The role-taking experience of undergraduate peer tutors: A cognitive-developmental approach

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Abstract
The two purposes of this study were (1) to investigate the effects on undergraduate peer tutors of taking on the role as tutors (2) to explore what happens in tutors' experience to impact growth. Three research questions investigated changes in tutors' cognitive-structural development, the complexity of their thinking about tutoring, and tutoring practice. The fourth question investigated the mechanisms of change. This study addresses the lack of research about undergraduate college tutors and the ways in which they change as a result of taking on the tutoring role.

The participants were nine undergraduate peer tutors at an urban commuter college who were enrolled in a four-month credit-bearing Tutor Development course based on the Teaching and Learning Framework.

Three measures were used to assess changes in the cognitive and moral domains: the Paragraph Completion Method (PCM), the Reflective Judgment Interview (RJI), and the Defining Issues Test (DIT-2). Tutors' journal entries were coded for levels of complexity in their thinking about tutoring; audio and video tapes were used to rate tutoring practice. Results indicate significant changes for the group in moral development as measured by the DIT-2. The group remained fairly stable at the high conceptual level on the PCM and at the quasi-reflective stage on the RJI. Coding of tutors' journal entries indicated moderate levels of complexity in the thinking about tutoring. Ratings of video tapes of tutoring practice showed improvements in negotiating a goal for the tutorial, using questions, and providing corrective feedback.

A qualitative analysis of tutors' journals, Learning Center records, and the quantitative data revealed three themes. Narratives of three tutors' experiences explore differences, develop themes, and highlight ways in which tutors' developmental level, participation in the class discussions, demonstrations, supervised practice, amount of reflection, and balance of support and challenge impacted development. The results suggest that the mechanisms of change were the two components of the Teaching and Learning Framework—the instructional repertoire and the conditions for growth.

Implications for tutor training programs are considered in the conclusion. Appendices include a guide for coding tutors journals and tutoring behaviors at different levels of complexity.

Keywords
Education, Higher, Education, Educational Psychology

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THE ROLE-TAKING EXPERIENCE OF UNDERGRADUATE PEER TUTORS: A COGNITIVE-DEVELOPMENTAL APPROACH

BY

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DISSERTATION

Submitted to the University of New Hampshire in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy
In
Education

December, 2004
This dissertation has been examined and approved.

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DEDICATION

This work is dedicated to the undergraduate peer tutors with whom I have worked the past fifteen years. Each year I have learned something new about the art of tutoring by observing the tutors and listening to them discuss their experiences. Through them, I have accumulated a wealth of anecdotes, gained some insights, and raised many questions. I am especially grateful to the nine tutors who participated in my study for giving me their time, sharing their thoughts with me, and allowing me to probe their tutoring experiences. They helped me to raise more questions and to turn some anecdotes into evidence and insights into suggestions for improving the Tutor Development program.
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Many people have influenced my pursuit of the doctoral degree, but a few in particular hold special importance: my advisor Dr. Sharon Nodie Oja whose unfailing enthusiasm, support and countless hours of reading, listening, and talking helped me stay on task; Dr. Ann Diller who managed so well to balance support with challenge in the dissertation seminar, and my husband Ted who supported my efforts from beginning to end, not without cost to himself. I am deeply grateful for the support and guidance they have provided me over the past seven years.

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Over the years, many other professors introduced me to thought provoking theories and taught me the skills I needed to conduct the research, analyze the data, and write the dissertation. I am grateful for the opportunity to have studied with each of my professors.

Several other people assisted me through training, or by scoring assessments, coding journals, or rating taped tutorials. Dr. Laura Jensen trained me to conduct the Reflective Judgment Interview, and she, along with Rayna Godfrey scored the transcripts of the RJI. Drs. Mildred Struck and Mary Jane Moran graciously consented to score the pre-test and first post-test of the PCM. Lorraine Howland and Dr. Ron Weisberger coded

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tutors’ journal entries. Jacqueline Pena and Clare Thompson spent hours rating audio and videotapes of tutorials. I am grateful to all of them for their assistance and their timely feedback on the instruments, journals, and tapes.

Other people’s lives were affected by my immersion in the doctoral experience, especially my daughters, Tricia and Susan, and Jillian Knowles, former Assistant Director of the Learning Center. My daughters offered encouragement, sent flowers when I hit snags in my research, and adjusted to “dissertation décor” in my home while I attended to my research and writing. Jillian took on my responsibilities during my six-month leave of absence, collaborated in designing the Tutor Development course, and helped me with the quantitative data – all this while she herself worked on her doctorate. I am very grateful to these three women for their warm support and their sensitivity to the challenges presented by the task of writing a dissertation.
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ABSTRACT

THE ROLE-TAKING EXPERIENCE OF
UNDERGRADUATE PEER TUTORS IN LEARNING CENTERS:
A COGNITIVE-DEVELOPMENTAL APPROACH

By
Margaret Coulthard Pobywajlo
University of New Hampshire, December, 2004

The two purposes of this study were (1) to investigate the effects on undergraduate peer tutors of taking on the role as tutors (2) to explore what happens in tutors' experience to impact growth. Three research questions investigated changes in tutors' cognitive-structural development, the complexity of their thinking about tutoring, and tutoring practice. The fourth question investigated the mechanisms of change. This study addresses the lack of research about undergraduate college tutors and the ways in which they change as a result of taking on the tutoring role.

