The Effect of Videotape Training on Teacher's Use of "Bridging Strategies" Within an Interactionist Framework

by

Martha Ndako Baiyee

Dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Family and Child Development

APPROVED:

Dr. Janet Sawyer, Chair

Dr. Mark Benson

Dr. Andrew Stremmel

Dr. Cosby Rogers

Dr. Rosary Lalik

September, 1995
Blacksburg, Virginia

Keywords: Early Childhood Teacher Training, Early Childhood Teaching Strategies
THE EFFECT OF TRAINING ON TEACHER'S USE OF "BRIDGING STRATEGIES" WITHIN AN INTERACTIONIST FRAMEWORK

by

Martha N. Baiyee

Dr. Janet Sawyers, chair

Family and Child Development

(ABSTRACT)

The purpose of this study was fourfold: to further our understanding of the effect of training on teachers' use of "bridging strategies"; to identify variables that influence teachers' use of the strategies; to explore the feasibility of using the Bridging Strategy Rating Scale (BSRS) as a feedback/evaluation tool for members of the child care and school community; to establish which strategies were least/most used. A series of two-way, 2 x 2, ANOVAs, t-tests, and descriptive statistics revealed that training was partially effective in assisting teachers in their use of the "bridging strategies"; comfort with, clarity of concept, and simplicity, were identified contextual variables that influenced teachers' use of some of the strategies. T-test of control group's pretest and posttest mean score was statistically significant whereas the experimental group's was at a level that approached significance. Observing, validating, participating/conversing, managing/organizing/providing were the most used strategies and extending, problem initiating, role modeling and instructing were the least used. Interpretations and implications for early childhood teacher educators are discussed.
Dedication

I dedicate this dissertation, with heartfelt appreciation to my beloved mother, Mrs. Sarah Agbor Baiyee, whose strength is my inspiration for excellence.
Acknowledgements

I am appreciative of the many individuals who supported me through this challenging, humbling, and growth-erecting process. I would especially like to thank C. Clemens and A. Hamby who rated the data, B. Hilton and M. Khumbah who assisted with the videotaping, to the students who volunteered as participants, F. Godfrey and P. Laws who willingly rendered computer related assistance. Also, I would like to thank Dr. K. Harrison, Mrs. J. Vogler, Mrs. L. Hill, and Ms. A. Lawson.

Many thanks are extended to members of my committee for their support and guidance on this project: Dr. M. Benson who guided me along the quantitative analysis, Dr. A. Stremmel who provided literature sources, Dr. R. Lalik and Dr. C. Rogers who provided words of encouragement and gave me an audience whenever I needed one. A very special thank you to my chair and mentor, Dr. J. Sawyers for her valuing my ideas right from the inception of this project to its completion. I am most appreciative of her insightful and relentless guidance and editing finesse that challenged me to strive for my fullest potential. Needless to say, any deficiencies or inaccuracies remain my responsibility.

Most importantly I acknowledge my family (mom--Agbor, sisters--Bessem and Achuo, and brothers--Taku, Nyukechen, BaiyeeMbi, Bate, and Tanyi) who believed in me enough to make me believe in myself. I will always cherish your support as I commence with the next dimension of my life.
Table of Contents

CHAPTER I ........................................... 1

Introduction ........................................ 1
  Overview and Purpose of the Study ............. 1
  Rationale for the Study ......................... 2
  Theoretical Perspective ......................... 6

CHAPTER II ........................................... 10

Literature Review .................................... 10
  Theoretical and Philosophical Background .......... 10
  Strategies For Teaching Young Children ............ 16
    Observing ........................................ 18
    Validating ....................................... 19
    Participating/Conversing ......................... 21
    Extending ........................................ 22
    Problem Initiating ................................ 24
    Role Modeling ..................................... 25
    Instructing ....................................... 28
    Managing/Organizing/Providing .................... 29

Effect of Training Method With Use of Videotapes .... 31
Related Variables that Influence Acquisition of Specific Teaching Skills .... 34

CHAPTER III .......................................... 38

Method .............................................. 38
  Participants and Setting .......................... 38
    Course (FCD 4212) ................................ 39
    Recruitment of Subjects .......................... 40
    Assignment to Groups .............................. 41
  General Procedures ................................ 42
  Data Sources ....................................... 42
    Anecdotal records ................................ 43
    Videotapes of student activities/interactions .... 43
    Activity plans and evaluation .................... 44
    Questionnaire data ................................ 45
  Training Session for Non-Participants ............ 45

Instruments ......................................... 45
  Bridging Strategies Rating Scale (BSRS) .......... 46
  Pilot test ........................................ 46
  Scoring ........................................... 48
  Questionnaire ...................................... 50
Discussion for Question 3 ........................................... 114
Control Group .......................................................... 114
Discussion for Question 4 ............................................. 115
Summary and Conclusions ............................................ 117

References ............................................................... 119
# Table of Appendices

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>FCD 4214 Course Description</td>
<td>125</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Institutional Review Board Approval</td>
<td>133</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Bridging Strategies Rating Scale (BSRS)</td>
<td>135</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Questionnaire</td>
<td>141</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Student-Teacher Assistants’ Training Overview</td>
<td>143</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Raters’ Training Overview</td>
<td>146</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Vita</td>
<td>148</td>
</tr>
</tbody>
</table>
List of Tables

Table 1. Rates' Mean Score for Each "Bridging Strategy"..........................71
Table 2. Self-ratings for Each "Bridging Strategy".................................74
Table 3. Self-rating Overall Mean for "Bridging Strategies".......................77
Table 4. Self-ratings for Observing "Bridging Strategy"............................79
Table 5. Self-ratings for Validating "Bridging Strategy"............................81
Table 6. Self-ratings for Participating/conversing "Bridging Strategy"...........83
Table 7. Self-ratings for Extending "Bridging Strategy".............................85
Table 8. Self-ratings for Problem Initiating "Bridging Strategy"..................87
Table 9. Self-ratings for Role Modeling "Bridging Strategy"......................89
Table 10. Self-ratings for Instructing "Bridging Strategy".........................91
Table 11. Self-ratings for Managing/Organizing "Bridging Strategy"..............93
Table 12. Frequency of Raters' Ratings of Each "Bridging Strategy"..............95
Table 13. Frequency of Self-ratings of Each "Bridging Strategy"..................96
Table of Figure

Figure 1 ..................................................... 12
CHAPTER I

Introduction

The introductory chapter is organized into the following three sections:
(a) overview and purpose of the study, (b) rationale for the study, and (c) theoretical perspective.

Overview and Purpose of the Study

The purpose of this study was fourfold. The first was to further our understanding of the effect of videotape training and assisted performance with evaluation on student-teacher assistants' effective use of "bridging strategies" within the interactionist framework. The "bridging strategies" are eight teacher behaviors that creates a connection between an early childhood teacher and child(ren) in a teaching/learning situation (Ellis, Katz, & Jewet, 1991). The second purpose was to identify variables that influenced student-teacher assistants' effective use of the "bridging strategies". A third purpose was to explore the feasibility of using the Bridging Strategies Rating Scale (BSRS) as a feedback and evaluation tool for members of the child care and school community; and fourth, to identify which strategies were least/most used. To an extent, these issues have been explored in regard to secondary level preservice and inservice teachers. Yet, much more knowledge is needed on how these issues pertain to prospective early childhood teachers.
Therefore, it was pertinent to design a study that was guided by the following questions:

1. What effect does videotape training and assisted performance with evaluation have on student-teacher assistants' effective use of "bridging strategies" as determined by raters' ratings?

2. How do the experimental group student-teacher assistants' self-ratings compare to the control group student-teacher assistants' self-ratings of their effective use of the "bridging strategies"?

3. To what degree do student-teacher assistants perceive their effective use of the "bridging strategies" as being influenced by a variety of contextual variables. These variables were (a) how comfortable they were in using a particular "bridging strategy", (b) how clear the concept or definition of the "bridging strategy" was to them, (c) how simple the "bridging strategy" was to use, (d) had they observed their head teacher modeling the "bridging strategy", (e) how well the "bridging strategy" fit with their personal values, (f) how well the "bridging strategy" fit with their understanding of developmentally appropriate practices, and (g) was the "bridging strategy" usable and practical.

4. Which "bridging strategies" were least/most used as determined by raters' ratings and student-teacher assistants' self-ratings?
Rationale for the Study

A primary function of preservice teacher education is to assist prospective teachers to develop awareness and skills in the use of a variety of teaching strategies. The teacher education effort entails assistance that enables the prospective teacher to make a connection between theory and practice. Smith (1985) observed that teachers can not be expected to infer the skills implied by the theory and research that connects teaching and learning. As many scholars have articulated, much more knowledge is needed on how prospective teachers can be assisted to develop awareness and skills in the use of such teaching methods (e.g., "bridging strategies"). Also needed is more knowledge on how such strategies can be incorporated as concepts in the conventional semester credit course.

In 1904 John Dewey (as cited in Archambault, 1974) stated the following:

The student adjusts his actual methods of teaching, not to the principles which he is acquiring, but to what he sees succeed and fail in an empirical way from moment to moment. . . . In this way the controlling habits of the teacher finally get fixed with comparatively little reference to principles in the psychology, logic, and history of education. In theory these latter are dominant; in practice, the moving forces are the devices and methods which are picked up through blind experimentation; through examples which are not rationalized; through precepts which are more or less arbitrary and mechanical; through advice based upon the experience of others. (p. 319)
Similarly, Flanders (1966) contended that teachers do not teach in ways that they read and talk about in professional education courses. In 1969, Hough, Lohman, and Ober expressed the need for much more knowledge on how teacher educators can help beginning teachers develop awareness and skill in the use of a variety of teaching behaviors, specifically those covered in general methods courses.

The concerns that Dewey (1904); Flanders (1966); and Hough, Lohman, and Ober (1969) observed are still of concern today especially in the field of early childhood education. More recently, Tull (1994) observed that "Since teaching is not an isolated event but occurs in the context of a complex situation, reading about it or listening to a lecture seems an insufficient way to prepare teachers. Prospective teachers need to be able to observe competent teachers and then have opportunities to analyze and discuss their observations" (p. 115).

Scholars in the field of early childhood education have, through research and observation, identified teaching strategies that are appropriate for early childhood contexts (Bredekamp, 1992; Ellis, Katz, & Jewett, 1991; Hoorn, Nourot, Scales, & Alward, 1993; Lay-Dopyera & Dopyera, 1992). These strategies are assumed to be the basis of teacher roles (Eakin, 1993). In previous research, these behaviors have been treated as an observable and learnable set of behaviors that were specified as a target of training, and their effects assessed (Gliessman, Pugh, Brown, Archer & Snyder, 1989). Thus, the question arises: Can student-teacher assistants be provided with experiences in a semester course that enable them to develop more awareness
and skill in the use of such strategies?

According to Lay-Dopyera and Dopyera (1992) the conscious development of a repertoire of teaching strategies is an essential step toward a "reflecting-in-action" mode. This "reflecting-in-action" mode is associated with a teacher's development of self-confidence and earning respect from others for professional expertise (Schon, 1983). Furthermore, Lay-Dopyera and Dopyera (1992), observed that "without a repertoire of alternative strategies for potential teaching situations, the practitioner has little decision-making flexibility" (p. 15). If these assumptions are true, then it is justifiable to conduct a study that will further our knowledge about the following:

1. The effect of providing experiences that assist student-teacher assistants in developing awareness of and skills in the use of "bridging strategies". Few studies exist that have systematically investigated teaching strategies within early childhood contexts, per se. Yet, professionals have always stressed the need for such studies. For example, Feeney and Chun (1985) observed that "if future studies are to help improve teacher effectiveness, they must not overlook the nuances of effective teaching or prescribed formulas to improve children's specific skills or behaviors" (p. 52).

2. It seems logical to identify variables that may influence student-teacher assistant's utilization of the "bridging strategies". Although scholars have speculated on some variables that may possibly influence teaching behaviors, none in early childhood education have actually addressed the issue.
3. The need for assistance at all levels can not be overemphasized. Therefore, the prospect of developing the Bridging Strategies Rating Scale (BSRS) which could be a medium for "joint productive activity" among members of the child care and school community seems a worthwhile effort. According to Gallimore and Tharp (1992), the jointness that communities of learners create is associated with assisted performance and affects cognitive structures of the learners.

4. In order to extend knowledge in pre-service education, it is important for teacher educators to know the teacher behaviors that are least/most used by the student-teacher assistants.

**Theoretical Perspective**

The "bridging strategies" that form the basis of this study are based on an interactionist model which holds that learning and development occur when the adult and child connect (Eakin, 1993). According to Eakin (1993), the concept of "bridging", defined as eight teaching strategies, forms the basis of the teacher’s roles in the early childhood classroom.

The emphasis on the importance of the adult in the child’s social context is consistent with Vygotsky’s sociocultural theory of the development of higher cognitive functions or cognitive skills (e.g., memory, attention, problem-solving, etc.). According to Vygotsky (1978), cognitive functions first exist in the interpsychological plane (i.e., sociocultural plane), before they are internalized and exist as
intrapsychological functions (i.e., individual plane). He further posits that the adult's role is critical in the transitional phases from interpsychological to intrapsychological planes, because adults instrumentally assist the transition by "teaching to" or being sensitive to a child's zone of proximal development (ZPD).

He described the ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). In other words, with an adult's assistance the child is capable of achieving higher levels of performance than she/he could have achieved through independent problem-solving. Vygotsky's concept of ZPD has been used to connect general psychological perspectives on child development with a pedagogical perspective on instruction (Hedegaard, 1992).

Vygotsky's (1956) perspective on teaching is expressed in his observation that teaching or instruction "...is good only when it proceeds ahead of development. It then awakens and rouses to life those functions which are in the stage of maturing, which lie in the zone of proximal development. It is in this way that instruction plays an extremely important role in development" (p. 278).

Vygotsky's conception of teaching is, to an extent, very much in line with the constructivist approach to teaching and learning as advocated by the National Association for the Education of Young Children (NAEYC). According to the constructivist view, pupils are expected to actively construct their knowledge and
understanding (e.g., making connections, building mental schemata, and developing new concepts from previous understandings) rather than passively receiving knowledge transmitted by their teachers.

Constructivism is not only applicable to teaching children. As Tharp and Gallimore (1989) contend, "Teachers like their students, have ZPDs; they too, require assisted performance" (p. 24). Furthermore, Gallimore (1990), made the observation, that "If teaching practices are to be broadened and enriched, teachers must be engaged in active self-development in ways that make their intellectual lives more stimulating than in the past. . . . The intellectual life of teachers must be supported by their daily routine, which must include not only engaging students in 'Instructional Conversations' (ICs), but teachers engaging in ICs among themselves" (p. 4).

If we are right in assuming that the "bridging strategies" identified by Ellis, Katz, and Jewett (1991) have a role to play in young children's' development and learning and that the ZPD could be as effective with adults as it is with children, it implies a challenge for teacher educators to (a) assist prospective teachers in developing awareness of and skills for the use of the strategies, and (b) identify experiences that might contribute to the prospective teachers' development of the conceptual knowledge and pedagogical skills needed to instantiate such strategies in their interactions with children. In other words, the attainment of "bridging strategies" do not only represent a potentially important training goal, but they are also seen as the means whereby the goal is achieved.
In Eleanor Duckworth’s (1987) book entitled The Having of Wonderful Ideas and Other Essays on Teaching and Learning, she made suggestions on how prospective elementary science teachers could be assisted in the use of Piaget’s ideas in their teaching. One suggestion was that teachers themselves learn in the same way as the children in their classes. In so doing, the teachers feel what it is like to learn in the way the children will be learning. Furthermore, she noted that it seems valuable for teachers to see film of live demonstration of a class of children learning in this way, so that they can begin to think it really is possible to run their class in such a way. The first suggestion is much the same as the close alignment of Instructional Conversation and the medium of training that was articulated by Gallimore and Goldenberg, (1992) and Saunders, Goldenberg, and Hamann (1992).

The second suggestion is much in line with the concept of videotape training which is partly the purpose of this study.
CHAPTER II

Literature Review

In an attempt to conceptualize the scope and to enhance the researcher’s theoretical sensitivity to the research questions that this study sought to address, a diverse but relevant technical and nontechnical literature was purposely reviewed. Diversity of literature was achieved by tapping into literature from a variety of substantive disciplines (e.g., education, psychology, child development, etc.). The result is presented in the subsequent sections. They are (a) theoretical and philosophical background, (b) strategies for teaching young children, (c) effect of training method with use of videotape, and (d) identified variables that influence the acquisition of specific teaching skills.

Theoretical and Philosophical Background

Early childhood education scholars have asserted a direct relationship between the implicit or explicit philosophical framework that teachers hold and their professional behaviors (Mitchell, 1990; Schickedanz, York, Stewart, & White, 1990; Spodek, 1987). Underlying such an assertion is the assumption that effective teaching practices are rooted in theory. Thus, the subsequent section focuses on the theoretical or philosophical framework that underlies the "bridging strategies" identified by Ellis, Katz, and Jewett (1991).
The "bridging strategies" (see Figure 1) that form the basis of this investigation are based on an interactionist model (Eakin, 1993), which may also be called the "cognitive-developmental" model (Schickedanz, York, Stewart, & White, 1990). This model posits that cognitive development is a result of both maturation (internal structures) and environmental (physical or social) experiences. Vygotsky’s (1978) sociocultural perspective on cognitive development and Piaget’s (1963) theory on cognitive development are consistent with the interactionist model of teaching and learning. In fact, Piaget is credited for first formulating the interactionist model (Schickedanz, York, Stewart, & White, 1990). Vygotsky and Piaget differ on their assumptions about the origins of mental functioning (Berk & Winsler, 1995). Given Ellis, Katz and Jewett’s (1991) assertion that the concept of "bridging", defined as eight teaching strategies, forms the basis of the teacher’s roles in the early childhood classroom, Vygotsky’s sociocultural theory will be important in informing the researcher’s theoretical conceptualization of the research.

Vygotsky’s theory is based on the premise that intrapsychological functioning is interpsychological in origin. This means, learning takes place through social milieu as the adult and child engage in synchronized interactions. Vygotsky (1978) used the metaphor "Zone of Proximal Development" (ZPD) to describe the process of learning and development. He described the ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or
<table>
<thead>
<tr>
<th>Strategy Number</th>
<th>Who Controls the Context</th>
<th>Descriptive Definition of Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Child</td>
<td><strong>Observing</strong>: Actively watching the child think in order to diagnose and plan for learning. The teacher is mentally but not physically active.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td><strong>Validating</strong>: Acknowledging, supporting, and nurturing the child’s behavior in a way that does not interrupt or alter the child’s activity. The teacher and child are equally active.</td>
</tr>
<tr>
<td>3</td>
<td>Teacher/Child</td>
<td><strong>Participating/Conversing</strong>: Listening, talking, and interacting in responsive partnership with the child. The teacher and child are equally active.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td><strong>Extending</strong>: Identifying what the child is thinking and elaborating on, challenging, and furthering the child’s thinking processes. The teacher and child are equally active.</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td><strong>Problem initiating</strong>: Posing and taking advantage of problems, conflict, and appropriate challenges and questions that engage the child’s thinking. The teacher and child are equally active.</td>
</tr>
<tr>
<td>6</td>
<td>Teacher</td>
<td><strong>Role modeling</strong>: Displaying expected problem-solving and thinking behaviors and attitudes toward learning. The children may react by imitating, responding, remembering, or ignoring.</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td><strong>Instructing</strong>: Imparting and/or demonstrating information that the child is expected to learn. The attention of the child is required. The teacher sets clear expectations and guidelines for children’s behavior and the material being taught.</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td><strong>Managing/Organizing/Providing</strong>: Preparing the environment and establishing a context for safe and stimulating learning on an ongoing basis. Providing regular opportunities for children to encounter meaningful experiences</td>
</tr>
</tbody>
</table>

Figure 1. Summary of the eight “bridging strategies” for teaching young children: According to Eakin’s (1993), the eight strategies are the basis of all the teacher roles.
in collaboration with more capable peers" (Vygotsky, 1978, p. 86). In other words, with an adult's assistance the child is capable of achieving higher levels of performance than she/he could have achieved through independent problem-solving. Hedegaad (1992) observed that Vygotsky's concept of ZPD connects general psychological perspectives on child development with a pedagogical perspective on instruction.

The specific aspect of Vygotsky's theory that best explains learning the twin processes of appropriation and internalization. According to Vygotsky (1978), the information, activities and mental strategies present in interactions between teacher and student are appropriated by the student to guide his/her independent thinking. Therefore, the teacher and student are active participants in teaching/learning.

Vygotsky's (1956) theory asserts the teachers role as crucial in students' attainment of internalization, partly because the teacher uses language to assist the student in forming a representation of what is to be learned. Although the learner's early representations may not mirror those of the teacher, ideally, over time the learner begins to approach the task as the teacher does. The significance of the adults role in childrens' development and learning is also captured in Vygotsky's writings on the development of "scientific concepts" in children, which he contends can only be attained through instruction. "Scientific concept" is defined as "a phenomenon that occurs as part of the educational process, constitutes a unique form of systematic cooperation between the teacher and child" (Vygotsky 1987, p. 168).
Given their status as "pedagogic experts" (Gallimore & Tharp, 1992), teachers are implicitly charged with the responsibility for setting up learning tasks and engineering student participation in them. Embedded in the notion of "pedagogic expert" is the belief that as the more accomplished participant in the classroom, the teacher understands the task and its requisite skills. Even in classrooms where students actively take control of their own learning; it is the responsibility of the teacher to structure and constrain student activities toward valued ends or "scientific concepts". Through verbal and nonverbal behaviors, the teacher shapes classroom activities and student participation in them. Therefore, what the student and teacher do together determines what is appropriated and internalized for future use by the individual student. Vygotsky's (1978) theory, therefore, sees learning and development as resulting from synchronized interaction between the adult and child. This perspective is, to a great extent, in line with the Piagetian (1963) perspective of cognitive development that focuses on how the individual child learns from experimentation in the physical and social world.

