teacher B: "What are you thinking? What are you thinking about when you say sometimes these problems happen to children?"

Frank, you did you think that sometimes this can happen to children? No, it was James. You you said sometimes this happens to children."

James: "No, no, Adam said that."

Teacher B: "And what did you say?"

James: "I said that, that it happens all the time to me."

Teacher B: "Can you give us an example of what you mean, . . . that happens to you. What kind . . . the same thing with the moon, or something else?"

James: "Something else."

Teacher B: "Can you give us an example of what you mean?"

James: "When my little brother. He's just a pain! Every time I just pick some something up of his and I'm starting to play with it, he wants it and he grabs it away from me."

Teacher B: "Uh huh."

James: "So I punch him right in the eye!"

Teacher B: Adam, Adam, you were saying that sometimes this happens to people. Can you give us an example of what you meant? Were you talking about with the moon and with something else?"

Adam: "No."

Teacher B: "With the moon, uh huh. What kind of a thinker, what kind of a thinker is Owl? What kind of a thinker is Owl? What kind of a thinker was Owl?"



Frank: "A dumb one."

Teacher B: "Frank, you think he was a dumb thinker? Why do you say that?"

Frank: "Yes. Because he couldn't think no good."

Teacher B: "He couldn't think very well? James?"

Frank: "He was just a garbage can."

Teacher B: "James, why do you think he was not a good thinker?"

James: "Well, he was stupid. He thinks the moon is following him and and then, and it's not, 'cause 'cause the moon, it's big and you can see so high that you can see the moon everywhere you go except inside the clouds."

Teacher B: "Uh huh. Very good. Who did some good thinking in this group?"

James: "Meeeee."

Teacher B: "O.K. Juliet, who do you think did some good thinking in this discussion?"

Juliet: "Uhh . . . Alana."

Teacher B: "You think Alana. James, you thought you did some good thinking."

James: "Yeah."

Teacher B: "Frank, who do you think did good thinking?"

Frank: "Um, I thought J-A-M-E-S."

Teacher B: "You also think James did good thinking. O.K. This was a good discussion."

APPENDIX C

DISCUSSION GUIDE: "OWL AND THE MOON"

Who are the characters in this story?

Is there a problem in this story?

Where did Owl go one night? (Use as needed.)

What did Owl do? (Use as needed.)

What happened while Owl was watching the sea? (Use as needed.)

What did Owl think as he was looking at the moon? (Use as needed.)

What do you think about what Owl thought? (Important.)

What happened as Owl walked home?

What did Owl say to the moon?

What do you think was happening? (Important.)

What happened?

What did Owl shout to the moon from a hill?

What did Owl think had happened? How did Owl feel?

What happened when Owl went to bed? How did Owl feel?

Does this kind of problem ever happen with children?

Can you give some examples?

Do people ever get mixed up about things like this?

Who can tell what kind of thinker Owl is?

Who can tell about some good thinking they heard today  
---in the story? ---in our discussion?

For Emphasis:

"Wait time"

feedback (repetition)

encourage responses to one  
another

APPENDIX D

TABLES

TABLE 1  
"The Crickets"

Student	Adam	Alana	Frank	James	John	Juliet	Saburo
Category							
#C	7	4	6	8	4	10	12
#NC	1	2	2	4	2	2	9
#RC	8	2	4	3	5	11	4
RP	3	2	2	0	2	6	1
PA	2	0	2	2	0	1	0
ISA	3	0	0	1	3	3	2
O/J	0	0	0	0	0	0	0
ET	0	0	0	0	0	0	0
RCP	0	0	0	0	0	1	1
IGT	0	0	0	0	0	0	0

## Code

- #C number of times students contributed to discussion  
 #NC number of responses not coded in chart  
 #RC number of response categories coded in chart  
 RP referred to the problem in the story  
 PA provided possible alternatives to story action  
 ISA gave a possible reason to interpret story action and consequences  
 O/J gave opinion or made judgement related to story action  
 ET evaluated thinking in the story  
 RCP responded to contribution to discussion by peer  
 IGT identified a peer who did "good thinking" in discussion

TABLE 2

"Spring"

Student	Adam	Alana	Frank	James	John	Juliet	Saburo
Category							
#C	9	6	13	10	5	3	4
#NC	3	1	6	5	3	1	0
#RC	7	6	7	7	3	3	5
RP	5	3	2	1	0	1	1
PA	0	0	0	0	0	0	0
ISA	1	1	1	1	1	1	2
O/J	1	2	3	3	2	1	2
ET	0	0	0	0	0	0	0
RCP	0	0	1	2	0	0	0
IGT	0	0	0	0	0	0	0

## Code

- #C number of times students contributed to discussion  
 #NC number of responses not coded in chart  
 #RC number of response categories coded in chart  
 RP referred to the problem in the story  
 PA provided possible alternatives to story action  
 ISA gave a possible reason to interpret story action and consequences  
 O/J gave opinion or made judgement related to story action  
 ET evaluated thinking in the story  
 RCP responded to contribution to discussion by peer  
 IGT identified a peer who did "good thinking" in discussion