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A qualitative analysis of tutors' journals, Learning Center records, and the
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participation in the class discussions, demonstrations, supervised practice, amount of
reflection, and balance of support and challenge impacted development. The results
suggest that the mechanisms of change were the two components of the Teaching and
Learning Framework – the instructional repertoire and the conditions for growth.

Implications for tutor training programs are considered in the conclusion.
Appendices include a guide for coding tutors journals and tutoring behaviors at different
levels of complexity.
CHAPTER I

INTRODUCTION

Tutoring is one of the oldest forms of learning assistance, dating perhaps as far back as the ancient Greeks (Moust & Schmidt, 1994; Topping, 1996). Although tutoring in colleges fell out of favor for some time, it regained popularity in the 1970’s when colleges opened admissions to students who were more diverse and sometimes under-prepared to do college work (Costa, 1997; Moust & Schmidt, 1994; Topping, 1996). For example, Boylan (2000) reported that students who are under-prepared for college are enrolling in larger numbers. McCabe (2000, as cited by Platt, 2001) estimated that about one-third of students entering college are under-prepared. Also, the percentage of students with learning disabilities who enrolled in college increased from 15% in 1985 to 25% in 1991 (Dunn, 1995), and it continues to grow as more students with disabilities realize that they can benefit from college education and as special education support in K-12 schools allow for greater success.

Faced with an increasingly underprepared student body, many colleges have established math centers, writing centers, offices for students with disabilities, programs for English Language Learners (ELL), and/or comprehensive Learning Centers that serve multiple purposes (Boylan, 2000). Often pushed financially to “do more with less,” many colleges and universities have implemented peer tutoring programs. While some learning assistance centers employ professional tutors, peer tutors are the choice of
“several hundred institutions” (Topping, 1996, p. 338). Saunders (1992) defined peer tutoring as involving “more advanced learners” (p. 211) to help other learners with their studies; they are particularly effective, he says, because they “have valuable insights which academic staff do not have” (p. 216).

After surveying 2200 tutorial programs in American colleges and universities, researchers who conducted the National Study of Developmental Education (NSDE) estimated that over 90% of American community colleges and at least 70% of American universities provide tutoring to undergraduate students through learning assistance centers (Boylan, Bonham, Bliss & Claxton, 1992, as cited by Boylan, 2000). Costa’s (1997) smaller but more recent survey indicated that 86.5% of all higher education institutions provide tutoring to their students.

Tutoring is widely recognized by many educators as having positive pedagogical and motivational outcomes for the tutees (Merrill, Reiser, Merrill, & Landes, 1995). The outcomes for the tutors, on the other hand, have received little attention. One exception is an often cited meta-analysis of 65 tutoring programs grades K – 12 by Cohen, Kulik and Kulik (1982) who described the effects on tutees and tutors in three areas: student achievement, student attitudes, and self-concept. Although effect size varied “from study to study” (p. 241), they concluded that tutoring programs “have definite and positive effects on the academic performance and attitudes” of both tutors and tutees (Cohen et al., 1982, p. 244). Most studies of tutorial programs have been conducted in the K-12 environment, not in colleges (MacDonald, 1993; Topping, 1996).
The Problem: A Lack of Research about Tutors

Despite the popularity of learning assistance centers and the widespread use of peer tutors, few researchers have examined the effects of the tutoring experience upon undergraduate peer tutors. A few researchers, particularly in the fields of writing centers or mathematics education, have investigated what processes are involved in tutoring, what characteristics are desirable in tutors, and what behaviors constitute good practice. Although there is much to learn from that research, the studies tell us little about tutors’ cognitive-structural development or changes in tutoring practice; moreover, they do not tell us what happens in tutors’ experience that might influence such changes. The one effect on tutors recognized in the literature is the tutors’ increased competence in the areas in which they tutor (Cohen et al, 1982; Saunders, 1992; Topping, 1996; Whitman, 1988). Writing tutors become better writers; math tutors become better at mathematics, subject area tutors master the content, and study skills tutors develop better study skills.

Being a tutor as an undergraduate student places certain demands upon the individual. Like teachers, tutors are involved with students’ intellectual development and academic adjustment. Like teaching, tutoring is a complex task that requires a high level of complexity for processing information at a deep level in order to help others learn (Reiman, 2000). Tutoring also requires tutors to be aware of their learning strategies so they can help tutees develop their own strategies (Maxwell, 1990). As a cognitive process, tutoring requires tutors to make “evaluative judgments” that we hope are thoughtful, based on evidence, and viewed through the “appropriate frames of [social and ethical] reference” (Bruffee, 1978, p. 450). A tutor also needs strong interpersonal skills,
such as listening and speaking skills, and interpersonal qualities such as tolerance and empathy. As Whitman (1988) put it, "[T]utors are expected to be people oriented as well as knowledgeable" (p. 37). In addition, tutoring is an ethical activity that requires a high level of moral development in order to recognize what behaviors are in the tutee’s best interest, how much help is too much help, when to put the tutee’s interests and goals ahead of the tutor’s interests and goals, and what is confidential information that cannot be shared.