In comparison to the Vygotskian perspective, the Piagetian perspective puts less emphasis on the role of the adult in the child's development and learning. Yet, as many constructivist scholars (e.g., DeVries & Zan, 1995; Elkind, 1988) have acknowledged, it would be naive to consider the adult's role negligible even in the most highly Piagetian classroom. Materials, activities, and classroom organization have little or no intrinsic value or benefit in and of themselves. Their most essential
aspects are attained through use by trained and skillful teachers. Therefore, it seems logical that the implications for teaching within an interactionist framework could be manifested or orchestrated as the eight "bridging strategies" identified by Ellis, Katz, and Jewett (1991). The primary focus of this study is aimed at assisting student-teacher assistants to become more aware and effective in using the eight "bridging strategies" within the interactionist framework.

To attain such a research goal, Miller (1993) has identified the following five criteria that must be met in order to follow a Vygotskian framework: (a) Look at both adult and child behavior and at how each adjusts to the previous response of the other, (b) assess what a child can do both alone and with an adult’s help, (c) look at the gradual shift in responsibility from adult to child over the course of the session, (d) assess how the adult structures the learning process, tries to pull the child to a slightly higher cognitive level, relates the problem to the child’s previous experience, and adjusts the amount of help to the difficulty of the task, and (e) examine how the culture shapes the nature of the adult-child interaction. Of these, the study, to an extent, addressed A, B, C, and D. It is not unusual for a study to incorporate only certain aspects of the five characteristic as was the case in this study. Granted, there is an inherent limitation of reduction when such characteristics are not fully met. The researcher was convinced that, for the purpose of this study such limits were unavoidable. Although not directly related to the proposed study, Miller (1993) stated that:
Of course, any attempt to divide behavior into parts is somewhat arbitrary because there is an interrelated system, or the famous 'whole child'. Nevertheless, since scientists are not superhumans, everything about the child can not be studied at once. They have to do some breaking down before they can build up again. (p. 6)

The next section focuses on the teaching strategies that form the basis for this research.

**Strategies For Teaching Young Children**

The idea of assisting teachers in strategy acquisition may seem a recipe-oriented approach to assisting teachers become more aware and effective in their interactions with young children. This however, is not necessarily the case. Teacher educators and would-be reformers are challenged with the responsibility not only to identify and conceptualize forms of teaching to promote desirable interactions in the classroom, but also to assist teachers in developing the conceptual knowledge and pedagogical skills needed to instantiate such interactions (Gallimore & Goldenberg, 1992). Further support of the idea of assisting teachers to become more aware of their practice has been articulated by many theorists and education scholars. For example, Vygotsky (1987) theorized that "scientific concepts" (defined elsewhere) can only be attained through instruction. In an effort to distinguish between "spontaneous concepts" (a phenomenon that develops through the child’s practical activity and immediate social interaction) and "scientific concepts", he argued that each mental
function initially develops in unrecognized, inadequately differentiated form ("spontaneous concepts"), after which it reaches a higher stage of its development, the stage where the person becomes consciously aware of, and voluntarily in control of what he/she was being assisted with through a system of formal instruction ("scientific concepts").

According to Lay-Dopyera and Dopyera (1992), "The conscious development of a repertoire of teaching strategies is an essential step toward reflection in action. . . . The systematic planned expansion of repertoire requires a shift away from an assumption of a 'best' way. . . . Without a repertoire of alternative strategies for potential teaching situations, the practitioner has little decision-making flexibility" (p. 15).

In his book entitled *The Reflective Practitioner: How Professionals Think in Action*, Schon (1983) contended that the development of self-confidence and the earning of respect from others for professional expertise is associated with "reflecting-in-action". A practitioner is said to be reflecting-in-action when she/he is consciously aware of what she/he is doing while doing it, and thinks about how it is working. Furthermore, the conscious awareness can also be in advance of action as well as on the spot (Lay-Dopyera & Dopyera, 1992).
The teacher's role has been identified as one of the most important components that defines quality of care and education in early childhood programs (Catron & Allen, 1993). This importance is evident in the prevalence of a section on "Teacher's Role" or "Role of the Teacher" in early childhood education curriculum text books. The teacher's role is typically depicted as complex, multifaceted, interrelated, and behaviorally defined as strategies that are appropriate for general or specific interactions with children. For example, general strategies are those that specifically pertain to the early childhood contexts during play and nonplay teacher-child interactions (Lay-Dopyera & Dopyera, 1992); within the developmentally appropriate practices (DAP) framework (Bredekamp, 1992); during playful teacher-child interactions (Hoorn, Nourot, Scales, & Alward, 1993); and in fostering logical and mathematical thinking (Ellis, Katz, & Jewett, 1991). Most of the strategies that early childhood professionals have identified are theoretical or philosophical assertions.

While not using exactly the same terms the eight "bridging strategies" are covered in sections on teacher role in many early childhood education texts. Surprisingly, though, little research has been done to confirm the effective use of the strategies in supporting children's learning; thus it seems that these strategies are left to be "spontaneous concepts" in Vygotskian theory. This review section focuses on the "bridging strategies" in Figure 1, that form the basis for this study and other theoretical assertions that are complementary. The strategies are:
Observing. Observing children is one way to collect information about children’s learning and development. Within an interactionist framework, Eakin (1993) defines observing as "actively watching the child thinking in order to diagnose and plan for learning. The teacher is mentally in control but not physically active, and the child controls the context" (p. 18). For example:

The teacher, Ms. Bessem, actively watched a child, Tanyi, who was absorbed in her/his play with blocks of different shapes and sizes (e.g., arch, elliptical, unit, large switch etc.) in order to gather information about Tanyi’s way of thinking and to formulate a plan for furthering Tanyi’s learning with blocks.

Through observing the teacher gathers information that enables her/him to identify with the child’s thinking and convey acceptance and trust. Information collected from observation informs the teacher’s decision not to disrupt productive play or give guidance when needed (Christie, 1982).

The generic knowledge of child development and learning that teachers typically command is insufficient in regard to informing their efforts to assist children develop physically, socially, emotionally and cognitively (Wilford, 1996). Observing in the naturalistic setting of the classroom has been recommended by many early childhood educators as a strategy that teachers should use to collect more information about children’s physical (Wilford, 1996), social/emotional (Hatch, 1994; Wilford, 1996), and cognitive development (Christie, 1982; Cohen, 1995; Wilford, 1996).
Vygotsky (1978) and Piaget (1963) used the process of observing in theorizing about children’s cognitive development. Likewise, effective teachers who observe children may have better insight into the process as well as the product of children’s constructed knowledge. Therefore, it seems logical to assume that whatever information collected during observation will enable the teacher to more effectively interact with children.

In essence, observation forms a spring-board for the appropriate use of all other "bridging strategies" (e.g., validating, participant/conversing, extending, problem initiating, role modeling, instructing, managing/organizing/providing).

Validating. Validating is described as "acknowledging, supporting and nurturing the child’s behavior in a way that does not interrupt or alter the child’s activity. The teacher and child are equally active, but the child controls the context" (Eakin, 1993, p. 19). For example:

As Bate is absorbed in his/her play with the blocks, he/she accidentally or intentionally makes a construction that looks like a track and his positioning of the blocks resulted in a tunnel-like construction. The teacher, Ms. Bessem, validated by saying "look! there you got it (pointing gesture). That’s a great idea (pause). Look at that; you got a tunnel".

We know that children’s perspectives and thinking are usually different from that of adult. What seems meaningful to an adult may have little meaning to a child. Many educators have articulated the need for children’s thinking to be respected by teachers (Duckworth, 1987; Scoy, 1995; Shaw & Cliatt, 1991). Through acknowledging, accepting, and encouraging, teachers show children their ideas are
valued. Such practice requires teachers to observe and listen to children; to put what they see and hear the child do or say in the context of child development; and to use mistakes as contexts for children to learn (Shaw & Cliatt, 1991).

Researchers have observed that when children's ideas are valued, they are autonomous in their thinking, learning and development (Scoy, 1995; Shaw & Cliatt, 1991). Furthermore, children's ability to engage, and the frequency of their engagement in pretend play increased (Perlmutter, 1990). Undoubtedly, the best way for children to develop positive feelings about learning is through achieving success in their tasks (Gareau & Kennedy, 1991). Nonetheless, the teacher's nurturing interactions accommodates for the child's physical and psychological development, which helps the child develop positive body images and self-concepts (Catron & Allen, 1993).

Given our limitations in accessing children's perspective and levels of understanding, it can be posited that by validating (being mindfully sensitive to individual differences in children's self-concept and task-motivation), teachers will be encouraging children to express their ideas, share their thinking which will in turn result in effective teaching practices. It is considered appropriate practice and recommended that early childhood teachers move around the room acknowledging children for constructive efforts (Katz & Chard, 1989).
Participating/Conversing. Eakin, (1993) described participating/conversing as "listening, talking, and interacting in responsive partnership with the child. The teacher and child are equally active and the teacher and child control the context" (p. 9). For example:

It is snack time, a child, Ashu, is helping the teacher. Mrs. Nju, punch a hole in a can of juice. Mrs. Nju (observing and interacting with Ashu) supports the can by holding the bottom, and another child. Ebangha, holds another side of the can to support it on the table. Ashu is trying really hard to get the hole punched in the can. Mrs. Nju verbalized "want a little help?" before she reaches to physically assist. Ashu agreed (nods). Mrs. Nju encouraged "keep going". Finally, Ashu, Ebangha, and Mrs. Nju, in partnership punched the hole in the can. Mrs. Nju excitedly observed "you did it!" Ashu and Ebangha seemed pleased. Mrs. Nju added "hard work!". Ebangha excitedly observes "I did help holding the can while Ashu punched the hole" Mrs. Nju responded "You did hold the can. Thanks!. Want to pour some in the pitcher (passing the pitcher to Ebangha).

There is supporting evidence that participating/conversing as a teaching strategy is an effective approach to encourage pretending (Perlmutter, 1990); particularly for younger children from lower socioeconomic background (Christie, 1983). When engaged in participating/conversing role, the teacher stimulates and models purposeful play without dominating the situation (Crosser, 1992). In addition, the teacher is mindful of the fact that her/his participation must harmonize with the play of the child, or else it will disrupt and end the play. Therefore, it is suggested that the teacher uses techniques that extend and enrich the play (Christie, 1982). This leads us to the next strategy-- extending.
Extending. Eakin (1993) describes extending as "identifying what the child is thinking, and elaborating on, challenging, and furthering the child's thinking processes. The teacher and child are equally active, but the teacher controls the context" (p. 19). The following vignette describes an attempt that a teacher made to extend children's activity.

The teacher, Ms. Bessem, planned an activity that challenges the children's thinking. She hands out a pattern for making one square out of seven tangram pieces. The children worked individually--placing the blocks on the pattern. Ms. Bessem walked around facilitating the activity and observed that a child, Bate, is finished. Ms. Bessem observed "Terrific! now do it next to the paper on the rug just by looking". Bate started doing just as the teacher instructed. Ms. Bessem observed Bate for a moment and said "yep, you are there". Another child, Nkeng, was at a table tracing the shapes of the tangram on a paper when the teacher walked by. Ms. Bessem observed for a moment and suggested Nkeng would make the tangrams and pattern to take home "and you know you can make your own tangram". Nkeng responded "I don't have tangrams but I do have pieces that might have these shape on them", then Ms. Bessem reiterated "you know you can make your own tangram.... You know how?" and Nkeng said "No"; then Ms. Bessem added "just by cutting this out (pointing gesture)". Nkeng responded "Hum", and Ms. Bessem continued "Like you could make another one like this for cutting. This one could be the square that tells you how to put the shapes" (pointing gesture).

It is certainly clear that knowledgeable adults play a vital role in assisting (particularly using language as a mediator) children in attaining their potential levels of development. This position is particularly accentuated in the literature that posits cognitive functions as social in origin (Berk & Winsler, 1995). The effectiveness with which a teacher attains such goals depends on how effectively they match their assistance to the child's ZPD; in other words, "teaching to a child's ZPD" (Cassidy, 1989). This is crucial because the accuracy with which the ZPD is gauged will
determine the appropriateness of challenges that the teacher is posing on the child. It is problematic when a teacher's efforts to extend children's thinking is not within the ZPD. Again, appropriate verbalization is fundamental to this process (Berk & Winsler, 1995), because it initially serves as a springboard to more verbal interactions that challenges the child to think at a higher level. Newson and Newson (1975) used the term intersubjectivity, within the context of scaffolding, to capture the "springboard" nature of teaching-learning interaction.

Extending is a part of "scaffolding" coined by Wood, Bruner, and Ross (1976) and "guided participation" coined by Rogoff, Mistry, Goncu, and Mosier (1993). In comparison to guided participation, scaffolding is the most investigated strategy in the literature that describes teaching-learning interactions within the ZPD (Berk & Winsler, 1995).

Language is considered an appropriate medium during the process of scaffolding as an extending technique (Wood, Bruner, & Ross, 1976). Questioning is one verbal technique used in attaining goals of extending. Posing questions that elicit extensive and complex responses from the child by challenging her/him to think beyond the immediate present (Sigel & Saunders, 1979). It is advisable for the teacher to be mindful not to overwhelm the child with testing questions (Rogers, 1990) and make provision for the child to respond (Shaw & Cliatt, 1991). There is direct association between the level of distancing posed by adult questions, verbal utterances and the child's cognitive achievement (Sigel, 1982).
For example, Palincsar and Brown's (1984) research on comprehension of text exemplifies the importance of the teacher in structuring the learning situation through appropriate questioning. The findings of their study revealed that elementary students labeled as problem readers not only improved their ability to formulate appropriate questions, but improved their reading comprehension score. Therefore, it can be posited that questioning is an effective technique for extending.

Problem Initiating. Problem initiating is described as "posing and taking advantage of problems, conflicts, and appropriate challenges and questions that engage the child's thinking. The teacher and child are equally active, but the teacher controls the context" (Eakin 1993, p. 19). For example:

Children (three girls and two boys) are at the water table when the teacher, Ms. Ndako, joins in and squats down to the children's eye level. After Ms. Ndako observed for a moment, she said "you know what (making eye contact with the children) when I came this morning I filled it (water table) just this high (gesture). Guess how many buckets it took to get it this high?" The children responded "how many" (in chorus). Ms. Ndako asked "what could you guess?". A child, Agbor, said "10". The teacher observed "boy! you are really close" Another child, Taku, guessed "14"; again, Ms. Ndako observed "you are even closer". Achuo suggested "15" and Ms. Ndako said "it took 15 buckets to get it this high (pause) I wonder how many buckets it will take to fill this whole table (pause) what do you think?". Achuo suggested "40", and Taku guessed "50". So Ms. Ndako proposed "I have this idea that we could try to do it and see. I have some buckets here and I thought maybe we could take the toys out and try and see how many buckets it takes to get it to the top". All the children responded "Oh yeah! (excitement)". It was action time--some children pouring, some recording number of buckets of water on the chalk board. Ms. Ndako assisting some of the children calculate the total number of buckets of water that they added in.
Undoubtedly, learning is more meaningful when it starts from the interest and ideas of the children (Edwards, 1993). It is appropriate practice for teachers to initiate learning activities that challenge (i.e., pose questions, offer procedural suggestions, suggest explorations, and provide information) children to move beyond their current level of thinking and understanding (Kostelnik, 1992). It could take the form of what Crosser (1992) labels "redirecting play". Teachers assist children having difficulty planning a meaningful activity. For example, the teacher may suggest the child use blocks in building non-weapon constructions (e.g., chocolate factory, garage, rail tracks) instead of building weapon (e.g., guns, spears). Edwards (1993) posits that a technique for initiating a project involves structuring a provocation that surprises or delights and arouses questions and conversation among children without giving answers. This technique has been effective in the Reggio Emilia program. In the teacher’s efforts to initiate problems she/he may be role modeling. Role modeling is the next "bridging strategy" to be discussed.

**Role Modeling.** Role modeling is a strategy that is often associated with the behaviorist approach. Many research based on the behaviorist framework has supported the importance of role modeling as an effective teaching strategy. However, for the purpose of this study literature based on the behaviorist framework will not be covered.
Eakin (1993) describes role modeling as "displaying expected problem-solving and thinking behaviors and attitudes toward learning. Children may react by imitating, responding, remembering, or ignoring; and the teacher controls the context" (p. 19).

The following vignette illustrates how a teacher displays problem solving behavior and desirable attitude toward math:

The teacher, Mr. Takem, has a ruler in his hand and is measuring the width of a book shelf. He turns to a child, Nju, and observed "Nju I am thinking about moving this shelf". Nju responded "to where". Mr. Takem said "well I was thinking about moving it over, under that bulletin board", then Nju said "oh". The teacher added "you know where that table is (pointing). Do you think it will fit? (paused) I wanted to measure to be sure. Come on let's measure and see how long this one is" (places ruler along edge of the shelf). Nju moved closer and observed for a moment, then said "It look like 27 inches" (pointing to the ruler). Mr. Takem concurred "that's what it looks like to me too" (paused). Do you think we have inches on the wall where we can fit this one?". Nju responded "I don't know". Mr. Takem extended an invitation "Well let's go see, OK".

Underlying the advocacy for role modeling as a teaching strategy is the assumption that teacher's demonstration of the behavior she/he would like children to adopt is the most effective technique for teaching/learning (Shaw & Cliatt, 1991; Gareau & Kennedy, 1991). It is assumed that children learn best from what they see you do rather than what they hear you say (Shaw & Cliatt, 1991). Thus, it is logical to posit that role modeling is a technique that could be effectively used in teacher's efforts to assist children develop and learn.
Role modeling as a teaching strategy is also embedded in Vygotsky's perspective on how the child, through interactions with the adult (teacher) develop higher cognitive functioning. According to Vygotsky (1978), the teacher controls the initial phase of such interactions by modeling appropriate verbalizations and/or appropriate manipulation of materials. The teacher's role modeling phases out as the child demonstrates more independence in performing the task.

There is support in the literature for role modeling as a teaching strategy in the preschool, especially in regard to teachers being models for writing (Holmes, 1993). Positive effects have been associated with teachers assuming the role of models as facilitator, rather than dictators (Holmes, 1993). In regard to reading, there is significant evidence that having adult models for reading activities influences young children's reading acquisition (Greeney, 1986). Furthermore, the significance of role modeling as a teaching strategy is captured in Kontos' (1986) observation that "a major reason young children want to learn is that they see the people they admire doing it" (p. 64). Given that children typically admire their teachers, it can be posited that they will cultivate attitudes and dispositions that are similar to those exhibited by their teachers.

In regard to evaluating children's work, Potter (1985) suggested teacher's modeling appropriate behaviors (e.g., being able to acknowledge areas of ability and of incompetence in themselves) as an effective way to teach children about setting appropriate standards for their work. In so doing children may deconstruct their
superficial perceptions of learning/teaching. Another strategy that teachers use to assist children develop and learn is instructing, which is the focus of the next section.

**Instructing.** Like the role modeling strategy, instructing is often associated with the behaviorist approach. Many studies based on the behaviorist framework have supported the effectiveness of instructing. However, for the purpose of this study literature, based on the behaviorist framework will not be covered.

Instructing, as described by Eakin (1993), is "imparting and/or demonstrating information that the child is expected to learn. The attention of the child is required. The teacher sets clear expectations and guidelines for children's behavior and the material being taught. The teacher controls the context" (p. 19). For example:

A child, Batuo, is playing with cards on the name chart. Mr. Abane observes for a moment and joined Batuo, then she verbalized "There is something interesting about this chart. It starts with (pause) all this names in the room and all the A (pointing) and all the B names (pointing) then C (pointing) we don't have any D names in the room then E (pointing) so this is called the ABC order because it goes ABC. Some people call it the alphabetical order"

When conceptualized narrowly as didactic efforts (e.g., direct instruction on letter formation and penmanship) where children are passive recipients of a mirror image of the teacher's knowledge, instructing could be perceived as an inappropriate teaching strategy in the early childhood context. This narrow conception may manifest itself as a myth associated with appropriate practices in the early childhood context, for example, "in developmentally appropriate classrooms teachers don't teach" (Kostelnik, 1992). Contrarily, teachers use a variety of instructional
techniques (e.g., questioning, offering procedural suggestions, suggest explorations and provide information) in teaching young children (Kostelnik, 1992).

The interactionist approach to instructing is captured in Vygotsky’s (1956) observation that effective instructing should "rouse to life" the cognitive functions that are in the process of developing. Consequently, the challenge for the teacher is "teaching to" a child’s ZPDs—providing experiences that challenge the child but that can be accomplished through sensitive adult assistance (Berk & Winsler, 1995). The interactionist approach to instruction guided Palincsar and Brown’s (1984) study entitled "Reciprocal Teaching of Comprehension-fostering and Comprehension-monitoring". Their findings revealed the importance of adults in structuring learning situations through questioning techniques.