TABLE 3  
 "Upstairs and Downstairs"

Student	Adam	Alana	Frank	James	John	Juliet	Saburo
Category							
#C	8	1	10	10	8	7	5
#NC	2	0	3	2	4	3	2
#RC	10	0	10	11	5	5	4
RP	3	1	2	2	0	1	1
PA	3	0	4	2	0	1	2
ISA	3	0	1	3	3	2	0
O/J	0	0	0	1	0	0	0
ET	1	0	1	1	1	1	0
RCP	0	0	1	1	0	0	0
IGT	0	0	1	1	1	0	1

## Code

- #C number of times students contributed to discussion  
 #NC number of responses not coded in chart  
 #RC number of response categories coded in chart  
 RP referred to the problem in the story  
 PA provided possible alternatives to story action  
 ISA gave a possible reason to interpret story action and consequences  
 O/J gave opinion or made judgement related to story action  
 ET evaluated thinking in the story  
 RCP responded to contribution to discussion by peer  
 IGT identified a peer who did "good thinking" in discussion



TABLE 4  
"Strange Bumps"

Student	Adam	Alana	Frank	James	John	Juliet	Saburo
Category							
#C	7	5	0	9	5	8	2
#NC	0	2	0	3	2	1	0
#RC	7	4	0	7	4	9	4
RP	5	1	0	3	0	3	0
PA	0	0	0	0	0	0	1
ISA	0	1	0	1	2	1	1
O/J	1	1	0	0	0	0	2
ET	0	0	0	0	0	0	0
RCP	0	1	0	0	2	2	0
IGT	0	0	0	0	0	0	0

## Code

- #C number of times students contributed to discussion  
 #NC number of responses not coded in chart  
 #RC number of response categories coded in chart  
 RP referred to the problem in the story  
 PA provided possible alternatives to story action  
 ISA gave a possible reason to interpret story action and consequences  
 O/J gave opinion or made judgement related to story action  
 ET evaluated thinking in the story  
 RCP responded to contribution to discussion by peer  
 IGT identified a peer who did "good thinking" in discussion

TABLE 5  
"Owl and Moon"

Student	Adam	Alana	Frank	James	John	Juliet	Saburo
Category							
#C	8	1	15	15	6	4	5
#NC	5	1	11	12	6	3	5
#RC	4	0	4	4	0	1	0
RP	3	0	1	1	0	0	0
PA	0	0	0	0	0	0	0
ISA	1	0	0	1	0	0	0
O/J	0	0	0	0	0	0	0
ET	0	0	2	1	0	0	0
RCP	0	0	0	0	0	0	0
IGT	0	0	1	1	0	1	0

## Code

- #C number of times students contributed to discussion  
 #NC number of responses not coded in chart  
 #RC number of response categories coded in chart  
 RP referred to the problem in the story  
 PA provided possible alternatives to story action  
 ISA gave a possible reason to interpret story action and consequences  
 O/J gave opinion or made judgement related to story action  
 ET evaluated thinking in the story  
 RCP responded to contribution to discussion by peer  
 IGT identified a peer who did "good thinking" in discussion

TABLE 6  
"The Guest"

Student	Adam	Alana	Frank	James	John	Juliet	Saburo
Category							
#C	5	4	20	11	13	0	1
#NC	4	0	13	6	7	0	1
#RC	3	5	10	7	11	0	0
RP	0	2	2	1	2	0	0
PA	0	0	0	0	0	0	0
ISA	1	1	1	1	4	0	0
O/J	0	0	1	0	0	0	0
ET	1	2	3	2	1	0	0
RCP	1	0	3	3	4	0	0
IGT	0	0	0	0	0	0	0

## Code

- #C number of times students contributed to discussion  
 #NC number of responses not coded in chart  
 #RC number of response categories coded in chart  
 RP referred to the problem in the story  
 PA provided possible alternatives to story action  
 ISA gave a possible reason to interpret story action and consequences  
 O/J gave opinion or made judgement related to story action  
 ET evaluated thinking in the story  
 RCP responded to contribution to discussion by peer  
 IGT identified a peer who did "good thinking" in discussion

TABLE 7

## Totals

Student	Adam	Alana	Frank	James	John	Juliet	Saburo
Category							
#C	44	21	64	63	41	32	24
#NC	15	7	35	32	24	10	12
#RC	39	18	35	39	28	29	17
RP	19	9	9	8	4	11	3
PA	5	0	6	4	0	2	3
ISA	9	3	3	8	13	7	5
O/J	2	3	4	4	2	1	4
ET	2	3	6	4	4	3	0
RCP	2	0	5	9	4	4	1
IGT	0	0	2	2	1	1	1

## Code

- #C number of times students contributed to discussion  
 #NC number of responses not coded in chart  
 #RC number of response categories coded in chart  
 RP referred to the problem in the story  
 PA provided possible alternatives to story action  
 ISA gave a possible reason to interpret story action and consequences  
 O/J gave opinion or made judgement related to story action  
 ET evaluated thinking in the story  
 RCP responded to contribution to discussion by peer  
 IGT identified a peer who did "good thinking" in discussion

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