Learning to tutor is a developmental process that occurs in the cognitive and moral domains. Good tutoring does not happen by accident; it requires training and supervision. Several studies have shown that trained tutors are more knowledgeable, efficient, student-centered, and strategic in their tutoring than are untrained tutors (Brandwein & DiVittis, 1985; Costa, 1997; MacDonald, 1993; Mann, 1993; Saunders, 1992). Other studies indicate that individuals who take on the role as tutors need a supportive environment that promotes their cognitive and ethical growth because tutors who are at a higher level of development can be expected to be more effective (Cognetta, 1977; Mann, 1993). In order to reach their goal of providing effective tutoring services, tutor training programs must concern themselves with tutors’ cognitive-structural and ethical development. Yet, few studies have attended in any detail to the tutors’ cognitive development (Mann, 1993). Cognitive-structural development refers to the Piagetian notion that structural changes occur in our brains when we experience “difference, discrepancy, anomaly” (Kegan, 1994, p. 210) in any aspect of our lives. Changes in cognitive-structural development occur across three domains – the cognitive, personal,
and moral (Reiman & Thies-Springhall, 1998) -- and they result in more complex brain structures that enable us to deal more adequately with increasingly complex problems.

In this study, as in previous role-taking studies by Cognetta, (1977) and Mann (1993), individuals took on the role of tutor that required them to accept new responsibilities while they participated in a supportive class modeled on the Teaching and Learning Framework (Reiman & Thies-Springhall) to learn new skills. This study was concerned with changes in the participants' cognitive and moral stages of development, changes in their thinking about tutoring, and changes in tutoring performance.

Purposes and Research Questions

There were two purposes for conducting this descriptive study. The first purpose was to investigate how individuals who take on the role as tutors and participate in a supportive program change during their first semester in the new role. The second purpose was to explore what happens in tutors' experience to impact growth.

This study addressed four research questions:

1. Are there cognitive-structural changes?
2. Are there changes in the complexity of the tutors' thinking about tutoring, especially in regard to flexibility and adaptability, tolerance of uncertainty, the disposition to critical thinking, and an ability to detect problems?
3. Are there changes in tutoring practice?
4. What are the mechanisms of change?

In order to attend to the complexities of the tutors' development, this study used multiple means of assessing the tutors' development. For purposes of this study, the term
development refers to changes in the tutors’ scores on three quantitative instruments, and
the phrase “developed as tutors” refers to gains in the complexity of the participants’
thinking about tutoring and improvements in their tutoring practice. Three research-
based instruments were used to address question 1, and two guides created by the
researcher were used to address questions 2 and 3; a qualitative analysis of all the data
was done and three narratives were written and analyzed to address question 4. The
qualitative inquiry built on the results of the quantitative assessments and further
investigated the tutors’ experience to probe the mechanisms of change.

Justification for the Study

There are both practical and ethical reasons to be concerned about tutors’
cognitive-structural development. From a practical standpoint, institutions should be
concerned about tutors’ development and performance because tutors are an investment
in student achievement and retention. Studies among teachers and college students
indicate that higher levels of development can be linked to improved subject competency,
higher order thinking skills, increased tolerance of uncertainty and difference, increased
flexibility and adaptability, improved ability to detect conflict and define problems,
concern for others, and improved performance (King & Kitchener, 1994; Mann, 1993;
Oja & Sprinthall, 1978; Reiman & Thies-Sprinthall, 1998; Rest, 1994). The tutors’
cognitive-structural development is likely to result in improved performance, which can,
in turn, be expected to result in tutees’ improved achievement and attitudes (Reiman &
Thies-Sprinthall, 1998). Furthermore, the need for tutors to provide assistance is likely to
increase as more students of varying degrees of preparation choose to attend college, and
institutions continue to increase the diversity of their student bodies (MacDonald, 1993). This potential increase in peer tutoring warrants more attention to the development and performance of peer tutors.

Besides the practical reasons, there are ethical reasons to be concerned about tutor development. If, as many researchers have argued, a student’s development as a person should be the primary aim of higher education (Chickering, 1981; Dewey, 1933; McNeel, 1994; Mentkowski and Associates, 2000), a tutor’s development should concern us because tutors are not only undergraduate students, but also facilitate learning for other students whose development concerns us. Another ethical issue is the risk of assigning untrained or under-trained tutors to work with students because the tutors may do harm (Saunders, 1992; Topping, 1996). We cannot assume that because tutors are good students that they will also be good tutors (Munger, 1996). According to research by Bell (2001), Costa (1997), Hey and Nahrwold (1994), and Munger (1996), tutors require extensive training and supervision in order to acquire pedagogical knowledge and develop the higher order thinking skills required for tutoring. Finally, if we do not concern ourselves with tutors’ training and development, we run the risk of exploiting them (Bruffee, 1978). Most institutions pay tutors little more than a token wage, yet entrust to them the academic success of other students. By concerning ourselves with tutors’ training and cognitive-structural development, we prepare them to handle a range of cognitive and ethical problems. At the same time, we fulfill an aim of higher education.
The Researcher's Dual Role