Another pool of research that exemplifies the instrumental role of instructing in children’s development and learning are studies guided by the scaffolding technique (Jones & Nimmo, 1994; Pacifici & Bearison, 1993). Underlying the use of the scaffolding technique, joint problem solving, intersubjectivity, warmth and responsiveness, keeping the child in the ZPD, and promoting self-regulation (Berk & Winsler, 1995). What the teacher and child do in their interaction can only go so far without the provision of appropriate materials, and orchestrated management and organization of the materials.
Managing/Organizing/Providing. This strategy is described as "preparing the environment and establishing a context for safe and stimulating learning on an ongoing basis. Providing regular opportunities for children to encounter meaningful experiences and the teacher controls the context" (Eakin, 1993, p.19). For example:

The teacher, Ms. Tambe, prepared an activity using tangrams and read a story about how tangrams could be used to make a variety of shapes. Then, she provided children with tangram activity using tangrams and pattern for shapes that appeared in the story.

In order that children maximize their learning from experiences with materials and equipment, care must be taken in regard to managing, organizing, and providing. Materials need to be organized so play can proceed naturally and without unnecessary disruption. Knowledgeable teachers believe that there is a direct relationship between the kinds of behaviors that children exhibit and the arrangement/organization and availability of materials (Crosser, 1992). Serious thought should be given not only to the variety, amount, and range of material, but in determining which materials to remove and what new material to add to a play context.

Crosser (1992) captured the essence of managing/organizing/Providing in her proposition of "BASIC" in regard to arrangement and management of the early childhood classroom. The mnemonic (BASIC) stands for: (a) before school begins; (b) arrival and departure times; (c) schedule transitions; (d) interactions with equipment and materials; and (e) conflict management. Furthermore, she cautioned about the potential for haphazard activity if children’s interactions with equipment and
materials are not properly managed. Questioning and commenting, redirecting play, and setting limits with equipment and materials are appropriate techniques for the management of equipment and materials (Crosser, 1992). Specific to organizing, Gareau and Kennedy (1991) observed that the teacher's role is to organize the classroom environment to allow children to maximize their abilities to assume responsibility for their own learning.

In conclusion, the "bridging strategies" are teaching behaviors that are associated with children's development and learning in the early childhood contexts. As with other appropriate teaching behaviors, there is a continued concern as to how teachers and teachers-to-be can be assisted to become more aware and effective in the use of the "bridging strategies". The continued importance of such a concern forms the basis of this study designed to shed light unto our understanding on the effect of videotape training and assisted performance with evaluation on student-teacher assistants effective use of the "bridging strategies".

**Effect of Training Method With Use of Videotapes**

Many researchers have identified and analyzed the effect of research methods such as microteaching, behavior modification, video-based feedback, interaction analysis, and the use of protocol materials in changing teaching skills (Cruickshank & Metcalf, 1990). The skills that have been targeted as objectives in these studies include: questioning, inquiry methods, use of praise or reinforcement, classroom management, variety of verbal presentation skills, and the use of direct teaching
methods (Gliessman, 1981).

The acquisition of teaching skills is achieved through such processes as practice, reinforcement, or modeling. The research base that informs this section is limited to skills acquisition that are directly related to the acquisition of new cognitions by the trainee. This choice is based on the apparent relevance of the literature to the proposed study. Gliessman, Pugh, and Bielat (1979) provide a useful contrast between "practice-based" and "concept-based" training models. The concept-based model (used interchangeably with concept discrimination instructional model) prescribes a procedure in which the trainee acquires the concepts referring to specific teaching behaviors or skills as interpretive categories.

Filmed or videotaped protocols of classroom teaching often are used as "training materials" (e.g. "concept films" and "pattern films"), and it is desirable that the films be used in sequence. First, the trainee is exposed to structured experience (concept films) in which the concepts are defined and systematically illustrated through careful selected examples of teacher classroom behaviors. Then, the trainee is exposed to less structured experience (pattern films) in which ongoing classroom behavior is portrayed that can be analyzed in terms of the concept (Gliessman, Pugh, & Bielat, 1979). According to Gliessman, Pugh, and Bielat (1979), the use of the concept film followed by the pattern film exposes the trainee to structured concept learning experiences, followed by a less structured experience in interpreting complex behaviors in terms of the concepts embedded in the targeted skills that they are being
trained in. In its strict form, the concept based model does not incorporate overt practice as a training element (Gliessman, Pugh, & Bielat, 1979). Relatedly, Duckworth (1987) stressed the value for teachers in seeing films or live demonstrations of a class of children learning in the desired way, because in so doing they can begin to think that it really is possible to run their class in such a way.

Substantial findings from studies have lent direct support to the premise that teaching skills are acquired through a "concept-based" model of training. Wagner (1973) established the successful use of cognitive discrimination training in the acquisition of skills related to teaching style. Gliessman, Pugh, and Bielat, (1979) assessed the effect of concept-based training on the acquisition of teaching skills. They provided additional evidence of the use of concept-based training in the acquisition of skills in such diverse areas as reacting to pupil responses. The skills include: reproductive questioning, productive questioning, probing, informing, approving, and disapproving. Their findings revealed a positive and significant correlation between concept acquisition scores and skills score of the trained preservice secondary teachers. Gliessman and Pugh (1987) reported consistently positive correlations between level of concept mastery (as indicated by concept identification scores) and frequency of use of the referent skills in teaching.

Gliessman and Pugh (1984) have ascertained that intervention designed to promote conceptualization and reconceptualization by the trainee about her/his performance in a skills area influences performance in such complex skill area as
interacting with students through discussion. Gliessman (1987) also reported similar findings in regard to organizing teaching content clearly.

Recently, Gliessman, Pugh, Brown, Archer, and Snyder (1989) implemented and assessed the effectiveness of a "research-based" model for training in teaching skills. These researchers coined the phrase "research base" as a training model that draws integratively on the findings in three research areas. The areas include: (a) identification of teaching skills that are related to student learning; (b) developing effective training methods that result in skill acquisition; and (c) facilitating the application of transfer of acquired teaching skill. Findings of their study revealed that teaching skills identified from the research on the teaching-learning relationship (i.e., clarity of explanation) can be acquired through conceptual training in its components (i.e., framing, keys, links, focusing, providing examples, and monitoring) and applied in the classroom.

This study used aspects of the concept-based training model with a focus on early childhood student teacher assistants.

**Acquisition of Specific Teaching Skills**

Gliessman, Pugh, Dowden, and Hutchins (1988) identified variables that influence a teacher's use of acquired skills in the classroom. They classified these variables into two categories. The first category deals with those variables that are related to the training process (e.g., if the skills appear to teachers to be practical and usable as well as acceptable in terms of personal values; the clarity and simplicity
with which skills are described; practices that are not complicated, difficult to introduce in the classroom and have a clear rationale).

The second category includes those variables that are found within the classroom teaching setting itself and depend on such characteristics as the indirect support for that skill through counseling and modeling provided by the trainee's cooperating teacher. In regard to microteaching training, it has been established that if the cooperating teacher tends to exhibit target skills that are comparable to those taught in training, the student teacher will imitate the cooperating teacher's behavior models and be reinforced in her/his tendency to exhibit those skills (Copeland, 1977).

Verloop (1984) found that trainees who reported thinking more about a teaching method while teaching tended to use more components of that method in their teaching. Implied in this finding is the hypothesis that teachers who are consciously aware of teaching strategies will be more likely to demonstrate the strategies in their interactions with children. Similarly, in the manual contained in the video package "There's Math in Deviled Eggs: Strategies For Teaching Young Children", Eakin (1993) observed that in their effort to choose among the "bridging strategies", teachers may limit themselves to those with which they are most comfortable.
In an effort to investigate the effect of training in interaction analysis on the verbal teaching behavior of preservice teachers, Hough and Ober (1966) identified human relations ability, openness to experiences and comfort in using an indirect teaching style as teacher characteristics associated with success in teaching in a particular fashion. They contended that "The relative openness or closedness of a person's belief-disbelief system is related to a person's ability to receive, evaluate and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside" (p. 7).

Although not specific to teacher training, per se, Jorde-Bloom and Ford (1988) identified factors influencing the adoption of innovations (e.g., the adoption of microcomputers). The factors included attributes of the innovation, cost-effectiveness, social approval, complexity, efficiency, trialability, observability, compatibility, and terminality. The researcher's impression is that the novelty of anything (e.g., bridging strategies) could, to a great extent, be equated to innovations (e.g., microcomputer). Therefore, some of the factors that Jorde-Bloom and Ford identified are applicable for the proposed study.

From the research literature reviewed in the preceding section, the researcher identified "contextual" variables that will be measured in regard to their influence on student-teacher assistants effective use of "bridging strategies". The identified variables are: (a) comfort in using "bridging strategies"; (b) clarity of "bridging
strategies"; (c) simplicity of "bridging strategies"; (d) modeling of "bridging strategies" by Head Teacher; (e) fit of "bridging strategies" into personal values; (f) fit of "bridging strategies" with understanding of DAP; and (g) practicality and useability of "bridging strategies". It was expected that the awareness variables may help explain or predict student-teacher assistants effective use of the "bridging strategies" which may broaden our understanding of how teacher educators can assist and support the learning and development of student-teacher assistants.
CHAPTER III

Method

This chapter addressed the methodological procedures that guided the study. It is organized in the following order: (a) participants and setting, (b) general procedures, (c) measures, (d) training intervention, (e) data collection, and (f) data analysis.

Participants and Setting

The accessible population targeted for the study consisted of the junior level student-teacher assistants enrolled in a required, five semester credit hour, undergraduate course, "Curriculum and Program Planning in Child Development (FCD 4214)" at Virginia Polytechnic Institute and State University (Virginia Tech). The student-teacher assistants were homogeneous in terms of their major (early childhood education or child care administration); had not watched the video program "There's Math in Deviled Eggs: Strategies For Teaching Young Children"; and had at least a semester of prior experience interacting with children in a formal early childhood program. Since the "bridging strategies" were deemed appropriate for children three years and up, of the 31 student-teacher assistants enrolled, only 24 (those assigned to classrooms in which the children were at least three years of age by January, 1996) were eligible for the study.
Given that the student-teacher assistants were assigned to do their practicum portion of the course in the Child Development Laboratories, the researcher met with the director and head teachers. She described the project, and solicited their assistance with the project, and with their involvement. The staff and head teachers agreed to support the research. Throughout the project, the researcher kept the teachers and staff informed of the schedule of activities in the labs.

Course (FCD 4212)

The curriculum and program planning course (FCD 4214) is pivotal for the early childhood education undergraduate students. According to the professor who had responsibility for the course, Stremmel (1995, p. 1):

The course provides supervised experience in planning, implementing, and evaluating activities and experiences consistent with the developmental abilities and interest of young children (infancy through age eight). Theories and teaching methods that foster the full development of children are stressed and an integrated approach to curriculum is presented in which literacy, mathematical, scientific, social studies, and creative activities are introduced and applied. Particular emphasis is placed on the role of teacher-child and peer interaction in the development of social, communicative, and cognitive competence and intrinsic motivation (see Appendix A for course description).
As a part of the typical course requirements, students are required to plan and implement four individual activity plans in a variety of curriculum areas over an eight week period of time (see Appendix A). For the purpose of this study the first and fourth activities were videotaped.

The four weeks interval will allow some practice time for the trained subjects. An adjunct instructor was hired to teach the course during the semester the data was collected. The adjunct instructor held a masters degree in child development and had ten years of experience as director/owner of a child care center. She also had related experience in early childhood education training. She was assisted by a graduate teaching assistant (GTA). The graduate student had a B.S. in Elementary Education, had served as head teacher in the Child Development Laboratories and was currently working toward a masters degree in child development. She had served as the graduate assistant with the regularly assigned professor the previous semester.

Prior to beginning the data collection, the researcher and her major professor met with the instructor. At the meeting, the purpose of the study was explained broadly as a study of teacher-child interactions so as not to bias the instructor by detailing the specific strategies under study. The requirements of participation by the student-teacher assistants were discussed and agreed upon. Arrangements were made for the researcher to attend a specific class to recruit the subjects.
Recruitment of Subjects

The following verbalizations guided the recruitment process. Caution was taken so as not to be too specific about the purpose of the study as to bias the result.

My name is Martha Baiyee. I am a doctoral student working on my dissertation with Dr. Sawyers. We are interested in studying student-teacher assistants interactions with 3- and 4- year old children. The reason I am here today is to solicit your participation in the study. Participation or nonparticipation will in no way affect your grade in this course. If you volunteer you may quit whenever you feel the need. If you agree to participate, I will be videotaping your first and fourth activity. I will need a copy of those two activity plans and evaluations that you turn into Mrs. Mpumie. You will be required to view and self-rate the two videotapes of your interactions with the children and to complete a short questionnaire. A two hour training session on interactions will be conducted. You will receive the training between your first and fourth activity. Are there any questions I can answer regarding the study or your participation? I hope you will give serious consideration to your decision to participate in this important study. I have consent forms for you to complete and return (see Appendix B, for institutional review board approval). I will collect them today and collect them on Thursday. Thank you for your time and interest.

Because only ten student-teacher assistants responded, a follow up phone call was made to solicit their participation and on the next day of class the researcher stopped by and collected a total of nine more forms. No more follow up calls were made because of the researchers’ concern about putting undue pressure on student-teacher assistants to participate.

Nineteen of the 24 eligible student-teacher assistants volunteered as participants for the study. Lack of time was the reason given by the five student-teacher assistants who elected not to participate in the study.
Assignment to Groups

Within two weeks of recruiting the subjects, the researcher arranged with the individual participants to schedule the videotaping of their first planned activity. Using the Bridging Strategy Rating Scale (see Appendix C for BSRS) the researcher rated the participants on their use of the eight "bridging strategies". This procedure was deemed necessary to avoid a ceiling effect in which student-teacher assistants were already performing at the top level (level 5), and in order to assign students to either the control or experimental group. The screening revealed that none of the student-teacher assistants were judged to be at level 5 with regard to their effective use of the eight "bridging strategies" (see page 48 for details on scoring).

Of the 19 student-teacher assistants who volunteered as subjects of the study, nine were assigned to the control group and ten to the experimental group using a random numbers table. Following the assignment to the groups, one control group subject withdrew from the study, citing problems with lack of available time. This resulted in a final sample of eight control (eight females) and ten experimental group subjects (nine females, one male). A t-test was conducted to ensure that the group means did not differ significantly. The t-test, t (17) = .99, p > .05 revealed no significant difference between the experimental (M = 3.34, SD = .63); and control groups (M = 3.60, SD = .51).
General Procedures

As described elsewhere, participation in the study required all student-teacher assistants to have their first and fourth activity videotaped; to give a copy of those two activity plans and evaluations to the researcher; to view and self-rate the two videotapes and to complete a short questionnaire (see Appendix for questionnaire); engage in assisted performance with evaluation (experimental group only); and to attend a session on teacher-child interactions that lasted two hours for the experimental group and one hour for the control group.

Data Sources

Anecdotal records, videotapes of student activities/interactions, activity plans evaluation, and questionnaire data provided data for the study.

Anecdotal records. Prior to the beginning of data collection (three days before classes began) the researcher met with the FCD 4214 graduate teaching assistant (GTA) to seek her assistance with the study. She was asked to attend all the class meetings and to keep a record of all references to the eight "bridging strategies" which were explained to her using the BSRS description. She agreed to do so.

During week four of the study, the researcher met with the GTA to go over the notes taken to that point. At the time it was discovered that the GTA was assuming more of a co-teaching role for the course, and thus it was not possible for her to keep the anecdotal notes. Plans were then made for the researcher to meet with the instructor and GTA at the end of the data collection to retrospectively discuss
the inclusion and extent of coverage of the eight "bridging strategies". The meeting scheduled with the instructor and GTA provided qualitative data that supplemented the quantitative data analysis of this study.

Videotapes of student activities/interactions. All the student-teacher assistants who volunteered as participants were videotaped during the implementation of their first and fourth activity plans, in the naturalistic setting of the classroom. Each classroom was equipped with videotaping and microphone equipment. Also, in some cases circumstances necessitated the use of a portable video camera. Besides the fact that the videotaping equipment in the classrooms were unobtrusively and permanently positioned, the children and student-teacher assistants were accustomed to the presence of the videotaping equipment in the classrooms. Extra precaution to further desensitize the participants to the videotaping process was taken through turning on the equipment every day for at least one week prior to when the actual data collection commenced.

A decision was made to limit the videotape to a 30 minutes segment. The researcher, mindful of the fact that time is needed for the children to warm up at the beginning and trail off at the end of each activity, was convinced that the targeted time picked for data collection would be the richest in regard to maximizing the teacher/child interactions. This was deemed particularly crucial for a study based on a representative sample of the target behaviors. The 30 minute videotaped segment of the first activity comprised the pretest data and the videotape of the fourth activity
comprised the posttest data. Each of the 30 minute videotaped recordings were put on separate videotape cassettes and labelled such that the researcher but not the raters could identify the videotape as the first or fourth activity; or as belonging to the control or experimental group.

Activity plans and evaluation. The student-teacher assistants’ evaluated activity plans that contained the Instructor and GTA’s comments were collected during the evaluation sessions. The plans were used by the researcher to supplement quantitative data analysis. However, the researcher did not use the evaluated activity plans when she rated the student-teacher assistants in order to determine their groups. The raters used the plans to inform their ratings of the managing/organizing/providing "bridging strategy", which was not always obvious from watching the videotaped interactions.

Questionnaire data. A questionnaire designed to measure the influence of contextual variables was administered during each of the evaluation sessions scheduled after implementation of activity one and activity four. Additional qualitative data (field notes) was gathered during the evaluation sessions. The qualitative data supplemented the quantitative data analysis for the study.

Training Session for Non-Participants

A videotape training session which replicated the experimental group’s videotape training was scheduled for the control group and all the other student-teacher assistants who were enrolled in FCD 4214. This session, scheduled at the
completion of the data collection, was organized to fulfill the ethical requirement of having all the student-teacher assistants benefit from the study. However, none of the student-teacher assistants were present on the day when the training was scheduled. When the researcher inquired the student-teacher assistants indicated they entirely forgot or they had been very busy taking exams and writing term papers and forgot the training.

**Instruments**

Two instruments were used for the study. The Bridging Strategies Rating Scale (BSRS) and a questionnaire. Both were designed by the researcher based on the literature and research on teacher-child interactions.

**Bridging Strategies Rating Scale (BSRS)**

The BSRS is a 5-point scale with 1 = not met and 5 = fully met, used for rating videotaped teacher-child interactions. The strategies described in Figure 1 (see page 11) were based on an interactionist model of early childhood education which holds that learning and development occur when the child and adult connect in meaningful ways (Eakin, 1993). They reflect the critical role of the adult in fostering a child’s development and learning and thus were deemed an appropriate measure for the study.
**Pilot test.** A pilot study was conducted to establish the feasibility of using the rating scheme to categorize videotaped data into the "bridging strategy" categories within the interactionist framework. The pilot testing proceeded as follows:

1. A student-teacher assistant enrolled in FCD 4214 in the Fall semester 1995, and placed in the classroom of four-year-olds at the Virginia Tech Child Development Lab was videotaped for 40 minutes while implementing her individual activity plan called "beauty shop". This activity was implemented as a center activity in the dramatic play area at the Virginia Tech Lab School.

2. The researcher first watched the video to determine if she could identify the use of the strategies in the student-teacher assistant’s interactions with the children.

3. After individually viewing the video six times; and viewing, discussing, and conferring with her committee chair for more than two hours the researcher arrived at four conclusions:

   (1) To simply quantify the frequency of use of the strategies, per se, was not very informative.

   (2) The coding procedure would have to be one which did not translate into a hierarchy; thus, associating more importance to a particular strategy. This was considered important partly because the purpose of the videotape training and assisted performance with evaluation was to assist student-teacher assistants in expanding their repertoire, striving
for balance, and gaining the ability to flexibly employ strategies in their interactions with children.

(3) For purposes of this study, it was not meaningful to attempt to measure the duration of the student-teacher assistants' use of a particular "bridging strategy".

(4) Some activities inherently warrant or elicit student-teacher assistant's use of certain strategies. Thus, a coding system that would result in an averaged overall rating of the use of the "bridging strategies" was considered desirable.

The conclusions described above informed the researcher's decision to do the following:

(a) The description of the "bridging strategies" were elaborated in order to ensure that they were more mutually exclusive. For example, appropriate questions, and accessorizing were subcategories created to simplify some of the broad concepts embedded in the extending and managing/organizing/providing "bridging strategies", respectively.

(b) The descriptions of the "bridging strategies" were generalized to other curriculum areas in addition to math teaching/learning situations.
(c) A global coding system was developed to be used for coding the videotapes. The global coding ensured that no student-teacher assistant was penalized for not using any particular "bridging strategy". A student-teacher assistant's score was based only on the "bridging strategies" that were used.

(d) Student-teacher assistant’s individual activity plans were used by the raters to assess the managing/organizing/providing "bridging strategy" which was not always visible on the videotape.

(e) The raters were required to watch each of the videotape recordings at least twice before assigning scores.

As a result of the pilot testing, modifications were made that resulted in a rating instrument entitled "Bridging Strategies Rating Scale" (BSRS).

**Scoring.** The 5-point scale BSRS was scored by indicating a level 1, 3 or 5 of effective use of "bridging strategies". In order that there was allowance for variance, the researcher’s advisory committee recommended that ratings be inflated. A rating of 5 indicated that the student-teacher assistant fully and observably demonstrated a great deal of evidence of the skills, attributes, or behaviors during interactions with children; a rating of 3 indicated that the student-teacher assistant partially and observably demonstrated some evidence of the skills, attributes, or behaviors during interactions with children; and a rating of 1 indicated that the student-teacher assistant observably demonstrated little evidence of the skills, attributes, or behaviors during
interactions with children.