In conducting this study, I took on two roles -- that of the researcher and that of the participant observer who taught the tutor development seminar, responded to journals, and mentored tutors on their practice. Every effort was made to minimize researcher bias and to clarify the perspective from which tutors were observed and assessed in all parts of the study. The quantitative instruments were sent to trained raters or scored by computer, and outside learning assistance professionals were recruited to code journals and rate audio or videotapes. In the qualitative part of the study, "data source triangulation" was used to "gain the needed confirmation [and] to increase credence in the interpretation" (Stake, 1995, p. 112).

Significance of the Study

By using multiple means of assessing tutors' development, this study extends our understanding of tutors' cognitive-structural development and its relationship to their thinking about tutoring and tutoring practice. The study contributes to the literature on tutor training, particularly to the research conducted on tutoring in college learning centers. The study should be of interest to directors of college learning centers and to people in the process of developing tutoring programs for colleges or adult literacy programs. In addition, professionals in organizations like the College Reading and Learning Association\(^1\) and the National Association of Developmental Education who

\(^1\) College Reading and Learning Association (CRLA) is a professional organization of college educators whose focus is on providing learning assistance, developmental courses, and certifying tutor training programs. See Appendix B for certification criteria.
work with and train tutors have a vested interest in this research. My hope is that research, such as this study, which is focused on college tutors and tutor preparation will lead to improved requirements for tutor certification, more attention to tutors’ cognitive-structural development, and an effective model for tutor development programs.

List of Definitions

Cognitive-structural development: the Piagetian notion that structural changes occur in our brains when we experience “difference, discrepancy, anomaly” (Kegan, 1994, p. 210) in any aspect of our lives. The changes in cognitive-structural development result in more complex brain structures that enable us to deal more adequately with increasingly complex problems.

Comprehensive learning centers: Centers that offer many services including tutorials across the disciplines, study groups, supplemental instruction, services for students with disabilities, and support for English Language Learners.

Conceptual level: refers to a person’s “current preferred style of solving problems in human interactions” (Reiman & Thies-Sprinthall, 1998, p. 43).

Development: in this study, development is used to refer to changes in the tutors’ scores on the three instruments (the amount of gain varies with the instrument because each one uses a different scale); a gain of \( \geq 0.5 \) in the complexity of tutors’ thinking about tutoring in any of the pre-defined categories indicates development in that category; a gain of \( \geq 0.5 \) in three or more non-directive tutoring strategies, or a combination of a gain in two preferred tutoring strategies accompanied by a decrease in directive tutoring
strategies. The phrase “developed as tutors” refers to gains in the complexity of their thinking about tutoring and their tutoring practice.

Developmental education: a field of higher education dedicated to assisting students with learning in college level courses by providing pre-college courses, tutoring, and counseling. The professional association is the National Association of Developmental Education (NADE).

Disequilibrium: “curiosity, uneasiness, affective arousal” (Sprinthall, Sprinthall, & Oja, 1998, p. 131) that results when an individual confronts difference or discrepancy between prior knowledge or beliefs and new knowledge or beliefs.

Epigenetic Landscape: an organismic theory of human development described by Fischer and Bidell (1991). Epigenesis is the interactionist perspective found in biology that asserts three systems shape development: an individual’s genetic endowment, the social and physical environment, and the self-regulation of the organism.

Functional level: the level at which the person usually thinks when less than optimal conditions are present (King & Kitchener, 1994).

Guided reflection: further prompts for reflection are provided by teacher’s feedback to journal writing. The teacher differentiates feedback according to the writer’s apparent developmental level (Reiman, 1999).

Ill-structured problems: problems for which there is no one right answer.

Learning Assistance: providing individual or group tutorials to students. No distinction is made regarding students’ level of preparation for a course. It is
distinguished from developmental education by its emphasis on being a resource for all students, not just underprepared students.

Meta-analysis: a “statistical procedure for combining the results of several studies on the same topic” by calculating the effect size (Frankel & Wallen, 2000, glossary).

Moral judgment: a “psychological construct that characterizes the process by which people determine that one course of action in a particular situation is morally right and another...is wrong. Moral judgment involves defining what the moral issues are, how conflicts among parties are to be settled, and the rationale for deciding on a course of action” (Rest, 1994, p. 5)

National Association of Developmental Education (NADE): an organization of professionals dedicated to providing learning assistance to all students, and pre-college courses, tutoring, and counseling to under-prepared students. Their motto is, “Helping under-prepared students prepare, prepared students advance, advanced students excel” (http://www.nade.net/b4_motto.htm).

Optimal level: the level at which a person is capable of thinking under optimal conditions.

Organismic theory: a constructivist theory that assumes the individual plays an active role in his/her development.

Peer tutor: an undergraduate who is providing learning assistance to another undergraduate. The tutor is an advanced learner who is usually paid by the institution to assist a fellow student.
Reflection: The process of looking inward, examining one’s assumptions, beliefs, and practices in light of new experiences and information.

Reflective judgment: bringing “closure to situations that are uncertain” (King & Kitchener, 1994, p. 6) by evaluating “beliefs, assumptions, and hypotheses against existing data and against other plausible interpretations of the data” (p. 7).

Role-taking: active engagement in a helping role, such as tutoring, that requires one to take on new responsibilities, acquire new skills, and “to see events and problems from another person’s cognitive and affective growth states” (Reiman & Thies-Sprinthall, 1998, p. 79).

Schema/schemata: interconnected relationships or ideas that result in a generalized picture for interpreting things.

Self-regulation: a process of self-correction by which a person makes changes to his/her beliefs or process in order to accommodate new ones.

Stages: one of many words used to describe a person’s level of development. Other terms include “schema for naturally making sense of situations” (Rest, 1994, p. 8) and levels of consciousness (Kegan, 1982).

Teaching-Learning Framework: developed by Reiman & Thies-Sprinthall (1998), the framework is a combination of an instructional repertoire adapted from Joyce and Showers and five conditions for growth and development as researched by Sprinthall & Thies-Sprinthall.

Tutees: students receiving tutorial assistance from a tutor.
Under-prepared student: a student who has not taken the pre-requisite courses or has not acquired the skills in spite of having taken the courses.

Organization of the Study

The selected literature review in Chapter 2 summarizes the theories that form the conceptual framework and the research that supports those theories, examines the research on role-taking and cognitive development as suggested by the Teaching and Learning Framework, and describes relevant studies of tutors. The chapter consists of three sections, each devoted to a particular theory or family of theories and relevant research.

Chapter 3 describes the multiple methods used in the quantitative part of this investigation into tutors' cognitive-structural development, the complexity of their thinking about tutoring, and tutoring practice. Chapter 3 is sub-divided into one section for each of the four research questions. The chapter concludes with an explanation of how the data were analyzed and a list of the threats to the quantitative portion of the study.

Chapter 4 presents the results of the quantitative part of the study in text and table form. For each measure, group data are presented first, followed by individual results when appropriate.

Chapter 5, a discussion of the results, is divided into five major sections, one for each of the research questions, and a brief section on the Teaching and Learning Framework. First, the results of the three quantitative instruments are discussed in the
context of the theories and previous research. Second, the results of and difficulties with the coded journals are discussed and linked to results of the instruments where they are relevant. In the third section, the results of the rated tapes are discussed and linked to the coded journals.

Chapter 6 describes the qualitative part of the study, beginning with the process by which data was analyzed. To explore the findings from this analysis, narratives were written of three tutors’ experiences. Following a discussion of the narratives, the conclusions are drawn from the qualitative part of the study.

Chapter 7 summarizes the study and draws connections between the two parts of the study, discusses the limitations of the study, and considers the implications for the Tutor Development program. The chapter concludes with suggestions for future research.
CHAPTER II

A SELECTED REVIEW OF THE LITERATURE

In this chapter I present a summary of the theories that guided my study and the research from which I drew the research questions. The chapter is divided into three sections: The first section briefly summarizes Piaget’s theory of cognitive development,² four stage theories of cognitive-structural development based on Piaget, and research based on three of the theories. Each theory is described by levels of complexity. The literature reviewed in this section addressed two research questions: (1) Are there cognitive-structural changes? (2) Are there changes in the complexity of the tutors’ thinking about tutoring? The second section describes the Teaching and Learning Framework, the model for the Tutor Development course, and summarizes related studies. This literature was relevant to the fourth research question: (4) What are the mechanisms of change? In addition, there is a brief summary of the Epigenetic Landscape, a model that helps to justify examining the context in which changes occur and addresses the second purpose of my study. The third section of the literature review briefly explains Vygotsky’s social constructivist theory on which the concept of peer tutoring is based and summarizes research about college tutors. From this research I

² Stage theories of cognitive development draw upon Phase 2 of Piaget, and the concepts of disequilibrium and cognitive development used in this study are drawn from stage theories.
drew the characteristics of good tutoring used to address the third research question (3): Are there changes in tutoring practice?

All of the Piagetian stage theories described in this chapter “posit relationships between more complex stages, more adequate use of problem solving strategies, [and] more adequate performance in complex human interactions” (Oja & Reiman, 1998, p. 473). Each Piagetian theory, as well as Vygotsky’s theory, is an organismic theory of human development, meaning it is a constructivist theory that assumes the individual plays an active role in his/her development.