To determine the overall ratings, the raters' ratings were averaged by adding up all the scores to obtain a total score, then dividing by the number of "bridging strategies" used. Therefore, the highest possible overall score was 5 and the lowest possible overall score was 1. For example, we have two student-teacher assistants Ndefru and Efu. Ndefru observably demonstrated the use of four "bridging strategies" in his interactions with preschool children in the dramatic play area. The "bridging strategies" that Ndefru demonstrated were observing, problem initiating, modeling and instructing, and earned scores of 3, 5, 5, 3, respectively. Whereas, Efu observably demonstrated the use of three "bridging strategies" in her interactions with preschool children in the arts area. The "bridging strategies" that Efu demonstrated were observing, validating, extending for which she earned scores of 1, 3, 5, respectively. Therefore, Ndefru and Efu's overall ratings were:

\[ \text{Ndefru} = 3 + 5 + 5 + 3 = 16/4 = 4 \]
\[ \text{Efu} = 4 + 4 + 5 = 13/3 = 4.3 \]

The raters were instructed to base their ratings on the most effective manifestation of the use of the "bridging strategies" by the student-teacher assistant. For example, in a situation where a student-teacher assistant used a "bridging strategy" more than once, and at varied levels of the rating criteria, the highest score took precedence as the student-teacher assistants' score of effective use of that particular "bridging strategy".
The reasoning for giving the highest rating was based on Vygotsky’s concept of the zone of proximal development in which the highest level of performance is the important indicator of a person’s level of ability/understanding.

**Questionnaire**

A 7-point Likert scale questionnaire developed to measure the degree to which the student-teacher assistants felt contextual variables influenced their effective use of the "bridging strategies". The contextual variables that formed the basis for the questionnaire had been explored by empirical research, whereas other variables were professional speculations based on theoretical conviction. The questionnaire was comprised of statements such as, "I was comfortable using the 'bridging strategy' of ____"; "the 'bridging strategy' of ____ was clear and understandable"; "____ was simple to use"; " ____ was modeled by my Head teacher"; "____ fits into my personal values"; " ____ fits with my understanding of how children develop and learn"; and " ____ was practical to use". Using a 7-point scale with 1 = strongly disagree, and 7 = strongly agree, the student-teacher assistants indicated their opinions on each statement.

Prior to being administered to the student-teacher assistants, the instrument went through the scrutiny of professionals on the researchers’ committee. Suggestions from the researcher’s committee members informed structural modifications that resulted in the questionnaire.
1. The Likert scale that ranged from 1 = strongly disagree to 7 = strongly agree. This range was deemed desirable for a study that warranted accentuation of the variance of ratings. Thus, the initial levels 1, 3, and 5 were replaced with 1, 3, 5, and 7.

2. The wording of questions in the questionnaire were reworded as statements. For example, How practical was it to use the observing "bridging strategy"? was reworded to ___ was practical to use.

**Training Intervention**

The training intervention involved participation in a two hour videotape training for the experimental group, and a one hour videotape viewing activity for the control group. In addition, the experimental group student-teacher assistants engaged in assisted performance with evaluation of their first and fourth planned videotaped activity.

**Videotape Training Session**

The student-teacher assistants in the experimental group were trained by a trainer (described in detail on page 53), while the control group student-teacher assistants were engaged in a videotape viewing activity supervised by the researcher (described in detail on page 59).
Pilot of Experimental Group Videotape Training

The experimental group videotape training was pilot tested by the researcher. The purpose was to pilot test the two-hour component of the videotape training session. The procedures that were utilized for the pilot study were similar to those used for the actual study (explained in detail elsewhere). However, the subjects were inservice teachers at a private, for profit day care center.

Results of the pilot study informed modifications that were necessary for the actual implementation of the training for the study. The following procedures guided the researchers efforts to pilot test the two-hour videotape training session:

1. The researcher made a phone call to the day care center, and scheduled an appointment with the Director.

2. She met with the Director on the Virginia Tech campus, explained the training and solicited permission for her staff to participate in the pilot study.

3. Once training was scheduled, the researcher made a reminder phone call to the center a day before the training.

During the discussion part of the pilot videotape training, the teachers did not seem comfortable with instructing as a teaching strategy within the early childhood context. They generally expressed concern that the context gets too structured when the teacher assumes an instructor role.
The pilot videotape training was judged successful by the researcher. The teachers suggested that the researcher establish an atmosphere that could stimulate the mood for the training by setting up examples of center activities in the room where the training was to be conducted. The suggestion was well taken, thus, dramatic play, manipulatives, arts, concepts, and blocks center activities were set up in the room during the student-teacher assistants training session.

Participants Training

The videotape training component of the study was different for the experimental and control group subjects. Although parallel activities were planned for the control group, the goal of activities that the experimental group engaged in was specifically to assist them to become more aware and effective in the use of the eight "bridging strategies".

Experimental group. All the experimental group student-teacher assistants participated in the two hour videotape training experience on the Virginia Tech campus. A professor of child development who has taught the course FCD 4214 for seven years (referred to as the trainer) was responsible for training the experimental group student-teacher assistants. The following sections detail what the training entailed.
The objectives for videotape training were directly tied to the researcher's perspective on training which was informed by the cognitive orientation to the teaching of specific teaching skills to either prospective or inservice teachers. In accordance with the cognitive orientation, training in specific skills focused on assisting teachers in making informed decisions in regard to choosing the appropriate option in a given classroom context (Griffiths, 1977). The following were included as objectives for the experimental group's training: (a) The participants will have a sense of their individual zone of proximal development in regard to the "bridging strategies", (b) the participants will become familiar with the interactionist framework through viewing the video program, (c) the training will assist student-teacher assistants in understanding the concepts embedded in the "bridging strategies" and their characteristics, and (d) challenge the student-teacher assistants to transfer the acquired knowledge of the "bridging strategies" into effective and appropriate observable behavioral interactions with preschool children.

The following materials were used for the videotape training: (a) Concept video (a commercially made video program entitled "There's Math in Deviled Eggs: Strategies for Teaching Young Children"), (b) pattern video (a 30 minute compilation of segments of a head teacher's use of the "bridging strategies" in her interactions with preschool children at a laboratory preschool), (c) a video cassette recorder (VCR) and a TV monitor, (d) handouts (BSRS, charted strategies in figure I, outline of training, discussion questions, questions for evaluation sessions), and (e) props for
setting up one activity in each of the different centers (blocks, dramatic play, arts, manipulative, concept).

The trainer and the student-teacher assistants designated as the experimental group were the participants. The student-teacher assistants were encouraged to actively participate in the discussions by way of active listening, verbalizing and, observing. The trainer was the facilitator.

At the onset of the two-hour videotape training, the student-teacher assistants were explicitly told to make observable and maximal opportunities to appropriately use the "bridging strategies" in their interactions with children at the lab school. The student-teacher assistants were alerted to the fact that the children needed to be attuned to the "new" style of interaction; and thus, the student-teacher assistants were asked to facilitate the familiarization process by practicing the new skills regularly in the classroom. The researcher provided for practice time by scheduling the student-teacher assistant's posttest videotaping in a manner that allowed all of them an opportunity to interact with the children for three weeks prior to implementing their fourth activity. The following section details the videotaped training for student-teacher assistants.

The first five minutes was getting-acquainted time. The trainer thanked the student-teacher assistants for attending the training session. He passed out the student-teacher assistants training overview (see Appendix E for training overview), and entertained questions or comments, which were encouraged throughout the course.
of the training. An example of a question that the trainer asked was: "Does anyone have a question or comment that they would like to ask or share before we continue?" Whenever the trainer solicited a verbal response, provision was made for wait time (at least five seconds) before proceeding on to the next aspect of the training.

The next 15 minutes was devoted to discussing the interactionist perspective of child development and education. In order not to drift away from the theme, "Bridging Strategies for Teaching Young Children" the following questions guided the discussion (Eakin, 1993, p. 6):

1. What are your perspectives on the claim that a child comes into the world as a "blank slate"?
2. What in your view is a good metaphor or model for learning and intellectual development in children?
3. What implications does your view have for the teaching of children?
4. What is the importance of child-generated interactions in the learning process?
5. What role should the adult play in the interactions?
6. What role does the environment play?

A copy of the questions were handed out to the student-teacher assistants. The trainer made a conscious effort to use the "bridging strategies" (e.g., observing, validating, extending, problem initiating, instructing, etc) in the discussion of the questions.

Five minutes were devoted to getting the student-teacher assistants ready for viewing the concept video program. The trainer orally introduced the video to the student-teacher assistants, and passed out a transcript of what he verbalized, and a copy of Figure I, which served as viewing guide. The following words were used for
the introduction:

There's Math in Deviled Eggs: Strategies for Teaching Young Children shows a teacher in a nursery/kindergarten classroom who is practicing teaching strategies that have been acknowledged, when appropriately used, to optimize children's mathematical thinking and concepts. As you view the video program, notice how the teaching strategies are based on an interactionist model of development. Consider whether the classroom episodes shown on the video appear to validate this model (Eakin, 1993, p. 5). Although, this program was specifically designed to foster mathematical thinking and concepts in young children, these same strategies could be appropriately used to foster or optimize development and learning in other domains. Attached is a table of the strategies for you to use as viewing guide.

The student-teacher assistants were alerted to the fact that the use of the "bridging strategies" was not to be conceptualized as a "prescription". They were to be used flexibly during interactions with children in the classrooms. The trainer reiterated that the "bridging strategies" had no intrinsic benefit in and of themselves. A skillful and thoughtful teacher chooses among the "bridging strategies" only after assessing a situation (Eakin, 1993). The viewing of the video, "There's Math in Deviled Eggs: Strategies for Teaching Young Children" lasted 30 minutes.

Following the viewing of the video, 20 minutes were spent reacting, expressing opinions, taking comments or asking questions about what the student-teacher assistants saw on the video. A handout with the following questions guided this part of the session:

1. How does this video fit into your understanding of developmentally appropriate practice for working with young children?
2. Of the eight teacher strategies, which are most useful in child-generated situations? Which are more likely to be adopted in situations the teacher generates? Is there a balance among these strategies that was observed?

3. How could these strategies be generalized to other situations to foster other kinds of learning?

Again, the trainer made a conscious effort to use "bridging strategies" (e.g., observing, validating, extending, problem initiating, instructing, etc.) in the discussion of the questions. The pattern video was introduced to the student-teacher assistants. The student-teacher assistants used the BSRS as viewing guide. The following verbalization was used to introduce the pattern video:

The thirty minute video segment you are about to watch will show you how the skills that were used in the first video have been generalized to other classroom contexts. You will watch a lab school teacher interacting with children. Pay close attention to how the skills are manifested in observable behaviors. Attached is the BSRS for you to use as a viewing guide.

The student-teacher assistants spent the next 30 minutes watching the pattern video (described on p. 54). In the following 10 minutes, the trainer instructed the student-teacher assistants to reexamine their responses or thoughts and to share whatever modifications they would make as a result of watching the pattern video.

The trainer’s instructions were as follows:

Looking at the questions that guided our discussions, has what you’ve seen led you to consider modifying your responses or thoughts in any way? Are you persuaded that an interactionist model may provide the foundation for developing an optimal way of teaching young children? Can you imagine yourself being proficient at using these strategies? Do they seem practical to you?
The above questions guided the discussions that ensued. Again, the trainer made conscious effort to use "bridging strategies" (e.g., observing, validating, extending, problem initiating, instructing, etc.) in the discussion of the question.

During the last five minutes of the session the trainer debriefed the student-teacher assistants. First, he thanked the student-teacher assistants for participating and reminded them of the fact that the viewing training portion of the study had come to an end. He reminded them that the data collection process would include the videotaping of their first and fourth activity and that they would be required to self-rate their videotaped recordings, to respond to a questionnaire, and to engage in assisted evaluation of their pretest videotape with the researcher. A sign-up sheet was passed around for student-teacher assistants to schedule a date to meet with the researcher for the assisted evaluation activity.

Because specific skills were evaluated for the study, as a last word, the trainer cued the student-teacher assistants to the appropriateness of the use of the "bridging strategies" in their interactions with the children. The explicit instructions were designed such that they were sufficiently specific to elicit the criteria skills (if the referent concepts had been acquired), while not so specific to stimulate rote display of the skills. For example:

The essence of this experience is to assist you to become more efficient in appropriately using the teaching strategies. Thus, it is desirable that you consciously make an effort to make use of these strategies in your interaction with the children at the Virginia Tech Lab school. You may not discuss the content of this training with the other students-teacher assistants.
Control group. All the control group student-teacher assistants participated in the one hour videotape viewing activity on the Virginia Tech campus. The session was scheduled for the same evening and in the same building as the experimental group. The researcher was responsible for training the control group student-teacher assistants. The following sections detail what the activity entailed.

The primary purpose of the activity was to determine the possibility that the time spent during training with the experimental group student-teacher assistants could bias the result of the study.

The materials used for the viewing activity included: video program entitled Developmentally Appropriate Practice (DAP), VCR, chalk board, handouts (discussion questions).

The researcher and the student-teacher assistants designated as the control group were the participants. The student-teacher assistants were encouraged to actively participate in the discussions by way of active listening, verbalizing and observing. The researcher was the facilitator.

In order that the results of the study were not confounded by the positive attention that the experimental group got during the videotape training, the researcher planned a videotape viewing activity for the control group. The session and discussions included; the viewing of a 30 minutes video, "Developmentally Appropriate Practices", and related discussion. At the onset of the session, the researcher thanked the student-teacher assistants for attending the session, explained
the manner in which the session was going to progress. She passed out the questions.

The questions were:

1. What is the teacher’s role in a child’s learning and development - guide and facilitator versus dictator?
2. What is your understanding of the phrase “teachable moments”?
3. How can you apply the concept of “teachable moments” in working with young children?
4. What is your perspective on taking a field trip as part of the curriculum?
5. What curriculum goals could be fostered by a trip to the zoo?
6. How would you deal with individual children’s reactions to the experiences (scared, anxious, curious) at the zoo.

Questions or comments, which were encouraged throughout the course of the training sessions. An example of a question that the researcher asked was: "Does anyone have a question or comment that they would like to ask or share before we continue?" Whenever the researcher solicited a verbal response, provision was made for wait time (at least five seconds) before proceeding on to the next part of the videotape viewing activity.

The next five minutes were devoted to getting the student-teacher assistants ready for viewing video. The researcher orally introduced the video to the student-teacher assistants. The following words were used for the introduction:

The Developmentally Appropriate Practice video shows a teacher and her assistant planning activities and engaged in appropriate interactions with the children in an early childhood setting. As you view the video program reflect on the questions that we discussed and are contained in the handout I gave you earlier. You may jot you responses on the index cards.
The viewing of the video lasted 30 minutes, then, the researcher instructed the student-teacher assistants to reexamine their responses or thoughts and to share whatever modifications they would make as a result of watching the video. The researcher’s instructions were as follows:

Looking at the questions that guided our discussions, has what you’ve seen led you to consider modifying your responses or thoughts in any way? Can you imagine yourself being proficient at using DAP as a framework that informs your practice? Do DAP seem practical to you?

The above questions guided the discussions that ensued. Before departing, the researcher debriefed the student-teacher assistants. Again, she thanked the student-teacher assistants for participating and reminded them of the fact that the video viewing portion of the study had come to an end. She reiterated the fact that the data collection process would include the videotaping of their first and fourth activity and that they would be required to self-rate their video recordings in the researchers’ presence, and to respond to a questionnaire. A sign-up sheet was used to schedule a meeting with the researcher.

**Evaluation Sessions**

This aspect of the training was different for the experimental and control group student-teacher assistants. The experimental group’s comprised of videotape viewing, completion of BSRS and questionnaire, and 50 minutes discussion of the videotaped interactions. The control group’s was similar to the experimental group’s but for the absence of the 50 minute discussion of their videotaped interactions. In other words,
the control groups’ lasted seventy minutes. Each participant was required to attend
the two evaluation sessions scheduled after the first and fourth activities.

**Experimental group.** The following section details what the two hour session
entailed for the experimental group. The purpose of this session was to assist the
students into a higher level of understanding of the eight "bridging strategies.

The materials that were used for the session included: (a) video cassette
recorder (VCR) and a TV monitor, (b) video cassette of 30 minute segment of the
participants interactions with children, (c) two chairs and a table, and (d) BSRS and
the questionnaire.

The researcher and the student-teacher assistants designated as the
experimental group were the participants. The student-teacher assistants were
encouraged to actively participate in the discussion by way of active listening,
verbalizing, and observing. They were encouraged to ask questions regarding the
eight "bridging strategies". The researcher was the facilitator.

The researcher started each session by the thanking the student-teacher
assistant for attending the meeting; then, she verbally explained what the session
entailed. This part of the session lasted five minutes. For example:

1. Watch (twice) a 30 minute videotaped segment of your interactions with
the children.
2. Self-rate, using the BSRS, the 30 minutes videotaped segment of your
interactions with the children.
3. Respond to the questionnaire.
4. Engaged in the assisted performance evaluation of your interactions
with the children as demonstrated in the 30 minutes videotape.
5. Emphasized that it was not a purpose of this activity to serve as an evaluation of the student's performance although that was done by the FCD 4212 course instructor and GTA.

Student-teacher assistant’s questions or comments were encouraged throughout the course of the session. Whenever the researcher solicited verbal response, provision was made for wait time (at least five seconds).

The Student-teacher assistant used 30 minutes for the first viewing of her/his videotaped interactions with the children. Then, the BSRS was handed to her/him, to be used as viewing guide during the second viewing of the same videotape.

After the second viewing of the videotaped interactions with the children, the researcher used five minutes to familiarize the student-teacher assistant with the BSRS and the questionnaire, and the student-teacher assistant was given five minutes to complete the two instruments and return them to the researcher.

The next 50 minutes was spent in assisted performance evaluation that was guided by verbal questions, comments, etc. Some questions that were used for the assisted performance evaluation activity session included:

1. Which of the strategies did you think about in planning your activity?
2. Which of the strategies did you think about when you were conducting your activity?
3. Which of the strategies did you think about in evaluating your activity?

These questions were only used as guide, the researcher took the lead from the student-teacher assistant in facilitating the discussions that ensued.
During the last five minutes, the researcher debriefed the student-teacher assistant (reiterated the fact that the session was not intended to be an evaluation of their performance). The researcher thanked her/him again for participating, and reminded him/her of whatever they were scheduled to do as part of the study.

Example of the researcher's verbalization include:

Do you have any question or comment regarding the session? If not, I would like to thank you again for attending this session. We will do exactly the same thing with your fourth activity. The researcher collected copy of the evaluated activity plan that contained instructor's comments and asked them to pick a day to meet and have a similar session for their fourth activity.

Control group. The control group student-teacher assistant's evaluation session proceeded exactly like the experimental group's with the exception that they did not receive the assisted evaluation, which lasted 50 minutes. The researcher was evasive in responding to questions that she deemed would confound findings of the study. The researcher's presence was just to minimize the possibility of the results of being confounded by the absence of the researcher as they evaluated their videotapes.

Data Collection

Rater Selection. Two masters level graduate students majoring in child development were selected as raters for the study. These students were working in the capacity of Head Teachers at the Virginia Tech Laboratory School. Both had completed the "Curriculum and Program Planning Course" as undergraduate students at Virginia Tech. Precautions were taken to ensure that the raters did not know whether any given tape was pretest or posttest. Each 30 minute segment of student-
teacher assistant’s videotaped interactions with the children was recorded on separate videotape cassettes. The raters viewed tapes of only student-teacher assistants who were not assigned to their classroom. Therefore, they rated both the first and fourth activity of each subject.

Raters’ Training

Objectives. The focus of the raters training was on the use of the rating scheme to accurately identify and discriminate instances of effective use of the eight "bridging strategies" in videotaped segments of teacher-child interactions. The following materials and procedures guided the raters training.

Materials. The materials that were used for the raters training included: (a) BSRS, (b) concept video, (d) videotaped segment of student-teacher assistant’s interactions with children in the dramatic play area (henceforth referred to as student-teacher assistant’s videotaped interactions), (e) video cassette recorder (VCR) and Television (TV) monitor, and (f) handouts (training overview).

Participants’ Roles. The researcher and the raters were the participants. The raters were encouraged to actively participate in the discussions by way of active listening, verbalizing, and observing. The researcher was the facilitator. The training process was very similar to the training designed for the student-teacher assistants of the experimental group. The process was as follows:
The first five minutes was getting-acquainted time. The researcher thanked the raters for attending the training session. She gave a quick overview of what the session entailed (see Appendix F), and entertained questions or comments, which were encouraged throughout the training. The researcher often asked: "do you have a question or comment that you would like to ask or share before we continue?"

Whenever the researcher solicited a verbal response, provision was made for wait time (at least five seconds) before proceeding on to the next phase of the training.

Five minutes were devoted to getting the raters ready for viewing the concept video program. The researcher orally introduced the video to them, and passed out a transcript of what she verbalized, and a copy of Figure I, which served as viewing guide. The following words were used for the introduction:

There’s Math in Deviled Eggs: Strategies for Teaching Young Children shows a teacher in a nursery/kindergarten classroom who is practicing teaching strategies that have been acknowledged, when appropriately used, to optimize children’s mathematical thinking and concepts. As you view the video program, notice how the teaching strategies are based on an interactionist model of development. Consider whether the classroom episodes shown on the video appear to validate this model (Eakin, 1993, p. 5. Although, this program was specifically designed to foster mathematical thinking and concepts in young children, these same strategies could be appropriately used to foster or optimize development and learning in other domains. Attached is a chart of the bridging strategies for you to use as viewing guide.