Theoretical Framework

Piaget (as cited by Sprinthall, Sprinthall, & Oja, 1998) theorized that cognitive growth occurs in response to “knowledge disturbances” (Reiman & Thies-Sprinthall, 1998, p. 79) that occur when an individual encounters information or concepts that differ from his/her prior knowledge. Piaget described two responses to such encounters: assimilation and accommodation. When the individual makes new experiences or concepts “fit” with prior experiences and knowledge, s/he assimilates them. Piaget believed a person could assimilate only what s/he had the competence to understand; this is Piaget’s acknowledgment of the role innate qualities play in the developmental process and an indication that he believed development preceded learning. Although most of our learning occurs through assimilation (Gallagher & Reid, 1981), an individual is likely to show little measurable cognitive growth through assimilation unless there is an interaction between assimilation and the second mechanism, accommodation
Accommodation is accomplished through self-regulation and results in changes in the neurological system and movement to a new stage of cognitive development. Accommodation is activated when an individual recognizes the contradictions between prior knowledge and new experiences or concepts s/he has assimilated. This may result in “curiosity, uneasiness, affective arousal” (Sprinthall, Sprinthall, & Oja, 1998, p. 131), or in other words, disequilibrium. Through a process of equilibration or self-regulation, the individual attempts to “correct” the imbalance of old information with the new. Information is reorganized and more complex structures are created through reflexive abstraction. In this study, self-reflection was intended to assist with accommodation and promote self-regulation because reflection should lead to an increased ability to see errors and to self-correct (Putnam, 1991). Accommodation results in movement to a new stage as a result of opening oneself to new assumptions and perspectives. However, Reiman & Thies-Sprinthall (1998) point out that growth is not just a matter of adding new cognitions; rather, growth occurs “at the expense of old cognitions. .... During such a disequilibrium, a person’s affective (emotional) processes become more fully engaged. It is precisely at such a point that cognition and affect intersect” (italics appeared in the original text, p. 74). Giving up old cognitions may result in “affective upset” (p. 75), and if disequilibrium is not resolved, it may result in frustration. However, when the new information is successfully accommodated and the disequilibrium is resolved, there is cognitive growth.
A Family of Stage Theories

Cognitive-structural development has been determined to occur across three domains: cognitive, personal, and moral (Reiman & Thies-Sprinthall, 1998). Four theories that examine the cognitive or moral domains are Hunt’s (1971) theory of conceptual levels, King and Kitchener’s (1994) theory of reflective judgment, Rest’s (1994) theory of moral development, and Kegan’s (1982, 1994) subject-object theory. All four theorists draw upon, modify, and elaborate on Piaget’s theories, so they can be said to be members of the same family of theories. Reese and Overton (1970) define a family as “a set of theories that are based upon the same model, although not necessarily the same specific content area” (p. 124). Each theorist calls attention to a different area of development, but none fully explains it. Such is the case with Hunt, King and Kitchener, Rest, and Kegan’s theories of cognitive-structural development.

The theories of Hunt, Kitchener and King, Rest, and Kegan all fit the definition of developmental theory which assumes the existence of stages, and each stage has four features. (1) Each stage is “qualitatively different from the preceding stage.” (2) There is movement from less complex to more complex structures. Each stage “represents a new and more comprehensive system of ‘mental’ organization.” (3) Stages occur in an “invariant sequence.” (4) Stages are related to age “within general groupings, “but are not bounded by age. (Sprinthall, Sprinthall, and Oja, 1998, p. 193-194). All of the theories in the family of theories described here are based on Piaget and assume that “development occurs as a result of interaction between individuals and their

3 This study is concerned with only two of the three domains.
surroundings” (Boonyaprakob, 2002, p. 213). Different theorists emphasize (or de-emphasize) some features of the definition, particularly the idea of being “in” a stage. Kegan’s (1982) definition of development includes the four components stated above, but he acknowledges that he has modified Piaget’s theory to the point where some people might not recognize it because he blends cognitive developmental theory and psychoanalytic theory to create his subject/object theory. Kegan is included here because he provides a helix model of alternating periods of differentiation and integration that services as an alternative model within the same family of theories to models that suggest development is linear. For example, Kegan’s model helps to explain how a decline in some participants’ scores may be indications they are re-visiting old issues at new levels of complexity rather than as indications of regression.

**Similarities in Levels of Complexity**

For purposes of illustrating the similarities among the theories of Hunt (1971), King and Kitchener (1994), Rest, Narvaez, Bebeau & Thoma (1999b), and Kegan’s (1982), I have borrowed Schroder, Driver and Streufert’s (1967, as cited by Joyce, Weil, & Showers, 1992, p. 95) four levels of “integrative complexity” – low, moderate, moderately high and high -- to organize my discussion of the theories.

**The Low Level of Complexity**

At the first and lowest level, an individual is a dualist, engaging in black/white thinking. Schroder and associates describe low complexity as “categorical,” that is the individual is able to see things in categories, but not across categories. The person lacks the “conceptual apparatus” to generate alternatives (Schroder et al., 1967, as quoted by
Joyce et al., 1992, p. 95). Consequently, people at this stage attempt to minimize conflict and ambiguity, sometimes resolving it by quickly reaching conclusions. This description applies to Hunt's first stage (Stage A), King and Kitchener's pre-reflective stage, Rest's preconventional stage, and Kegan's Imperial stage (Table 2.1).