The next 30 minutes were devoted to the viewing of the video, "There’s Math in Deviled Eggs: Strategies for Teaching Young Children".
Following the viewing, the next 10 minutes were spent reacting, expressing opinions, comments or asking questions about what the raters saw on the video. The following questions contained in the videotape manual (Eakin 1993, p. 7) guided this part of the session:

1. Tell me about what you saw or heard.
2. In trying to decide how many eggs were required for the class, what kinds of intuitive thinking did the children display? How did Maureen Ellis help the children develop more sophisticated thinking about the problem? To what extent were her techniques interactionist?
3. Of the eight teacher strategies, which are most useful in child-generated situations? Which are more likely to be adopted in situations the teacher generates? Is there a balance among these strategies that was observed?
4. In the card game and/or the snack preparation activity, which strategies are most in evidence? Are these most appropriate to the nature of the activity? Can you think of opportunities in these situations to encourage thinking or provide instruction beyond what is shown in the video?
5. How do you think these strategies could be generalized to other classroom situations?

Interrater Reliability

The primary purpose of the training session for the raters was to assist them in attaining proficiency in their use of the scoring criteria which identify appropriate use of "bridging strategies" in videotaped segments of student-teacher-assistant and child interactions. The definition of maximum proficiency was further practically defined as the ability of raters to rate the same videotape that was used to pilot test the "bridging strategy" with an interrater reliability of between 85% to 100%. Adams and Schvaneveldt (1991) have asserted that a desirable reliability ranges from 85% to
100% of agreement. The reliability (i.e., percentage of agreements) was then computed by dividing the number of agreements by the number of agreements plus the number of disagreements; then, multiplied by one-hundred and the result was the reliability. Below is the formula that was used:

\[
\frac{\text{# of Agreements}}{\text{# of Agreements} + \text{# of Disagreements}} \times 100 = \% \text{ Agreement}
\]

Substituting the actual data that was used to establish interrater reliability:

\[
\frac{7 \text{ Agreements}}{7 \text{ Agreements} + 1 \text{ Disagreements}} \times 100 = 87.5 \%
\]

Specific to this study, the percentage of agreements included both categorizing and rating the eight "bridging strategies". That means, it included instances where the raters agreed with regard to whether a "bridging strategy" was used as well as their judgement of the effectiveness with which the "bridging strategy" was demonstrated as reflected in their rating. In order to maintain interrater reliability, the raters viewed the concept video in the middle of the rating process.

The researcher handed out copies of the BSRS and introduced the pattern video of the student-teacher assistant's videotaped interactions. The following words were used for the introduction:

The thirty minute video segment you are about to watch will show you a student-teacher assistant interacting with children in the dramatic play area. The student-teacher assistant used some of the "bridging strategies" that were dramatized in the video you just watched. To an extent, this video is a demonstration of how the "bridging strategies" have been generalized to other
classroom contexts. Pay close attention to how the skills are manifested in observable behaviors. Attached is the BSRS, for you to use as viewing guide.

The raters spent 30 minutes viewing the student-teacher assistant's videotaped interactions. This was followed by a five minute segment to familiarize the raters with the BSRS rating system. The raters watched the student-teacher assistant's videotaped interactions again and used the BSRS for rating. Again, the BSRS served as a viewing guide while the raters watched and rated the videotape. Thirty minutes were spent rating the videotape.

During the last 5 minutes of the session the researcher computed the interrater reliability. It was not up to expectation (i.e., between 85% to 100% of agreement). Instead, it was 65% so the researcher facilitated a discussion with the raters on their differences. The discussion centered around issues regarding to rating of the "bridging strategies". For example the raters needed clarification on what was expected if a student-teacher assistant used one strategy more than once, and at different levels. They specifically wanted to know whether in such a case the score would reflect an average of the two levels or whether the best score should take precedence. The researcher reiterated that the best score takes precedence, because it is considered their potential development in Vygotsky's concept of the ZPD. Another meeting was scheduled for two weeks later.
During the second meeting the raters watched the concept video, and the pattern video of the student teacher-assistant. Prior to rating the pattern video, the raters asked for clarification with regard to the rating process. The researcher reiterated the procedure, and the rating process began. The researcher computed the interrater reliability and determined it was acceptable at the level of 87.5%.

Data Analysis

The researcher entered the data into the computer and ran the appropriate statistical analysis using SPSS statistical program. A series of 2 (groups) x 2 (time) analyses of variance (ANOVAs) were conducted on the raters’ ratings, and student-teacher assistants’ self-ratings of the eight "bridging strategies", and contextual variables. Next, t-tests were conducted within control and experimental groups comparing pretest with posttest raters’ ratings and self-ratings. Also, descriptive statistics determined which "bridging strategies were most/least used.

Qualitative data was gathered from the subjects activity plans and their verbalizations during the evaluation sessions; and the field notes taken during the researchers’ meeting with the adjunct instructor and the GTA. These qualitative data supplemented the quantitative data analysis for the study.
CHAPTER IV

Results

This chapter describes results from the statistical analysis of data collected on student-teacher assistants' use of eight "bridging strategies" in planned activities with preschool children.

Question 1

What effect does videotape training and assisted performance with evaluation have on student-teacher assistants' use of "bridging strategies"?

Trained raters scored the performance of eight "bridging strategies" on pretest and posttest videotapes of student-teacher assistant’s planned interactions with children. A summary of the means, standard deviations, t-values, F ratios using the raters rating is provided in Table 1.

A 2 x 2, analysis of variance (ANOVA) was conducted on the overall mean of the eight teacher behaviors using group (control vs. experimental) and time (pretest vs. posttest). As shown in Table 1, the two-way ANOVA was not significant, F (1,16) = 2.48, p > .05, however from pretest to posttest the increase scores for the experimental group was significant t (9) = 4.24, p < .01.

A series of 2 x 2, analyses of variance (ANOVAs) were conducted on the eight teacher behaviors using group (control vs. experimental) and time (pretest vs. posttest). As shown in Table 1, none of the two way ANOVAs were significant. A t-test comparing the control group’s overall mean score between the pretest and the
Table 1: Ratings for "Bridging Strategies": Means, Standard Deviations, T-Tests, and Two-Way Anovas

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Experimental (N = 10)</th>
<th>Control (N = 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest Value</td>
<td>Posttest Value</td>
</tr>
<tr>
<td>Observing</td>
<td>4.25 (1.5)</td>
<td>4.00 (1.4)</td>
</tr>
<tr>
<td>Validating</td>
<td>4.75 (0.7)</td>
<td>4.80 (0.6)</td>
</tr>
<tr>
<td>Participating/Conversing</td>
<td>5.00 (0.6)</td>
<td>4.80 (0.6)</td>
</tr>
<tr>
<td>Extending</td>
<td>5.00 (0.7)</td>
<td>4.60 (0.6)</td>
</tr>
<tr>
<td>Problem Initiating</td>
<td>4.40 (1.1)</td>
<td>4.30 (0.9)</td>
</tr>
<tr>
<td>Role Modeling</td>
<td>3.80 (0.7)</td>
<td>3.40 (0.7)</td>
</tr>
<tr>
<td>Instructing</td>
<td>3.60 (1.1)</td>
<td>3.50 (0.9)</td>
</tr>
<tr>
<td>Managing/Organizing/Providing</td>
<td>4.75 (0.7)</td>
<td>4.75 (0.7)</td>
</tr>
</tbody>
</table>

Note: Ratings were on a 5-point scale. *P < .05. **P < .01.
posttest was not statistically significant, $t(7) = 1.06, p > .05$. As shown in Table 1, although the mean scores for the control group increased from the pretest to the posttest for six of the eight strategies, the increases were not statistically significantly different. The control subjects’ scores on validating and participating/conversing showed a non-significant decline from pretest to posttest. Further, their scores for managing/organizing/providing strategy stayed the same from pretest to posttest.

In comparison, the experimental group’s overall mean score between the pretest and the posttest was statistically significant, $t(9) = 4.24, p < .01$. The experimental group’s scores indicated an increase in seven of the eight strategies and no change in one strategy. A statistically significant increase was found for effective use of extending, $t(9) = 3.42, p < .01$, and a near significant increase in the managing/organizing/providing strategy, $t(9) = 1.96, p < .10$. None of the other comparisons reached statistical significance.

**Question 2**

A related question, how do the experimental group’s self-ratings compare to the control group’s self-ratings? was explored. It was thought that the videotape training and the assisted performance with evaluation might affect student-teacher assistants self-ratings. Also of interest was how student-teacher assistant’s self-ratings would compare with trained rater’s ratings?
Student teacher assistants self-rated their performance of eight "bridging strategies" on pretest and posttest videotapes of their interactions with children. A summary of the means, standard deviations, \( t \)-test values and \( F \) ratio values using the self-ratings is provided in Table 2.

None of the series of 2 x 2, ANOVAs that were conducted on the student-teacher assistant’s self-ratings of the eight teacher behaviors were significant (see Table 2). Consistent with findings for raters, the 2 x 2, ANOVA that was conducted on the student-teacher assistants’ self-ratings of the overall mean score of the eight teacher behaviors using group (control vs. experimental) and time (pretest vs posttest) was not statistically significant, \( F (1, 16) = .05, p > .05 \). The \( t \)-tests comparing the control group’s self-rating overall mean was statistically significant, \( t(7) = 3.05, p < .01 \). As shown in Table 2, \( t \)-tests results conducted within the control group comparing pretest with posttest self-ratings revealed an increase on each of the eight "bridging-strategies". Mean differences reaching statistical significance were extending, \( t (7) = 3.86, p < .01 \); validating, \( t (7) = 2.50, p < .10 \); and participating/conversing, \( t (7) = 2.05, p < .10 \).

The \( t \)-test comparing the experimental group’s self-rating of the overall mean score of the eight teacher behaviors using group (control vs. experimental) and time (pretest vs posttest) approached significance, \( t(9) = 2.10, p < .10 \). Table 2 provides \( t \)-tests results conducted within the experimental group comparing the pretest with the posttest self-ratings. It shows that the experimental group’s self-ratings of seven of
### Table 2
#### Self-Rating Scores For "Bridging Strategies": Means, Standard Deviations, T-Tests and Two-Way Anovas

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th>Experimental (N = 10)</th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
</tr>
<tr>
<td>Observing</td>
<td>3.50</td>
<td>4.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(1.4)</td>
<td>(1.8)</td>
<td>(1.4)</td>
</tr>
<tr>
<td>Validating</td>
<td>3.50</td>
<td>4.25</td>
<td>2.50*</td>
</tr>
<tr>
<td></td>
<td>(1.4)</td>
<td>(1.0)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Participating/Conversing</td>
<td>3.75</td>
<td>4.50</td>
<td>2.05*</td>
</tr>
<tr>
<td></td>
<td>(1.0)</td>
<td>(0.9)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Extending</td>
<td>2.25</td>
<td>4.00</td>
<td>3.86**</td>
</tr>
<tr>
<td></td>
<td>(1.0)</td>
<td>(1.1)</td>
<td>(1.3)</td>
</tr>
<tr>
<td>Problem Initiating</td>
<td>2.71</td>
<td>3.28</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(1.4)</td>
<td>(1.4)</td>
<td>(1.5)</td>
</tr>
<tr>
<td>Role Modeling</td>
<td>3.00</td>
<td>3.40</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>(1.4)</td>
<td>(1.7)</td>
<td>(2.2)</td>
</tr>
<tr>
<td>Instructing</td>
<td>2.20</td>
<td>2.60</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>(1.1)</td>
<td>(1.7)</td>
<td>(2.2)</td>
</tr>
<tr>
<td>Managing/Organizing/Providing</td>
<td>3.75</td>
<td>4.00</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>(1.5)</td>
<td>(1.1)</td>
<td>(1.3)</td>
</tr>
<tr>
<td>Average of &quot;Bridging Strategies&quot;</td>
<td>3.11</td>
<td>3.84</td>
<td>3.05*</td>
</tr>
<tr>
<td></td>
<td>(0.7)</td>
<td>(0.9)</td>
<td>(0.7)</td>
</tr>
</tbody>
</table>

**Note.** Self-rating was on a 5-point scale.

* near significance, \( p < .10 \). \(^a\) \( p < .05 \). \(^{**}\) \( p < .01 \).
the eight teacher behaviors increased from the pretest to the posttest. Self-ratings of problem initiating, $t(9) = 2.71, p < .01$; role modeling, $t = 2.31, p < .01$; and managing/organizing/providing, $t(9) = 2.45, p < .01$ were greater at the posttest than the pretest at levels that were significant.

A comparison between the raters ratings and the student-teacher assistants self-ratings revealed that the raters' ratings generally were higher than the student-teacher assistants' self-ratings. The raters overall mean scores were higher than the control group's self-rating scores on the pretest ($M = 4.24$, $SD = .35$); and posttest ($M = 4.47$, $SD = .36$). The raters' ratings were higher on all eight pretest scores and on seven of the posttest scores.

For the experimental group, the raters overall mean scores were higher than the student-teacher assistants' self-ratings on both the pretest ($M = 4.09$, $SD = .36$); and posttest ($M = 4.71$, $SD = .25$). The raters' ratings were higher than the experimental group's self ratings on seven of the eight strategies for the pretest and all eight of posttest strategies.

Based on findings discussed above, the experimental group's use of the BSRS as an evaluation tool of their videotaped interactions with children was more similar to trained raters.
Question 3

A third research question was, to what degree do student-teacher assistants perceive their effective use of the "bridging strategies" was influenced by a variety of contextual variables?

Student-teacher assistants were asked to use a 7-point scale to indicate the degree to which their effective use of the "bridging strategies" was influenced by a variety of contextual variables which had been identified as influential in previous research (e.g., Copeland, 1977; Verloop, 1984; Glissman, Pugh, Dowden, & Hutchins, 1988). The variables were: (a) how comfortable they were in using a particular "bridging strategy", (b) how clear the concept or definition of the "bridging strategy" was to them, (c) how simple the "bridging strategy" was to use, (d) had they observed their head teacher modeling the "bridging strategy", (e) how well did the "bridging strategy" fit with their personal values, (f) how well did the "bridging strategy" fit with their understanding of developmentally appropriate practices, and (g) was the "bridging strategy" usable and practical.

The questionnaire was completed by the student-teacher assistants immediately after they had self-rated their pretest and posttest videotaped planned activities. To evaluate mean differences in the sample, a series 2 x 2, ANOVA's were conducted on student-teacher assistants' ratings of the seven contextual variables using group (experimental vs. control) and time (pretest vs. posttest) as factors. A shown in Table 3, comfort was significant, $F (1,16) = 4.32, p < .05$; and clarity approached
Table 3
Self-Rating Overall Mean For "Bridging Strategies": Means, Standard Deviations, T-Tests, and Two-Way Anovas

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th>Experimental (N = 10)</th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
</tr>
<tr>
<td>Comfort</td>
<td>4.68</td>
<td>4.91</td>
<td>0.62</td>
</tr>
<tr>
<td>Clarity</td>
<td>5.06</td>
<td>5.22</td>
<td>0.72</td>
</tr>
<tr>
<td>Simple to use</td>
<td>4.34</td>
<td>5.56</td>
<td>3.21*</td>
</tr>
<tr>
<td>Teacher models</td>
<td>6.31</td>
<td>6.50</td>
<td>1.34</td>
</tr>
<tr>
<td>Personal values</td>
<td>6.16</td>
<td>6.50</td>
<td>1.13</td>
</tr>
<tr>
<td>Fits with DAP</td>
<td>6.44</td>
<td>6.62</td>
<td>1.53</td>
</tr>
<tr>
<td>Practical to use</td>
<td>5.84</td>
<td>6.12</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Note. Self-ratings of statements on questionnaire were on a 7-point scale.
*p < .10. *p < .05
significance, \( F (1, 6) = 3.96, p < .10 \). None of the other contextual variables reached significance.

Additional results from the series of 2 x 2, ANOVA's, conducted on student-teacher assistants' ratings of the seven contextual variables using group (experimental vs. control) and time (pretest vs. posttest) as factors are presented in Tables 4 through 11.

Observing

Table 4 presents summary statistics for the seven contextual variables related to the "bridging strategy" of observing. A significant group difference with regard to perceived comfort in using observing teacher behavior, \( F (1,16) = 5.22, p < .05 \), as shown in Table 4. The posttest mean for the control group was 4.50 whereas the mean for the experimental group was 6.40. None of the other between group comparisons were significant.

The t-tests comparing pretest with posttest ratings for the control group's ratings revealed that the ratings of comfort with regard to observing teacher behavior significantly decreased between the pretest and posttest, \( t (7) = -2.65, p < .05 \). Ratings on four variables decreased, increased on one, and one stayed the same between the pretest and posttest, at levels that were not significant. In addition, the control groups' ratings across times ranged from a low of 4.50 to a high of 6.75 indicating moderate to high influence.

82
Table 4

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th>Experimental (N = 10)</th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
</tr>
<tr>
<td>Comfort</td>
<td>5.50</td>
<td>4.50</td>
<td>-2.65*</td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(2.1)</td>
<td>(1.1)</td>
</tr>
<tr>
<td>Clarity</td>
<td>5.50</td>
<td>5.00</td>
<td>-1.00</td>
</tr>
<tr>
<td></td>
<td>(1.4)</td>
<td>(1.8)</td>
<td>(1.4)</td>
</tr>
<tr>
<td>Simple to use</td>
<td>5.00</td>
<td>5.75</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(1.8)</td>
<td>(2.4)</td>
</tr>
<tr>
<td>Teacher models</td>
<td>6.75</td>
<td>6.50</td>
<td>-1.00</td>
</tr>
<tr>
<td></td>
<td>(0.7)</td>
<td>(0.9)</td>
<td>(0.7)</td>
</tr>
<tr>
<td>Personal values</td>
<td>6.75</td>
<td>6.25</td>
<td>-1.53</td>
</tr>
<tr>
<td></td>
<td>(0.7)</td>
<td>(1.5)</td>
<td>(0.9)</td>
</tr>
<tr>
<td>Fits with DAP</td>
<td>6.50</td>
<td>6.50</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(0.9)</td>
<td>(1.4)</td>
<td>(1.1)</td>
</tr>
<tr>
<td>Practical to use</td>
<td>6.50</td>
<td>6.00</td>
<td>-1.53</td>
</tr>
<tr>
<td></td>
<td>(0.9)</td>
<td>(1.5)</td>
<td>(0.9)</td>
</tr>
</tbody>
</table>

Note. Self-rating of statements on questionnaire was on a 7-point scale.

*p < .05
T-test revealed that none of the experimental group's changes were significant.

Ratings on five of the variables increased, and two stayed the same between the pretest and the posttest. Their ratings ranged from a low of 5.40 to a high of 6.80 indicating moderate to high influence.

Validating

Summarized statistics for the seven contextual variables related to the "bridging strategy" of validating are shown in Table 5. One of the series of 2 x 2, ANOVA's was significant. There was a significant difference with regard to perceived comfort in using validating teacher behavior, $F(1,16) = 5.17, p < .05$. None of the other group comparisons were significant. Table 5 shows that the posttest mean for the control group was 5.50, whereas the mean for the experimental group was 6.40.

The t-tests conducted to compare the control group's pretest with posttest ratings revealed that the ratings of simple to use with regard to observing teacher behavior significantly increased between the pretest and posttest, $t(7) = 2.38, p < .05$. Ratings on three other variables increased, one decreased, and two stayed the same between the pretest and posttest, at levels that were not significant. The control groups' ratings ranged from a low of 5.00 to a high of 7.00 indicating moderate to high influence.
Table 5

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th></th>
<th></th>
<th>Experimental (N = 10)</th>
<th></th>
<th></th>
<th></th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Comfort</td>
<td>5.75 (1.5)</td>
<td>5.50 (1.5)</td>
<td>-0.55</td>
<td>5.40 (0.8)</td>
<td>6.40 (1.0)</td>
<td>3.00**</td>
<td>5.17*</td>
<td></td>
</tr>
<tr>
<td>Clarity</td>
<td>5.50 (1.4)</td>
<td>5.75 (1.0)</td>
<td>0.55</td>
<td>5.40 (1.3)</td>
<td>6.40 (1.0)</td>
<td>3.00**</td>
<td>1.86</td>
<td></td>
</tr>
<tr>
<td>Simple to use</td>
<td>5.00 (1.8)</td>
<td>6.25 (1.0)</td>
<td>2.38*</td>
<td>6.00 (1.4)</td>
<td>6.20 (1.4)</td>
<td>0.43</td>
<td>2.23</td>
<td></td>
</tr>
<tr>
<td>Teacher models</td>
<td>6.75 (0.7)</td>
<td>7.00 (0.0)</td>
<td>1.00</td>
<td>6.20 (1.0)</td>
<td>6.40 (1.0)</td>
<td>1.00</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>Personal values</td>
<td>6.75 (0.7)</td>
<td>6.75 (0.7)</td>
<td>0.00</td>
<td>6.60 (0.8)</td>
<td>6.80 (0.6)</td>
<td>1.00</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>Fits with DAP</td>
<td>6.50 (0.9)</td>
<td>6.75 (0.7)</td>
<td>0.55</td>
<td>6.60 (0.8)</td>
<td>6.80 (0.6)</td>
<td>1.00</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Practical to use</td>
<td>6.50 (0.9)</td>
<td>6.50 (0.9)</td>
<td>0.00</td>
<td>6.60 (0.8)</td>
<td>6.80 (0.6)</td>
<td>1.00</td>
<td>0.25</td>
<td></td>
</tr>
</tbody>
</table>

Note. Self-ratings of statements on questionnaire were on a 7-point scale.
**p < .01
Two of the experimental group's changes were significant. Ratings of comfort and clarity were greater at the posttest than the pretest at the same level, \( t(9) = 3.00, p < .05 \). Although ratings of all the other variables increased between the pretest and posttest, none reached a level that was significant. The experimental groups' ratings ranged from a low of 5.40 to a high of 6.80 indicating moderate to high influence.

**Participating/Conversing**

Summary statistics for the seven contextual variables as they relate to the "bridging strategy" of participating/conversing are shown in Table 6. None of the series of 2 x 2, ANOVA's were significant, but ratings of simple to use was at a level that approached significance, \( F(1, 16) = 4.10 = p < .10 \). As shown in Table 6, the posttest mean for the control group was 6.00 whereas the mean for the experimental was 5.60.

T-tests conducted to compare the control group's pretest with posttest ratings revealed that the ratings of simple to use with regard to participating/conversing teacher behavior significantly increased between the pretest and posttest, \( t(7) = 3.42, p < .01 \). Ratings on four other variables increased, and two stayed the same between the pretest and posttest, at levels that were not significant. The control groups' ratings ranged from a low of 4.75 to a high of 7.00 indicating moderate to high influence. Four of the experimental group's ratings increased, and three stayed the same between the pretest and posttest at levels that were not significant.
Table 6

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th>Experimental (N = 10)</th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
</tr>
<tr>
<td>Comfort</td>
<td>5.25 (1.3)</td>
<td>5.75 (1.5)</td>
<td>1.00</td>
</tr>
<tr>
<td>Clarity</td>
<td>5.50 (0.9)</td>
<td>6.00 (1.1)</td>
<td>1.53</td>
</tr>
<tr>
<td>Simple to use</td>
<td>4.75 (1.3)</td>
<td>6.00 (1.5)</td>
<td>3.42**</td>
</tr>
<tr>
<td>Teacher models</td>
<td>6.50 (0.9)</td>
<td>7.00 (0.0)</td>
<td>1.53</td>
</tr>
<tr>
<td>Personal values</td>
<td>6.50 (0.9)</td>
<td>7.00 (0.0)</td>
<td>1.53</td>
</tr>
<tr>
<td>Fits with DAP</td>
<td>7.00 (0.0)</td>
<td>7.00 (0.0)</td>
<td>0.00</td>
</tr>
<tr>
<td>Practical to use</td>
<td>6.75 (0.7)</td>
<td>6.75 (1.1)</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Note. Self-ratings of statements on questionnaire were on a 7-point scale.

* near significance, p < .10.    "" p < .01.
The experimental group's ratings ranged from a low of 5.40 to a high of 6.80 indicating moderate to high influence.

**Extending**

Table 7 summarizes the statistics for the seven contextual variables as they relate to the "bridging strategy" of extending. None of the series of 2 x 2, ANOVA's were significant.

The t-tests conducted to compare the control group's pretest with posttest ratings revealed three ratings with regard to extending teacher behavior significantly increased between the pretest and posttest: comfort, t(7) = 7.00, p < .001; clarity, t(7) = 2.65, p < .05; and simplicity, t(7) = 3.81, p < .01, respectively. For the other variables ratings of three increased and one stayed the same between the pretest and posttest at levels that were not significant. The control groups' ratings ranged from a low of 3.00 to a high of 7.00 indicating moderate to high influence.

In comparison, six of the experimental group's ratings increased, and one stayed the same between the pretest and posttest at levels that were not significant. Experimental group's ratings ranged from a low of 3.80 to a high of 6.80 indicating moderate to high influence.
Table 7

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th>Experimental (N = 10)</th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
</tr>
<tr>
<td>Comfort</td>
<td>3.00</td>
<td>4.75</td>
<td>7.00***</td>
</tr>
<tr>
<td></td>
<td>(1.5)</td>
<td>(2.0)</td>
<td>(0.7)</td>
</tr>
<tr>
<td>Clarity</td>
<td>4.00</td>
<td>5.00</td>
<td>2.65*</td>
</tr>
<tr>
<td></td>
<td>(2.1)</td>
<td>(1.8)</td>
<td>(1.1)</td>
</tr>
<tr>
<td>Simple to use</td>
<td>3.25</td>
<td>5.50</td>
<td>3.81**</td>
</tr>
<tr>
<td></td>
<td>(1.3)</td>
<td>(1.8)</td>
<td>(1.7)</td>
</tr>
<tr>
<td>Teacher models</td>
<td>6.50</td>
<td>6.75</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(0.9)</td>
<td>(0.7)</td>
<td>(0.7)</td>
</tr>
<tr>
<td>Personal values</td>
<td>6.50</td>
<td>6.75</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>(0.9)</td>
<td>(0.7)</td>
<td>(1.3)</td>
</tr>
<tr>
<td>Fits with DAP</td>
<td>7.00</td>
<td>7.00</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(0.0)</td>
<td>(0.0)</td>
<td>(0.0)</td>
</tr>
<tr>
<td>Practical to use</td>
<td>6.25</td>
<td>6.50</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>(1.0)</td>
<td>(0.9)</td>
<td>(1.3)</td>
</tr>
</tbody>
</table>

Note. Self-ratings of statements on questionnaire were on a 7-point scale.
*p < .05. **p < .01. ***p < .00.
**Problem Initiating**

Table 8 shows a summary of the statistics for the seven contextual variables as related to the "bridging strategy" of problem initiating. None of the series of $2 \times 2$, ANOVA's were significant.

T-tests conducted to compare the control group's pretest with posttest ratings revealed that the ratings of comfort with regard to problem initiating teacher behavior significantly increased between the pretest and posttest, $t(7) = 2.65$, $p < .001$. Ratings on three variables increased, one decreased, and two stayed the same between the pretest and posttest, at levels that were not significant. The control group's ratings ranged from a low of 3.50 to a high of 6.75 indicating moderate to high influence.

Two variables significantly increased in the experimental group; comfort was significant; $t(9) = 4.00$, $p < .001$; and clarity, $t(9) = 2.69$, $p < .05$. Simple to use and modeled by head teacher were greater at the posttest than pretest at levels that approached significance, $t(9) = 1.86$, $p < .10$; and $t(9) = 1.86$, $p < .10$, respectively. The ratings for the three other variables increased, but were not significant. The experimental groups' ratings ranged from a low of 3.60 to a high of 6.80 indicating moderate to high influence.
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th>Experimental (N = 10)</th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
</tr>
<tr>
<td>Comfort</td>
<td>3.75</td>
<td>4.75</td>
<td>2.65*</td>
</tr>
<tr>
<td></td>
<td>(1.5)</td>
<td>(2.2)</td>
<td>(1.1)</td>
</tr>
<tr>
<td>Clarity</td>
<td>4.50</td>
<td>4.50</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(2.1)</td>
<td>(2.1)</td>
<td>(1.1)</td>
</tr>
<tr>
<td>Simple to use</td>
<td>3.50</td>
<td>4.75</td>
<td>1.36</td>
</tr>
<tr>
<td></td>
<td>(1.4)</td>
<td>(2.0)</td>
<td>(2.6)</td>
</tr>
<tr>
<td>Teacher models</td>
<td>6.50</td>
<td>6.50</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(0.9)</td>
<td>(0.9)</td>
<td>(1.1)</td>
</tr>
<tr>
<td>Personal values</td>
<td>6.25</td>
<td>6.75</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(1.0)</td>
<td>(1.7)</td>
<td>(1.4)</td>
</tr>
<tr>
<td>Fits with DAP</td>
<td>6.75</td>
<td>6.50</td>
<td>-1.00</td>
</tr>
<tr>
<td></td>
<td>(0.7)</td>
<td>(0.9)</td>
<td>(0.7)</td>
</tr>
<tr>
<td>Practical to use</td>
<td>6.00</td>
<td>6.25</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(1.1)</td>
<td>(1.0)</td>
<td>(0.7)</td>
</tr>
</tbody>
</table>

* near significance, p < .10.  **p < .05.  ***p < .001.

Note. Self-ratings of statements on questionnaire were on a 7-point scale.
Role Modeling

Table 9 summarizes the statistics for the seven contextual variables as reported to influence the effective use of the role modeling "bridging strategy". There was a significant difference with regard to perceived clarity in using role modeling teacher behavior, $F(1, 16) = 5.42, p < .05$. As shown in Table 9, the posttest mean for the control group was 5.00, whereas the mean for the experimental group was 5.80. One other between group comparison, comfort, approached significance, $F(1, 16) = 4.03, p < .10$. The posttest mean for the control group was 4.50 as compared to 6.20 for the experimental group. None of the other group comparisons were significant.

None of the $t$-tests conducted to test within control group comparisons of pretest with posttest ratings were significant. Ratings of four of the variables increased, and three decreased between the pretest and posttest. The control group's ratings ranged from a low of 4.25 to a high of 6.75 indicating moderate to high influence.

Increased ratings of four of the experimental group changes were significant. Ratings of comfort, clarity, simple to use, and practical to use were greater at the posttest than the pretest at levels that were significant, $t(9) = 2.25, p < .05$; $t(9) = 5.01, p < .001$; $t(9) = 3.28, p < .01$; and $t(9) = 3.28, p < .01$, respectively. Two of the other variables increased and one stayed the same between the pretest and the posttest.
Table 9

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th>Experimental (N = 10)</th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
</tr>
<tr>
<td>Comfort</td>
<td>4.75 (1.3)</td>
<td>4.50 (1.4)</td>
<td>-.55</td>
</tr>
<tr>
<td>Clarity</td>
<td>5.00 (1.5)</td>
<td>4.75 (2.0)</td>
<td>-.28</td>
</tr>
<tr>
<td>Simple to use</td>
<td>4.24 (1.5)</td>
<td>5.00 (1.5)</td>
<td>1.43</td>
</tr>
<tr>
<td>Teacher models</td>
<td>6.50 (0.9)</td>
<td>6.00 (1.1)</td>
<td>-1.53</td>
</tr>
<tr>
<td>Personal values</td>
<td>6.00 (1.5)</td>
<td>6.50 (0.9)</td>
<td>1.00</td>
</tr>
<tr>
<td>Fits with DAP</td>
<td>6.25 (1.0)</td>
<td>6.75 (0.7)</td>
<td>1.53</td>
</tr>
<tr>
<td>Practical to use</td>
<td>5.00 (1.8)</td>
<td>5.50 (1.8)</td>
<td>1.53</td>
</tr>
</tbody>
</table>

Note. Self-ratings of statements on questionnaire were on a 7-point scale.

* near significance, p < .10.    *p < .05.    **p < .01.    ***p < .001.
The experimental group's ratings ranged from a low of 4.40 to a high of 6.80 indicating moderate to high influence.

**Instructing**

Table 10 shows a summary of the statistics for the seven contextual variables as related to the "bridging strategy" of instructing. None of the series of 2 x 2, ANOVA’s were significant.

T-tests conducted to compare the control group's pretest with posttest ratings revealed that the ratings of *simple to use* with regard to instructing teacher behavior was greater at the posttest than the pretest at a level that approached significance, \( t(7) = 2.20, p < .10 \). Ratings on five of the other variables increased, and one stayed the same between the pretest and posttest at levels that were not significant. The control group's ratings ranged from a low of 3.50 to a high of 5.25 indicating moderate to high influence.

In comparison, three of the experimental group’s ratings significantly increased, *comfort*, \( t(9) = 3.21, p < .01 \); *clarity*, \( t(9) = 2.24, p < .05 \); and *practicality*, \( t(9) = 3.28, p < .01 \). Three of the other variables increased, two decreased between the pretest and posttest at levels that were not significant. Experimental group’s ratings ranged from a low of 4.20 to a high of 6.20 indicating moderate to high influence.
Table 10

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th>Experimental (N = 10)</th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
</tr>
<tr>
<td>Comfort</td>
<td>3.75</td>
<td>3.75</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(2.1)</td>
<td>(3.0)</td>
</tr>
<tr>
<td>Clarity</td>
<td>4.75</td>
<td>5.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(1.7)</td>
<td>(1.5)</td>
<td>(0.7)</td>
</tr>
<tr>
<td>Simple to use</td>
<td>3.50</td>
<td>5.25</td>
<td>2.20*</td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(1.7)</td>
<td>(2.2)</td>
</tr>
<tr>
<td>Teacher models</td>
<td>5.00</td>
<td>5.50</td>
<td>1.53</td>
</tr>
<tr>
<td></td>
<td>(2.1)</td>
<td>(2.1)</td>
<td>(0.9)</td>
</tr>
<tr>
<td>Personal values</td>
<td>4.75</td>
<td>5.50</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>(2.0)</td>
<td>(2.1)</td>
<td>(2.4)</td>
</tr>
<tr>
<td>Fits with DAP</td>
<td>5.25</td>
<td>5.50</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>(2.2)</td>
<td>(2.1)</td>
<td>(1.3)</td>
</tr>
<tr>
<td>Practical to use</td>
<td>4.25</td>
<td>4.75</td>
<td>0.48</td>
</tr>
<tr>
<td></td>
<td>(2.6)</td>
<td>(2.2)</td>
<td>(3.0)</td>
</tr>
</tbody>
</table>

Note. Self-ratings of statements on questionnaire were on a 7-point scale.

* near significance, p < .10.    *p < .05.    **p < .01.
Managing/Organizing/Providing

Summary statistics for the seven contextual variables as they relate to the "bridging strategy" of managing/organizing/providing are shown in Table 11. There was a significant difference with regard to perceived clarity in using managing/organizing/providing teacher behavior, $F (1, 16) = 7.11, p < .01$. Table 10 shows that posttest mean for the control group was 5.75 whereas the mean for the experimental group was 6.00. None of the other between group comparisons were significant.

Results of the $t$-tests conducted to compare pretest with posttest ratings of the control group were not significant. Ratings of four of the variables increased, three stayed the same between the pretest and posttest. The control group's ratings ranged from a low of 4.75 to a high of 6.75 indicating moderate to high influence.

Three of the experimental group changes were significant. Ratings of comfort, clarity, and simple to use were greater at the posttest than the pretest at levels that were significant, $t (9) = 3.00, p < .01$; $t (9) = 3.00, p < .01$; and $t (9) = 3.00, p < .01$, respectively. Of the remaining variables, two variables increased, and two stayed the same between the pretest and posttest, at levels that were not significant. The experimental group's ratings ranged from a low of 4.80 to a high of 6.80 indicating moderate to high influence.
Table 11

Self-Rating Scores For Managing/Organizing/Providing "Bridging Strategy": Means, Standard Deviations, T-Tests, and Two-Way Anovas

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Control (N = 8)</th>
<th>Experimental (N = 10)</th>
<th>Two-Way Anova</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>t Value</td>
</tr>
<tr>
<td>Comfort</td>
<td>5.75</td>
<td>5.75</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(1.5)</td>
<td>(2.1)</td>
</tr>
<tr>
<td>Clarity</td>
<td>5.75</td>
<td>5.75</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(1.5)</td>
<td>(1.5)</td>
<td>(0.0)</td>
</tr>
<tr>
<td>Simple to use</td>
<td>4.75</td>
<td>6.00</td>
<td>1.67</td>
</tr>
<tr>
<td></td>
<td>(2.0)</td>
<td>(1.5)</td>
<td>(2.1)</td>
</tr>
<tr>
<td>Teacher models</td>
<td>6.75</td>
<td>6.75</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(0.7)</td>
<td>(0.7)</td>
<td>(0.0)</td>
</tr>
<tr>
<td>Personal values</td>
<td>6.25</td>
<td>6.75</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(1.5)</td>
<td>(0.7)</td>
<td>(1.4)</td>
</tr>
<tr>
<td>Fits with DAP</td>
<td>6.75</td>
<td>7.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(0.7)</td>
<td>(0.0)</td>
<td>(0.7)</td>
</tr>
<tr>
<td>Practical to use</td>
<td>6.25</td>
<td>6.75</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(1.5)</td>
<td>(0.7)</td>
<td>(1.4)</td>
</tr>
</tbody>
</table>

Note. Self-ratings of statements on questionnaire were on a 7-point scale.

*p < .05. **p < .01.
Although no clear pattern emerged between the control and the experimental group's ratings, there was some evidence, though weak, that the experimental group were more aware of contextual variables. The findings with regard to the difference between the control and experimental group were consistent with the researchers' expectations that the experimental student-teacher assistants would be more aware of the contextual variables.

Regardless of group the general finding of significant influence of the three contextual variables is consistent with findings of studies that established the influence of variable on the effectiveness of training for elementary and high school teachers.

**Question 4**

The last research question was a two part question: (a) which "bridging strategies" were most/least used as determined by raters ratings and student-teacher assistants self-ratings, and (b) which "bridging strategies" were most/least effectively used as determined by raters ratings and student-teacher assistants self-ratings?.

The frequency of posttest scores of student teacher assistant's self-ratings (see Table 12) and rater's ratings (see Table 13) were used to determine strategies that were most/least used. As indicated by student-teacher assistants self-ratings problem initiating, role modeling and instructing emerged as the least used teacher behaviors, whereas observing, validating, participating conversing, extending, managing/organizing/providing were the most used teacher behaviors.
Table 12

Frequency of Student-teacher Assistants' Overall Pretest and Posttest Self-Ratings For Each "Bridging Strategy"

<table>
<thead>
<tr>
<th>&quot;Bridging Strategies&quot;</th>
<th>Control Group</th>
<th>Experimental Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N = 8)</td>
<td>(N = 8)</td>
</tr>
<tr>
<td>Pretest Ratings</td>
<td>Posttest Ratings</td>
<td>Pretest Ratings</td>
</tr>
<tr>
<td>0 1 3 5</td>
<td>0 1 3 5</td>
<td>0 1 3 5</td>
</tr>
<tr>
<td>Observing</td>
<td>1 4 3</td>
<td>2 6</td>
</tr>
<tr>
<td>Validating</td>
<td>1 4 3</td>
<td>3 5</td>
</tr>
<tr>
<td>Participating/Conversing</td>
<td>5 3</td>
<td>2 6</td>
</tr>
<tr>
<td>Extending</td>
<td>3 5</td>
<td>4 4</td>
</tr>
<tr>
<td>Problem initiating</td>
<td>2 5 1</td>
<td>1 1 4 2</td>
</tr>
<tr>
<td>Role modeling</td>
<td>1 2 4 1</td>
<td>2 1 3 2</td>
</tr>
<tr>
<td>Instructing</td>
<td>2 3 3</td>
<td>1 2 3 2</td>
</tr>
<tr>
<td>Managing/Organizing/Providing</td>
<td>1 3 4</td>
<td>4 4</td>
</tr>
</tbody>
</table>

Note. Self-ratings were on a 5-point scale.
Table 13

Frequency of Raters' Overall Pretest and Posttest For Each "Bridging Strategy"

<table>
<thead>
<tr>
<th>&quot;Bridging Strategies&quot;</th>
<th>Control Group (N = 8)</th>
<th>Experimental Group (N = 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest Ratings</td>
<td>Posttest Ratings</td>
</tr>
<tr>
<td></td>
<td>0 1 3 5</td>
<td>0 1 3 5</td>
</tr>
<tr>
<td>Observing</td>
<td>- 1 1 6</td>
<td>1 7</td>
</tr>
<tr>
<td>Validating</td>
<td>8</td>
<td>1 7</td>
</tr>
<tr>
<td>Participating/Conversing</td>
<td>8</td>
<td>1 7</td>
</tr>
<tr>
<td>Extending</td>
<td>3 4 1</td>
<td>1 3 4</td>
</tr>
<tr>
<td>Problem initiating</td>
<td>3 1 1 3</td>
<td>3 5</td>
</tr>
<tr>
<td>Role modeling</td>
<td>2 1 2 3</td>
<td>3 6</td>
</tr>
<tr>
<td>Instructing</td>
<td>2 1 3 2</td>
<td>1 4 3</td>
</tr>
<tr>
<td>Managing/Organizing/Providing</td>
<td>1 7</td>
<td>1 7</td>
</tr>
</tbody>
</table>

Note. Raters' ratings were on a 5-point scale
The rater's ratings across groups and times revealed that the two teacher behaviors least used were extending and instructing were least used. Observing, validating, participating, conversing, problem initiating, role modeling and managing/organizing/providing were the most used strategies.

Examination of the distribution of posttest scores of student teacher assistants self-rating of their effective use of the "bridging strategies" and rater's ratings of the "bridging strategies" were used to answer the question regarding the most/least effectively used strategy.

The control group's posttest self-ratings for problem initiating, role modeling, and instructing were most widely distributed between 0 = not used at all, and 5 = fully effectively used. Thus, for the control group, problem initiating, role modeling, and instructing were considered to be the least effectively used strategy in comparison to the other strategies.

In comparison, the experimental group's ratings of role modeling and instructing were most widely distributed whereas the others were less widely distributed.

Table 13 shows that rater's posttest ratings of extending and instructing were the most widely distributed for both the experimental and control groups and as such were considered the least effectively used strategies. The result also revealed that extending, problem initiating, role modeling and instruction were the least effectively used strategies while observing, validating, participating/conversing,
managing/organizing/providing were the most effectively used strategies.

Qualitative Results

Discussion With Adjunct Instructor and GTA

In an attempt to have a sense of what was covered in the curriculum class with regard to the eight "bridging strategies", the researcher met with the instructor and her graduate assistant. During the meeting, the instructor and her assistant were asked to rate on a 5-point scale the degree to which they felt the eight "bridging strategies" were covered in the classroom. Their ratings indicated that six of the "bridging strategies" (i.e., observing, validating, participating/conversing, extending, problem initiating, and managing/organizing/providing) were fully covered, while role modeling and instructing "bridging strategies" were only partially covered.

In talking with the instructor and her assistant, they agreed they fully covered six of the eight "bridging strategies”. However, they disagreed on the degree to which they felt problem initiating and instructing were covered. The graduate assistant seemed to think that these two "bridging strategies" were also fully covered, whereas the instructor was not sure that these two "bridging strategies" (especially instructing) were covered at all.