The basic characteristics of the low level of complexity, as described by the theories, are summarized in Table 2.1. Since Kegan's first stage – Impulsive – does not describe most adult learners, the column devoted to Kegan begins with the second stage, Imperial. Likewise, Rest et al. (1999b) begins with the personal interest schema, which was formerly referred to as pre-conventional thinking, stages 2 and 3; it appears that stage 1 was dropped.

Hunt (1971) described three levels of conceptual development and allowed for half-stages between levels when he created the Paragraph Completion Method (PCM)\textsuperscript{4} to measure conceptual development. According to Hunt, Butler, Noy, and Rosser (1978), conceptual level is defined "in terms of (1) increasing conceptual complexity as indicated by discrimination, differentiation, and integration and (2) increasing interpersonal maturity as indicated by self-definition and self-other relations" (p. 3). Stage A, the low conceptual level, is characterized by concrete thinking, a preference for a high degree of structure, and appreciation of authority. For individuals at this stage, rules are rigid.

\textsuperscript{4} The Paragraph Completion Method accurately refers to the way the test is completed; in other places, the PCM is called the Conceptual Level Test (CLT) or the Paragraph Completion Test (PCT).
<table>
<thead>
<tr>
<th>Conceptual level (Hunt, 1971)</th>
<th>Reflective Judgment (King &amp; Kitchener, 1994)</th>
<th>Moral reasoning (Rest et al., 1999b)</th>
<th>Subject/Object theory (Kegan, 1982)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low complexity – Stage A</strong></td>
<td>Pre-reflective: stages 1, 2, &amp; 3</td>
<td>Personal Interest schema (formerly Pre-conventional Stages 2 &amp; 3)</td>
<td>Second level of consciousness: Imperial.</td>
</tr>
<tr>
<td>Concrete thinking</td>
<td>Stage 1 &amp; 2: single category system. Concrete, dualistic thinking. Stage 3: transitional stage</td>
<td>Concrete thinking.</td>
<td>Concrete thinking. Sees things in categories, but not across categories.</td>
</tr>
<tr>
<td>Prefers doing things one way. Inflexible; unable to adapt easily.</td>
<td>Knowledge is certain. Stage 3: beginning to see different points of view.</td>
<td>Inflexible; unable to adapt easily.</td>
<td>Cannot hold multiple points of view at one time.</td>
</tr>
<tr>
<td>Values authority</td>
<td>Stages 1 &amp; 2. Authority is right. Stage 3- may see authority as stating opinion.</td>
<td>Stage 3: focus on individual’s concern for maintaining good relationships.</td>
<td>Sees school and family as authorities.</td>
</tr>
</tbody>
</table>

There are obvious similarities between Hunt’s Stage A and the pre-reflective stage described by King and Kitchener (1994) in their Reflective Judgment Model (RJM). In his comparative analysis of several theories of intellectual development, Boonyaprakob (2002) found that the RJM and conceptual level theory share “common general theoretical assumptions... about information, knowledge, and problems” (p. 213). Created to explain how people frame problems and justify their beliefs, the RJM is based on Perry’s (1970) psychological model of college students’ cognitive and ethical
development and Dewey's (1933) emphasis on ill-structured problems. King and Kitchener (1994) use the term *reflective* to "describe the reasoning characteristics" (p. xvi) of people at the higher stages in their model. Reflective Judgment involves examining one's assumptions, "integrating and evaluating data" (King & Kitchener, 1994, p. xvi), connecting the data to theory and previous opinions, and arriving at a defensible, reasonable solution. King and Kitchener (1994) consider reflective judgments to begin "with an awareness of uncertainty" (p. xvi), and their model focuses on how people wrestle with ill-structured problems. To measure students' growth in reflective judgment, King and Kitchener created the Reflective Judgment Interview, a structured interview whose answers can be quantified.

King and Kitchener (1994) describe three categories in the Reflective Judgment Model (RJM), and each category has two or more stages. The first is the pre-reflective category, and it is comprised of three stages. Stage 1 is a "single-category system" (p. 51); at this stage, individuals cannot understand that "two people can disagree about an issue" (p. 50). Stage 2 represents a dualist epistemology, dependent upon authority for right answers. Although individuals understand there are alternative points of view, they hold that only one view can be right. At stage 3—a transitional stage—while individuals still prefer concrete knowledge, they recognize that even the authorities might not know the truth, and they are likely to defend beliefs as personal opinions. Research using the RJI indicates that many college students exhibit characteristics of Stage 3 (pre-reflective). The movement to stage 4 (quasi-reflective thinking) is considered a major cognitive change.
Rest, Narvaez, Bebeau, & Thoma (1999a, 1999b) based their theory of moral development on Kohlberg's theory. Like Kohlberg, they emphasize cognition and the need to "understand how the person is making sense of the world" (Rest et al., 1999b, p.1). They also accept Kohlberg's notion that the "basic categories of morality [like justice or rights] are self-constructed by the individual" (Rest et al., 1999b, p.1), and, like Kohlberg, they view development as moving from simple to more complex. However, Rest and his associates departed from Kohlberg's notions of stages, adopted a Four Component Model of Moral Development, and began to describe development in moral judgment in terms of schema.