When asked to explain in detail how the "instructing" strategy was covered, the graduate assistant gave examples that did not fit the definition of instructing used in this study. The instructor’s articulation of instructing was generally in line with the definition used in this study. There were instances where the instructor’s
examples were similar to the graduate assistant's, but she would observe "...that is still not instructing... how did we address how to then instruct (pause)". Then, the graduate assistant would immediately attempt an example (usually did not fit the definition used in the study) and the instructor would interject "I think that could be just part of it. I think what Martha would really like to know is...".

Further probing by the researcher resulted in the instructor's articulation of instructing, but she still observed that they did not cover instructing in the class. This was captured in her observation "I don't think we talked about instructing. Sorry we just didn't do that". Then, the graduate assistant observed "we don't encourage ...?".

Written Evaluations of Activity Plans and Implementation

The student-teacher assistants were given written feedback from their instructor before and after implementation of an activity. Examination of these comments on the student-teacher assistants activity plans revealed that the instructor and her assistant did address some of the strategies. The following are some quotes or comments extracted from student-teacher assistant's evaluated activity plans that are indicative of the attention that was given to the "bridging strategies": "...how will you invite them to explore the environment instead of only doing the book"; "...what types of questions will you use to stimulate interest, invite participation, sustain interest and extend activity?"; "...good recognition of children's interest"; "...what other ways could you stimulate interest while participating"; "...provide more props to encourage a wider range of experiences"; "...how will you sustain
interest in this activity, what props will you add to enrich/expand the activity?"; "...good idea to wait on the sequins and toys! Keeps the children engaged"; "...what can you predict will happen- how will you sustain their energies, extend the experience?"; "...What other items from the classroom might be interjected to enhance the fun/learning (get wild with your options-go with the unusual)!"; "...any ideas about how to sustain interest, get more kids interested?". "...I bet there would be some neat ways to extend this activity"; "...great questions that extends childrens' thinking"; "...how will you comment? what exactly will you say?"; "...how will you sustain their energies? extend the experience?"; "...think through some techniques for extending this activity"; "...can you think of creative ways to extend this activity?"; "...prepare more questions (open-ended) to ask the children as you play"; "...good extension"; "...make a list of comments/questions for your interactions with children"; "Great questions!"; "...I like the part about adding color after 10 minutes, what else can you add?"; "How will you comment--what exactly will you say?";
These are good ways to sustain interest and extend the activity..."; "...what types of open-ended questions and verbalizations could you use through out?": "What props will you add to enrich the activity?"; "...when you use your observations of play themes in planning an activity it is more likely to be successful....Good observations on your part"; "...too much might overwhelm children" etc. Most of the comments seem to fall under either the extending or managing/organizing/providing category of teacher behavior.
Informed by the discussion that transpired between the researcher, instructor and the graduate assistant; examination of the evaluation comments on student-teacher assistants' activity plans; and field note collected during assisted performance with evaluation sessions; the researcher is of the opinion that the student-teacher assistants were exposed to experiences that encouraged interactions that were in line with the "bridging strategies".

Field Notes Collected During Assisted Performance With Evaluation

During the assisted performance of evaluation, some students made comments that were in line with the fact the they were benefiting from the training experience and also left the impression that they were uneasy using some of the teaching strategies. For example, at the end of the session, a student-teacher assistant observed that she really enjoyed the discussions, and that her roommate was right about her impression that the session was worth while and concluded— "I had thought that two hours was too long but it did not seem like two hours at all". Another student-teacher assistant said "having gone through the training and watching myself has really helped me see instances when I should have used certain strategies.... I think I will try to use those strategies in my next implementation". Another student observed "I really need help with asking questions. I sometimes don't know what to ask the children". Then another student-teacher assistant observed "I sometimes feel like telling the children what I think they should know, but I want them to take control of their own learning". A control group student-teacher assistant observed
that "it really helps to watch oneself in video. You really see things that you would not have thought that you did when you were doing the activity...". The student-teacher assistants in the control group really wanted feedback after they viewed their videotapes. This was captured in a student-teacher assistants' observation "It would really be helpful if you let me know your impression of my interactions with the children".

The researchers' history of having worked with student-teacher assistants in the same capacity also provide basis for qualitative results. Regardless of whether they were control or experimental group student-teacher assistants, viewing the videotapes revealed that this cohort of student-teacher assistants was more aware of the managing/organizing/providing "bridging strategy" than the student-teacher assistants the researcher had worked with in the past. The student-teacher assistants anticipated children losing interest in the activity and made provision for that in their planning. For example it was not unusual for a student to include in their planning back-up props. The introduction of such props into the activity at different intervals was contingent on their judgment that childrens' interest needed to be captured or sustained. They seemed comfortable getting props that were not included in their original activity plan, off the shelf to add in the play activities. For example, a student-teacher assistant who was in the experimental group got the miniature people off the shelf and added them to reenergize childrens' interest (which she judged to be fading) in playing with bears and measuring scales. The extent to which this strategy
was covered in the class is captured in the instructor's observation that "... pull out of your pocket something that extends and holds the child's interest.... We talked about holding back bits and pieces of the activity and then slowly adding to the activity to keep the child's interest".
CHAPTER V

Discussion

The purpose of this study was fourfold. The first purpose was to further our understanding of the effect of videotape training and assisted performance with evaluation on student-teacher assistants’ effective use of "bridging strategies" within the interactionist framework. The second purpose was to identify variables that influenced student-teacher assistants’ effective use of the "bridging strategies". A third purpose was to explore the feasibility of using the Bridging Strategies Rating Scale (BSRS) as a feedback and evaluation tool for members of the child care and school community, and a fourth to identify which strategies were least/most used.

I general the results of this study were limited in part because of the need for the researcher to make several compromises between cost and rigor. One limitation was small sample size, and nature(voluntary) of the sample. The limitation of having a voluntary sample was made obvious by the situation that no student-teacher assistant took advantage of the training for the non-participants. Other limitations included the short duration of intervention and a focus on too many strategies. It may not have been realistic to expect subjects to maximally demonstrate eight strategies in one segment of interaction. Also, maximal use of one strategy may have resulted in less than maximal use of other strategies. Because of the inherent limitations associated with recalling information, it may have been possible that the meeting with the adjunct instructor and her teaching assistant at the end of the semester was not the
most effective way to elicit information regarding the classroom coverage of related teaching strategies and made it impossible to determine which strategy were covered during the short duration of the treatment. Scoring based on potential, not actual performance, may have resulted in inflation of the scores.

Discussion for Question 1

Results that student-teacher assistants who underwent videotape training on the eight "bridging strategies" and assisted performance with evaluation did not differ in their use of the "bridging strategies" from subjects who underwent less specific videotape training and non-assisted performance with evaluation. However, the experimental subjects showed generalized improvement with regard to their use of teacher behaviors across seven of the eight teacher behaviors. The experimental group consistently showed superior improvement with regard to six of the eight teacher behaviors. The finding that the experimental but not the control group's mean score difference across the eight strategies as judged by the raters increased over time provides further evidence of generalized improvement. With regard to specific teacher behaviors improvement in extending and managing/organizing/providing, reached levels of significance.

In addition to the general limitation already noted, the lack of strong support for the experimental treatment effect may have been due to the inherent difficulty in transferring effective teaching behaviors into practice.
The study has shed some light onto our understanding of how the student teacher assistants who underwent videotape training and assisted performance with evaluation compared with the student-teacher assistants who did not undergo such training. However, more needs to be done to accommodate the biases that were inherent in the study. Therefore, the following are recommendations for further study: (a) increase sample size, (b) vary the population, (c) focus on fewer strategies, (d) increase duration of intervention, (e) keep systematic anecdotal notes on classroom coverage of related strategies.

The control group student-teacher assistants’ progress in regard to five of the eight "bridging strategies" and can be explained by expected the fact that the FCD 4214 course is designed to foster certain interactions that are in line with the "bridging strategies". Evidence of this exposure was supported by the discussion that transpired during the researcher’s meeting with the adjunct instructor and her assistant. Additional support was evidenced in related comments on the student-teacher assistants’ evaluated activity plans. It appears that, by virtue of enrollment in FCD 4214 all the student-teacher assistant were exposed to experiences that were associated with at least six of the eight "bridging strategies". Also, it is likely that the videotape on developmentally appropriate practice that the control group subjects watched was not mutually exclusive from the "bridging strategies" the experimental subjects were trained in. Therefore, in light of strong test of treatment effects the results showing generalized improvement for the experimental group are encouraging.
Interestingly, validating and participating/conversing teacher behaviors declined in the rater’s posttest ratings of the control group. Possible reasons for the decline include: (a) lack or insufficient coverage specific to the two teacher behaviors, (b) assuming that the strategies were covered in class, time of coverage of strategies and time of data collection may have influenced the results, and (c) inherent difficulty to transfer theory into practice. Again, the limitation of retrospective account may have biased the results. It implies that these strategies may not have been covered to the extent that the instructor and her assistant perceived especially because the two strategies were among the strategies that the instructor and her assistant attested to have fully covered in class. Therefore, instructor’s and GTA’s perceptions of the extent of coverage may have been different than actual coverage.

The same recommendations for further studies that were suggested for the results related to the increased findings are suggested for the decreased scores too.

**Experimental Group**

In comparison to the control group, t-test analysis of rater’s pretest and posttest overall mean score of the experimental group did indicate significant differences. This finding is in line with the work of other investigators who have found that certain training experiences facilitate acquisition of specific teacher behaviors (Gliessman, Pugh, & Bielat’s, 1979).
Briefly, Gliessman, Pugh, and Bielat's (1979) utilized the "concept-base" training model, which emphasized definition, exemplification and active verbalization with regard to the teaching skills to be acquired.

Another perspective is based on the speculation that the provision of an opportunity to observe competent teachers and then analyze and discuss the observation is an effective means of assisting teachers in acquiring teacher behaviors. It has been argued that such experiences enable the student-teacher assistants to bridge the gap between theory and practice (Smith, 1985), because the live demonstration of teachers using the "bridging strategies" in the videos helped them to begin to think it really is possible to interact with children in similar ways (Duckworth, 1987).

A third view is based on the argument that assisted performance results in high level performance. Therefore, it may be appropriate to say that in addition to the videotape training component, the assisted performance with evaluation created the kind of scaffold that enabled the student-teachers to become more aware and effective in the use of the teaching strategies. For example Gallimore and Tharp (1992) documented the use of such "joint productive activity" as a medium for assisting performance among elementary school teachers.

A fourth view is represented by the Vygotskian perspective on the development of "scientific concepts" forms the basis of the fourth interpretation. To make a distinction between the "everyday concept" and "scientific concept", Vygotsky (1987) argued that mental function initially develops in unrecognized, inadequately
differentiated forms ("spontaneous concept"), after which it reaches a higher stage of it's development; the stage where the person becomes consciously aware of, and voluntarily in control of what they were being assisted with through a system of formal instruction ("scientific concept"). The "spontaneous concepts" and "scientific concepts" are mediated through the use of language. Therefore, assuming Vygotsky's notion of "scientific concept", the finding suggests that the videotape training and assisted performance with evaluation experiences erected a kind of scaffold that enabled them to become consciously aware of, and voluntarily in control of the knowledge of what they were being assisted with (specifically, effective use of "bridging strategies"). Furthermore, their being consciously aware of, and voluntarily in control of the "bridging strategies" manifested itself in their effective use of the strategies.

Fifth, the student-teacher assistants' own comments that the training process (especially the assisted performance with evaluation) helped them recognize missed opportunities when they could have maximized the use of certain strategies was an indication of the effect of their experiences. It was very common to hear a student say something like, "...having gone through the training and watching myself has really helped me see instances when I should have used certain strategies ... I think I will try to use those strategies in my next implementation". Thus, it would be safe to conclude that, through videotape training and assisted performance with evaluation, an attempt was made to move the student-teacher assistants' from spontaneous or not
"thought about" to the subject's awareness "think about" the "bridging strategies". In other words, the videotape training and assisted performance with evaluation gave the student-teacher assistants some kind of basis necessary to analyze their videotaped interactions with the children, thus, made them more aware of the need to maximize opportunities to use those "bridging strategies".

In this light, the findings that the subjects who underwent videotape training and assisted performance did demonstrate more effectiveness in their use of the "bridging strategies" than the subjects who did not were expected. The significant progress that the experimental group made with regard to their effective use of the eight "bridging strategies" may be associated with the fact that the videotape training and assisted performance with evaluation did have a positive effect. However, this interpretation must remain tentative because of the exploratory nature of the study.

The significant increase with regard to the extending teacher behavior may be associated with the fact that the coverage that the instructor and her assistant attested to may have been very complementary to the training experiences that the experimental students underwent. Given that the control group also indicated progress, there may be an indication that suggest training effort that is focussed on one strategy may be more effective.
Discussion for Question 2

The paired t-test for the control group and the experimental group revealed a significant and near significant difference between the pretest and posttest self-ratings, respectively. Specifically, the control group subjects had higher effectiveness scores in the posttest self-ratings of all eight teacher behaviors. Their posttest self-ratings of extending teacher behavior was statistically significant whereas self-ratings of validating and participating/conversing teacher behaviors were at levels that approached significance.

In comparison, the experimental group’s posttest self-ratings of those three teacher behaviors were lower and at levels that were not significant. However, the experimental group’s posttest self-ratings of the other five teacher behaviors were higher. Their ratings of problem initiating, role modeling, and managing/organizing/providing teacher behaviors were significant.

In comparison, the rater’s ratings of the control group’s pretest and posttest mean score of their use of the "bridging strategies" was not significant. Although the rater’s post-test ratings of validating teacher behavior was higher than the control group’s posttest self-rating, the difference between the pretest and posttest ratings indicated a non-significant decline. Also, the rater’s posttest ratings of participating/conversing teacher behavior, though not higher than control group’s posttest self-rating, indicated a non-significant decline. In addition to participating/conversing teacher behavior, the rater’s posttest ratings of observing and
extending were lower than the control group's posttest self-ratings. All the rater's posttest ratings of the other teacher behaviors were higher than the control group's posttest self-ratings.

In comparison, the rater's pretest and posttest mean scores for the experimental group was significant, whereas the experimental group's pretest and posttest mean score approached significance. All the rater's posttest ratings of the eight "bridging strategies" were higher than the experimental group's. The rater's ratings of extending and managing/organizing were significant, and at a level that approached significance, respectively.

Regardless of group, rater's rated the student-teacher assistants higher than they rated themselves. This could be due to the fact that the raters rating were more considerate of the fact that ratings were to be based potential level of development. The discrepancies between the control group's self-ratings and rater's ratings suggest that trained raters may have different perceptions of effectiveness with regard to the eight teacher behaviors than the untrained student-teacher assistant. These results imply that caution must be taken when the tool used for this study (BSRS) is given to non-trained student-teacher assistants to use for self-evaluation purposes. Otherwise, the control group's improved posttest self-ratings in comparison to the experimental group's posttest self-ratings suggest that the classroom coverage of related teacher behaviors as was indicated by the course instructor and her assistant did effect some progress. Another possible support could be the evidence contained in the student-
teacher assistants’ evaluated activity plans.

Based on the fact that the experimental group student-teacher assistants and the raters were similarly trained, a lack of "scientific" level of understanding of the concept with regard to the teacher behaviors may be associated with ones effort to effectively identify and rate instances of use of the strategies. By implication, "scientific" level of understanding is necessary for one to effectively use the BSRS as an evaluation tool.

Discussion for Question 3

A series of 2 (groups) X 2 (times) ANOVAs on seven contextual variables showed that simplicity influenced control group’s effective use of participating/conversing "bridging strategy". The experimental group indicated that comfort influenced their effective use of observing, validating, role modeling teaching strategies; and clarity influenced their effective use of role modeling and managing/organizing/providing teaching behaviors.

Control Group

It was not expected that the control group would show more awareness of simplicity with regard to participating/conversing teaching behavior. Nonetheless, a possible reason for the result is that the sample size may have biased the result; since it is a limitation of the result. Therefore, a recommendation for further study is that the sample size be increased. Ironically, the rater’s ratings indicated a decline for the use of that strategy. Thus, it implies that perceived simplicity may not be associated
with effective use of specific teacher behavior.

As expected, the experimental group showed more awareness of the influence of contextual variables. The experimental group indicated that comfort influenced their effective use of observing, validating, role modeling teaching strategies; and clarity influenced their effective use of role modeling and managing/organizing/providing teaching strategies.

This experimental group's result was consistent with their self-ratings and raters' ratings of their effective use of the "bridging strategies". Thus, a possible reason for the result is that student-teacher assistants who are aware of, and are voluntarily in control of the effective use of "bridging strategies", also perceived the influence of certain attributes at a higher degree.

Although the contextual variables did not discriminate very much between the control and experimental groups, the study supports the premise that certain attributes influence student-teacher assistants' effective use of some of the "bridging strategies". The findings were consistent with studies that have established the influence of certain variables on elementary and high school teachers' acquisition of teaching skills. The fact that no clear pattern emerges with regard to the influence of the contextual variables may be associated with the smallness of the sample size or the instrument. Thus a recommendation for further study is that the sample size be increased and another instrument used to tap into the influence of those contextual variables.
Discussion for Question 4

Frequencies of posttest self-ratings and posttest raters’ ratings revealed that, observing, validating, participating/conversing, and managing/organizing/providing were the most used strategies; whereas, extending, problem initiating, role modeling, and instructing were the least used. Further examination of the distribution of posttest self-ratings and raters’ ratings revealed that the most effectively used strategies were observing, validating, participating/conversing, and managing/organizing/providing strategies. Extending, problem initiating, role modeling and instructing were least effectively used teaching strategies. The consistency of this findings (especially with regard to extending and instructing) is in line with the uneasiness expressed by the teachers in the pilot training, the instructor and her assistant, and the student-teacher assistants. Student’s comments during assisted performance with evaluation also showed that they felt uneasy extending and instructing when interacting with the children. As one student-teacher assistant observed, "I really need help with asking questions. I sometimes don’t know what to ask the children. Another student observed with regard to instructing, "I sometimes feel like telling the children what I think they should know, but I want them to take control of their own learning".

A possible reason for this findings may be associated with the fact that the activities were not standardized which implies that some activities may inherently warrant the use of certain strategies. A second reason for the finding is that some strategies may be inherently more difficult or easier to use than others.
An implication of this finding is that the information about the most/least frequently used teacher behaviors and most/least effectively used teacher behaviors may inform teacher educators’ decision as to how much time to allot content related to specific strategy. Such a sense may facilitate the effectiveness of the teacher educators’ assisting efforts. Given the exploratory nature of the data of this study, a replication is recommended. Also recommended is a study that standardizes the activities.

**Summary and Conclusions**

In general, the fact that findings of the present study provide supporting evidence on the effectiveness of the videotape training and assisted performance with evaluation as a medium of assisting teachers improve their effective use of the "bridging strategies" is of potential significance for teacher educators. The potential significance for teacher educators of prospective and inservice teachers is associated with the added option that the videotape training and assisted performance with evaluation protocol might suggest for effective training in the eight "bridging strategies". The unique characteristics of the training protocol with regard to training materials, human and physical resources provides an alternative for matching needs to training and resources. The need for studies specific to assisting early childhood teachers attain levels of effectiveness cannot be overemphasized. In addition, the findings of the "bridging strategies" most/least used could inform the time that teacher educators spend on related content. For example, it may be more meaningful for
teacher educators to spend more time and use variety of methods to assist teachers become more effective with regard to using extending, problem initiating, role modeling, and instruction "bridging strategy" since they were the least used.

Scholars have cautioned that early childhood education teacher educators should not leave these important strategies to chance or spontaneous development. As Feeney and Chun (1985) cautioned, "if future studies are to help improve teacher effectiveness they must not overlook the nuances of effective teaching or prescribed formulas to improve children's specific skills or behaviors" (p. 52). More time and practice is needed to develop these strategies to the "scientific" level.

The discrepancies between the control group's self-ratings and the raters' ratings may imply that the BSRS has potential as an evaluation tool for trained evaluators. Students may use the BSRS as a tool for self-rating their practice and even rating fellow colleagues. Administrators may use the BSRS as a tool that will set the stage for joint activity with teachers.

Given the exploratory nature of this study the results could be considered tentative, thus warranting a need for replication.
References


128
Appendix A
FCD 4214 Course Description
FCD 4214
Curriculum and Program Planning In Child Development
Fall 1995

Instructor: Andy Stremmel
Office: 317 Wallace
Phone: 231 - 4671
Office Hours: T, TH 3:30-5:00
or by appointment

Location: 244 Wallace
Time: T, TH 2:00 - 3:15
Course Index: 9040

Course Description:

This course provides supervised experience in planning, implementing, and evaluating activities and experiences consistent with the developmental abilities and interests of young children (infancy through age 8). Theories and teaching methods that foster the full development of children are stressed and an integrated approach to curriculum is presented in which literacy, mathematical and scientific, social studies, and creative activities are introduced and applied. Particular emphasis is placed on the role of teacher-child and peer interactions in the development of social, communicative, and cognitive competence in intrinsic motivation.

While this course primarily offers supervised experience in the teaching of children in early educational settings (infant, toddler, and pre-K classrooms), it is designed to encourage the development of a reflective disposition toward teaching in general. Specifically, teacher development is fostered through processes of shared inquiry and reflection on the pedagogical meaning and significance of students’ experiential knowledge about teaching and learning.

Required Reading:


Other readings will be placed on reserve or distributed in class.
Course Objectives:

1. Integrate and apply scientific and personal knowledge systems (i.e., child development and instructional theories, research evidence, as well as personal experience, subjective understanding, and instruction) in planning and implementing activities, schedules, and routines for young children in early educational classrooms.

2. Demonstrate an understanding of preactive, interactive, and evaluative phases of teaching (e.g., observing, planning, implementing, and assessing) in fostering all aspects of child development (i.e., cognitive, social, communicative, physical, creative) through the organization and implementation of informal learning activities.

3. Demonstrate an understanding of the role of play and informal learning activities as social contexts for development, and the ability to choose and utilize play materials effectively.

4. Demonstrate ongoing personal and professional development as an early childhood teacher, specifically:

   - as a teacher-researcher, decision-maker, and active participant in the teaching-learning processes of young children.

   - as a writer (author of your own teaching).

5. Develop skills in self-evaluation and a reflective attitude toward teaching.

AUDIT - To earn credit for auditing the course, students are expected to attend all classes and to do all readings.

Course Expectations:

1. Regular attendance is expected.

2. Participation in the Child Development Laboratories is required. Students are expected to spend 6 hours per week in their assigned lab school placement. Some participation in outside settings (e.g., public school classroom, family child care or child care center) also is required (see Professional Menu).

3. Students are expected to complete all assignments and requirements by the dates specified (see Evaluation p. 4).
4. Students are expected to contribute to classroom and small group conversations centering on their personal and interactive experiences with children and cases for teacher problem solving. Conversations focusing on actual and case-based teacher experiences provide students with opportunities to explore the context specificity of the teaching-learning process and begin to "think like teachers".

**Course Policies:**

All assignments should be typed, unless otherwise indicated, and proofread for spelling, typing, and grammatical errors.

If you are unable to participate in the lab school due to illness, death in the family, or emergency, **you** must immediately:

a. contact your Head Teacher or lab school office (1-6148)

b. contact Dr. Stremmel or the T.A.

c. arrange to make up missed time with your Head Teacher.

Unexcused absences (e.g., over sleeping, studying for another class, etc.) will negatively influence your lab participation evaluation. Both excused and unexcused absences must be made up.

**NOTE:** It is a privilege for you to observe and interact with children in the Child Development Laboratories and in other public school settings. Please guard this privilege well by: (a) not discussing children and families outside the class - professional ethics include protecting the privacy of all individuals, and b) not attending any practicum if you have a fever or any other sign of illness that might expose children to infection.

**Honor Code:**

All students are expected to uphold the standards of the Virginia Tech Honor Code. Any suspected violation should be reported to Dr. Stremmel or to 308 Squires Student Center (231-9876).

The use of commercially purchased notes (selling and buying) will not be permitted in this class. Any violation of this policy will be considered an honor code violation.
Assignments:

1. **Personal (Autobiographical) narrative on Teaching/Learning** - written reflection or history of your experiences as a student and learner and how these have informed your personal theory of teaching (to be revisited throughout the semester).

2. **Personal expectations/Goals** - written statement of the goals and expectations you have set for yourself this semester and questions or problems to which you hope to find some answers or solutions this semester.

3. **Activity plans** - plan, implement, and evaluate 3 different activities in your placement. A fourth (circle or group time) activity will be incorporated into your lead teaching experience (see 4 below). You should receive and provide peer feedback on each of your plan (to be discussed in class).

4. **Lead Teaching Experience** - prior to implementing group weekly plans, you will lead teach for on day (approximately 3 plus hours, depending upon your schedule). (More will be discussed in class)

5. **Group Weekly Plan** - as a group, plan, implement, and evaluate curriculum activities over an approximate period of one week. (More will be discussed in class)

6. **Experiential/professional Activities** - participate as a volunteer in a public or private school, child care center, or family child care home setting, and/or attend professional meetings (see Professional Menu).

7. **Lab Participation** - participate in CDL for 6 hours per week over an approximate 14 week period. Multiple measures of evaluation, formative and summative, will be utilized in determining your progress this semester.

8. **Participation in class conversations and writing exercises** - opportunities for oral and written reflection, both in and outside of the classroom with head Teachers and peers will help you to reflect on and make sense of your interactions with children, your planning, and the policies and procedures specific to your classroom. Multiple teaching methods will be employed in class to assist the shared learning process.

9. **Portfolio** - develop a professional portfolio to include the above assignments and activities, your reflections and self-evaluations, and any other materials of your own choosing related to your professional growth this semester. Although you will determine how to assemble your portfolio, you will be given guidelines and
assistance on what to include. However, in addition to required samples of your work, what you include should reflect dimensions of teaching and learning that are most meaningful and useful to you. (More specific information on portfolio development will be discussed in class.)

Evaluation:

Grades are necessary requirement of the university; therefore, I must give you one. However, I am not going to test you to determine how well you have mastered facts or skills; in my view, your own questions and problems are more conducive to constructing knowledge and meaning. Rather, I am more interested in your growth as a self-regulated learner, one who is capable of self-study and examination, responsible decision-making, and responsive teaching. Together, we will strive to make sense of teaching and learning, to enhance self-awareness and understanding of ourselves as "authors" of our own teaching scripts, and to assist each other in our becoming reflective teachers of children. Your overall effort in reflecting upon and improving your performance, confidence, and satisfaction in teaching will be considered by me as the measure of your success in this course. Specifically, the following factors will be taken into consideration in determining your final grade:

a) Your regular participation in class conversations and written exercises (including written feedback to peers) 25%

   This will be monitored using a system of + or -. You simply receive a + if you come to class and participate or a - if you do not come to class (classes are designed to encourage a variety of ways to participate, both oral and written).

b) Your evaluated performance in the Child Development Laboratories (to be determined by head teachers, the instructor, and your self-evaluation of your lab experiences this semester) 25%

   This will be determined collaboratively on the basis of:
   1. Head teacher Evaluation (standard form)
   2. Instructor Evaluation (based on observations)
   3. Lab Attendance (monitored by the T.A.)
   4. Self-evaluation (based on self-report, self-observation)

c) The extent to which your portfolio demonstrates evidence of your enhanced understanding of children, curriculum, developmental theory and its link to practice, and your ability to be reflective and self-regulated learner (e.g., make decisions, test
your ideas, learn from your mistakes, and otherwise monitor your teaching performance) 25%

A method of summarizing and evaluating the contents of your portfolio will be discussed in class. This involves both your own evaluation and instructor comments. Portfolio evaluation will occur two times during the semester (dates to be announced).

d) Adherence to assignment guidelines and due dates (all assignments must follow the prescribed guidelines and be turned in on time; exceptions will be granted only in case of emergency, death in the family, illness, or special circumstances that have been discussed with me in advance) 25%

Similar to the way participation is monitored, a + and - system will be used to keep a record of your written assignments (from narratives to plans and evaluations). You will receive ample feedback on your work, but you will not be graded for meeting a certain standard or criterion, determined either by me or the university, for whether you are doing well. Remember, this system is designed to emphasize self-directed learning and evaluation of effort and improvement in teaching practice.

If an assignment:

1. adheres to guidelines and is turned in on time, you receive +
2. does not adhere to guidelines and/or is turned in within 24 hrs. of the due date without an approved excuse, you receive -
3. is turned in more than 1 day late, you receive 0

NOTE: FAILURE TO COMPLETE ANY OF THE ASSIGNMENTS AUTOMATICALLY WILL RESULT IN YOUR FINAL GRADE BEING LOWERED BY ONE LETTER GRADE
CURRICULUM AND PROGRAM PLANNING
CALENDAR, TOPICS, AND ASSIGNMENTS

Tues. Jan. 16  Course Review - Student Schedules
Read:  Wortham: p. 1-18 The Role of the Teacher

Thurs. Jan. 18  Tour Child Development Labs - T.A.
Read:  Wortham: p. 19-26 and Ayers: Chap. 1

Tues. Jan. 23  Individualizing the Curriculum
Anti-Bias Issues
Read:  Wortham: Chap. 2 The need for DAP in ECE Settings

Thurs. Jan. 25  Parenting Styles - Influencing Teaching Styles
Read:  Ayers: One teacher's story - your choice

Tues. Jan. 30  PERSONAL NARRATIVES/EXPECTATIONS DUE
Myers Briggs - Teacher Temperament Influences
Read:  Ayers: One teacher's story - your choice

Thurs Feb. 1  Review of Key Principles of Working with Children
Review:  Field & Boesser: Chap. 6 - 10
Read:  Jones & Nimmo: p. 17 - 28
SELF OBSERVATION 1 DUE

Tues. Feb. 6  Uncovering Play Themes - Raggio Emilia Approach
Read:  Jones & Nimmo. p. 7 - 16
GROUP A: ACTIVITY PLAN 1 DUE

Thurs. Feb. 8  The Webbing Approach/Projects/Reggio, Con't
GROUP B: FEEDBACK DUE TO GROUP A

Tues. Feb. 13  Art and Creative Activities
GROUP B: ACTIVITY PLAN 1 DUE

Thurs. Feb. 15  Art and Creative Activities, Con't
Read:  Wortham: Chap. 3
GROUP A FEEDBACK DUE TO GROUP B

Tues. Feb. 20  Scientific and Math Concepts
GROUP A: ACTIVITY PLAN 2 DUE
Thurs. Feb. 22  Scientific and Math Concepts, Con’t
Read Wortham Chap. 4 & 5
GROUP B: FEEDBACK DUE TO GROUP A

Tues. April 16  GROUP A & B WEEKLY PLANS DUE

Thurs. April 18  Read: Ayers: 1 teacher

Tues. April 23  Read: Ayers: 1 teacher
SELF OBSERVATION 3

Thurs. April 25  LAST DAY TO TURN IN PROFESSIONAL ACTIVITIES
SUMMARIES

Tues. April 30  Last Class
Course Evaluations
Final Reflections
PORTFOLIOS DUE
Appendix B
Institutional Review Board Approval
MEMORANDUM

TO: Martha N. Baiyee  
Family and Child Development

FROM: Ernest R. Stout  
Associate Provost for Research

DATE: February 5, 1996

SUBJECT: IRB EXPEDITED APPROVAL"The Effect of Videotraining on Student-Teacher Assistant's Effective Use of Bridging Strategies Within an Interactionist Framework"  
Ref. 96-035

I have reviewed your request to the IRB for the above referenced project. I concur with Dr. Bird that the experiments are of minimal risk to the human subjects who will participate and that appropriate safeguards have been taken. The IRB has determined that each subject should receive a complete copy of the signed Informed Consent.

This approval is valid for 12 months. If the involvement with human subjects is not complete within 12 months, the project must be resubmitted for re-approval. We will prompt you about 10 months from now. If there are significant changes in the protocol involving human subjects, those changes must be approved before proceeding.

On behalf of the Institutional Review Board for Research Involving Human Subjects, I have given your request expedited approval.

Best wishes.

ERS/php

c. Dr. Bird
Appendix C
Bridging Strategies Rating Scale (BSRS)
Bridging Strategies Rating Scale (BSRS)

Please rate the student-teacher assistants' interactions using the following criterion by circling only one of the numbers [1] or [3] or [5].

[1] The criterion is Not met. The Student-teacher assistant observably demonstrates little evidence of the skill, attribute, attitude, or behavior during interactions with children.


[5] The criterion is Fully met. The student-teacher assistant observably demonstrates a great deal of evidence of the skill, attribute, attitude, or behavior during interactions with children.

Your rating should be based on the student-teacher assistants best score. If a student-teacher assistant demonstrated one strategy more than once and earned different ratings, then, the highest rating should take precedence.
Detailed Description of "Bridging Strategies"

1. **OBSERVING**
   - Actively watching the child
   - Teacher is mentally but not physically active
   - Child controls the context

2. **VALIDATING** (e.g., as Bleck, Ray, and Sue made their paper airplanes and needed an airport to fly the planes, Ms. Martha, their teacher, helped to move the unit blocks cabinet to create space for an airport. And used velcro to indicate the runway and limits as to where the airport starts and ends).
   - Acknowledging (I see you are all dressed up for the evening; You seem really busy making a construction; You seem really busy making an art project)
   - Supporting (You picked out a colorful blouse that matches the yellow skirt; As Jed and Francine approached the teacher carrying suitcases, the teacher asked about their imagined travel plan "Have you bought your travel tickets yet? How long to you plan to be away?")
   - Nurturing (It is interesting that you thought of the idea of constructing a bridge over the stream).
   - Meta-messages (Bateson, 1976 in Hoorn, J.; Nourot, P., Scales, B; and Alward, K. (1993) Behaviors that people use to signal this is a play or it’s not real (winks, smiles, laughter, play voices, or exaggerated movements (Jen is pretending to be a lion and roars with arms stretched out to represent the lion’s claws, and Ms Martha responded "What kind of animal are you pretending to be?").
   - Teacher and child are equally active
   - Child controls the context

3. **PARTICIPATING/CONVERSING** (acting the role of a nurse who attends to an old lady who was ill).
   - Listening
   - Talking (interacting in responsive partnership (not overpowering the child; allow children to initiate conversation. In other words, allow the child the opportunity to talk first if they so choose; offer to get involved; emphasize the process and not the product).
   - Synchronized verbal response to child’s verbalization
   - Synchronized verbal response to child’s action
   - Synchronized action in response to child’s verbalization
   - Synchronized action in response to child’s action
   - Sensitivity to cues from children in regards to appropriateness of participating
   - Is the teacher’s role supporting versus starring that may stifle childrens’ play.
- Teacher and child are equally active
- Teacher and child control the context

4. **EXTENDING**
   Identify what child is thinking (Are you thinking about what else to wear with your outfit)
   - Elaborate on what child is thinking (Would you like a pair of shoes or a scarf to go with your outfit)
   - Challenging/furthering child's thinking (John is playing in the blocks area with blocks and miniature cars and trucks. The teacher observation of his play indicated that he was playing with the blocks in the same way that he did on all the occasions when those same props have been set out. So the teacher decided to extend his play by challenging his thinking "John, I have this car and we need a carriage that is big enough to hold it"
   - Appropriate questions: (Questions that does not require a yes/no type of response. For example, John how can we the block to stay on the structure?; what would happen if the block on this end was removed?)
   - Teacher and child are equally active
   - Teacher and child control the context

5. **PROBLEM INITIATING**
   - Posing (I wonder what you think about wearing this blue pair of shoes with your outfit).
   - Taking advantage of problem (How can we get your cloth and shoes to match or well, we don't exactly have a pair of shoes that is of the same color as your skirt or blouse; What else can we do)
   - Conflicts: (An observer to Mrs. Paley's classroom in Chicago noticed a child standing, arms outstretched, in front of the unit blocks. No one could use the blocks as a consequence. When the children complained to Mrs. Paley, who was seated at the story dictation Table, she asked, "Ben how can they get the blocks they need?" Ben replied (after along pause), "They have to order them!" The other children immediately picked up blocks and "telephoned" their orders to Ben). would you like me to write your name in the appointment book)
   - Teacher and child are equally active
   - Teacher controls the context

6. **ROLE MODELING**
   - Displaying expected problem-solving behavior
   - Thinking behaviors
   - Attitudes toward learning

143
- Parallel player (Using a pretend gesture or an unstructured prop to make a telephone call within the child's view: Get involved yourself in messy play. For example, finger painting, goop play, shaving cream play)
- Teacher controls the context.

7. INSTRUCTING
- Imparting (Jen always gets confused on where to stand whenever she is trying to put her jacket on using the "flip-over" the head method. And the teacher has observed her get frustrated every time she does it and realizes that she had it up-side down. So she suggested to her "Jen I think there is a way that you can remember to get your jacket right.... see there is a tag on this side and there is none on the other side always remember to stand on the side where there is the tag. Have your jacket lay down in front of you; stand so the tag is in front of you; insert your arms into the sleeves; then flip it over". Let's try.
- Demonstrating information (To use the can opener, you have to push it down, then you turn the knob on the side).
- Teacher control the context

8. MANAGING/ORGANIZING/PROVIDING
Is the environment set up in a manner that scaffolds for certain kinds of play. For example, functional play, constructive play and, dramatic play?
- Physical space arrangement
- Sufficiency and proper functioning of materials (e.g., scissors should cut with ease, markers should mark)
- Anticipates the spatial arrangements
- Accessorizing
- Knowledge on how materials work (How does the crane work, How does the measuring scales work)
- Teacher controls the context
### Bridging Strategies Rating Scale (BSRS)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Who Controls the Context</th>
<th>Descriptive Definition of Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child</td>
<td><strong>Observing</strong>: Actively watching the child think in order to diagnose and plan for learning. The teacher is mentally but not physically active.</td>
</tr>
<tr>
<td></td>
<td>Teacher/Child</td>
<td><strong>Validating</strong>: Acknowledging, supporting, and nurturing the child's behavior in a way that does not interrupt or alter the child’s activity. The teacher and child are equally active.</td>
</tr>
<tr>
<td></td>
<td>Teacher</td>
<td><strong>Participating/Conversing</strong>: Listening, talking, and interacting in responsive partnership with the child. The teacher and child are equally active.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Extending</strong>: Identifying what the child is thinking and elaborating on, challenging, and furthering the child’s thinking processes. The teacher and child are equally active.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Problem initiating</strong>: Posing and taking advantage of problems, conflict, and appropriate challenges and questions that engage the child’s thinking. The teacher and child are equally active.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Role modeling</strong>: Displaying expected problem-solving and thinking behaviors and attitudes toward learning. The children may react by imitating, responding, remembering, or ignoring.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Instructing</strong>: Imparting and/or demonstrating information that the child is expected to learn. The attention of the child is required. The teacher sets clear expectations and guidelines for children’s behavior and the material being taught.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Managing/Organizing/Providing</strong>: Preparing the environment and establishing a context for safe and stimulating learning on an ongoing basis. Providing regular opportunities for children to encounter meaningful experiences</td>
</tr>
</tbody>
</table>
Appendix D
Questionnaire
Name:

On a scale of 1 to 7 indicate the degree to which the variables influenced your use of the "bridging strategies", listed below. For definitions of the strategies see the self-rating scale.

1 = Strongly Disagree
3 = Disagree
5 = Agree
7 = Strongly Agree

<table>
<thead>
<tr>
<th>&quot;Bridging Strategies&quot;</th>
<th>I was comfortable using the &quot;bridging strategy&quot; of</th>
<th>(e.g., observing) was clear and understandable</th>
<th>___ was simple to use</th>
<th>___ was modeled by my Head Teacher</th>
<th>___ fits into my personal values on how children develop and learn</th>
<th>___ fits with my understanding of how to ___</th>
<th>___ was practical to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>validating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participating/Conversing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem initiating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role Modeling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing/Organizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix E
Student-Teacher Assistants’ Training Overview
Student-Teacher Assistants' Training Overview

The following will be included as objectives for the training. (1) Have a sense of their individual zone of proximal development, (2) familiarize the student-teacher assistants with the perspective of the video program, (3) assist student-teacher assistants in understanding the concepts embedded in the strategies and their characteristics, and (4) challenge the student-teacher assistants to transfer the acquired knowledge of the bridging strategies into effective and appropriate observable behavioral interactions with preschool children.

1. Getting acquainted

2. Discussion (interaction perspective)

3. Introduction to concept video

4. View concept video

5. Discussion (Concept video)

6. Introduction to pattern video

7. View pattern video

8. Discussion (Pattern video)

9. Closing remarks
Appendix F
Raters' Training Overview
Raters’ Training Overview

The primary purpose of the training will be to assist the raters to attain a level of maximum proficiency in their use of scoring criteria to identify and discriminate instances of appropriate use of bridging strategies in videotaped segments of student-teacher assistant/child interactions. The definition of maximum proficiency will further be practically defined as the ability of raters to rate a thirty-minute of a student-teacher assistants’ interaction with children with an interrater reliability of between eighty-five to one-hundred percent.

1. Getting acquainted
2. Introduction to concept video
3. Viewing concept video
4. Reactions to video
5. Viewing pattern video
6. Familiarization with BSRS
7. Review and rate pattern video
8. establish interreliability
9. Closing
Appendix G
Vita
Martha Ndako Baiye

EDUCATION:

Ph.D., Family and Child Development, September 1996 Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, Virginia
Major: Child Development
Dissertation Topic: The Effect of Video Training on Teachers’ Use of "Bridging Strategies" Within an Interational Framework.

M.S., Home Economics Education, May 1991 Ball State University, Muncie, Indiana

B.S., High Honors, Home Economics Education, May 1990
Tuskegee University, Tuskegee, Alabama

ACUHO - I/NACUFS Certificate, August 1989
Indiana University, Bloomington, Indiana
Focus: College and University Food Service Internship Committee of the Association of College and University Housing Officers -/International National Association of College and University Food Services.

C.A.P., Distinction, Cameroon Pedagogic Diploma, July 1985
Teacher’s College, Kumba, Cameroon
C.A.P. Project: Design and implementation of a Community Development project on child care, sewing, family relations and family economics.

PROFESSIONAL PRESENTATIONS AND ACTIVITIES:

Constructive Discipline Within the Early Childhood Setting; Childcare Providers Workshop, Blacksburg Virginia, June, 1996

Making Show-n-Share a More Meaningful Experience for Young Children; Fortieth Annual Virginia Association For Early Childhood Education (VAECE) Conference, Richmond Virginia, March, 1996


PROFESSIONAL MEMBERSHIP:

- National Association for the Education of Young Children (NAEYC)
- New River Valley Association for Early Childhood Education (NRVAECE)

HONORS AND AWARDS:

- Graduate Research Development Project Award, GRDP, 1996
- Virginia Tech University Student Leadership Award (USLA nominee, 1995)
- University Scholar, Tuskegee University, 1989
- ACUHO-I/NACUFS Internship Award, 1989
- University Honors Student, Tuskegee University, 1987 - 1989
- National Deans List, 1988 and 1989

Martha Baiyee