Moral judgment is one of the four components in the model proposed by Rest et al. (1999b). Rest, Thoma, and Edwards (1997) define moral judgment as:

a psychological construct that characterizes the process by which people determine that one course of action in a particular situation is morally right and another course of action is wrong. Moral judgment involves defining what the moral issues are, how conflicts among parties are to be settled, and the rationale for deciding on a course of action. (p. 5)

Development in moral judgment means "acquiring schemas as solutions for creating a societywide system of cooperation" (p. 111). Rest and associates identified three schemas: personal interest, maintaining norms, and post-conventional. In reformulating their concept of moral development in terms of schemas, they stopped using Kohlberg's terminology. What were formerly described in Kohlbergian terms as stages 2 and 3 (pre-conventional thinking) are now "fused as 'Personal interest' items" (Rest et al. 1999b, p. 94). They use the term "maintaining norms" for stage 4 only thinking (p. 93), and stages 5 and 6 are now merged into post-conventional thinking.
The Personal Interest schema, the least complex schema, is characterized by self-interest (1999a; 1999b). Since Rest et al. (1999b) do not elaborate on this schema in their more recent work, some description for this schema is drawn from Rest's (1994) descriptions of stages 2 and 3. For an individual at this level of complexity, rules are rigid; authority and structure are paramount (Rest, 1994), which is also the case with the lowest stages described by Hunt (1971) and King and Kitchener (1994).

Kegan (1982) describes his subject/object theory as neo-Piagetian, but he departs from theories of development that emphasize differentiation and follows the lead of biologists who explain adaptation as “a matter of differentiation and integration” (p. 5). He views development as a sequence of movements from differentiation to integration to differentiation in an alternating pattern.

Aiming to include the tension between inclusion and separation in his theory, Kegan (1982) uses a spiral or helix to depict his model of development. He describes developmental stages as “markers” of “those periods of relative balance in the lifelong process of evolution” (p. 114). The helix illustrates how “we revisit old issues,” but doing so does not constitute a regression because we revisit them “at a whole new level of complexity” (p. 109). What appears to be regression for some people may be not a case of “going back” but a “coming through – to a new integration, a new direction” (p. 267). While acknowledging there are limitations to his helix picture, Kegan (1982) points out that it has the advantage of showing that individuals “move back and forth in the struggle with this lifelong tension” (p. 108) and that they are always a bit unbalanced and thus vulnerable. As a blend of cognitive developmental theory and psychoanalytic theory,
Kegan's subject/object theory attempts to explain not only cognitive development, but also interpersonal and intrapersonal development. His model also helped to explain some fluctuations in test results in this study.

For Kegan, the evolutionary movement is the process of letting go of something that is "subject" in order to integrate it and to move forward. Expressed in simple terms, those things to which individuals are "subject" are things that have control over them; "object" refers to things over which they have some control. For example, at the most basic level of consciousness, the Impulsive Self, the individuals are subject to, or controlled by, their impulses. At the next level of consciousness (Imperial), the impulses become "object"; that is, individuals can reflect upon and control impulses.

There are five levels of consciousness in Kegan's subject/object theory: Impulsive Self, Imperial Self, Interpersonal Self, Institutional Self, and Inter-individual Self. Since the Impulsive stage describes children under age six, it is not discussed further. At the Imperial level of consciousness (the Imperial Self), one is subject to one's needs, meaning one cannot "distinguish one's needs from oneself" (Kegan, 1994, p. 30). People at this level are concrete thinkers, reason "according to cause and effect" (Kegan, 1994, p. 30), and are unable to think abstractly. While they can acknowledge the existence of more than one point of view, they cannot hold more than one point of view at a time. They are subject to their own needs and preferences. The Imperial Self is a period of differentiation, moving away from embeddedness in their impulses toward seeing themselves as unique individuals. Although I referred to Kegan's theory for a better

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5 Other developmentalists, like Mentkowski et. al., (2000) use a spiral model of development.

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understanding of the participants’ scores on the assessments, I did not use Kegan’s subject-object interview in my study.

*The Moderate Level of Complexity*

In Schroder et al.’s scheme (1967, as cited by Joyce et al., 1992), individuals at the moderate level of complexity are able to see alternatives because they have developed the “conceptual apparatus” to generate alternatives (p. 95). The basic characteristics of the moderate level of complexity are summarized in Table 2.2.

Table 2.2
*Moderate Level of Complexity*

<table>
<thead>
<tr>
<th>Stage B</th>
<th>Stages 4 Quasi-reflective</th>
<th>Second Schema: Maintaining norms</th>
<th>Third level: Interpersonal</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Hunt, 1971)</td>
<td>(King &amp; Kitchener, 1994)</td>
<td>(Rest et al., 1999b)</td>
<td>(Kegan, 1982) Period of integration.</td>
</tr>
<tr>
<td>Operates at both concrete &amp; abstract levels.</td>
<td>Begins to understand knowledge as abstraction.</td>
<td>Maintaining status quo, existing roles, &amp; social order.</td>
<td>Subject to the “interpersonal concordance, mutuality” (p. 164)</td>
</tr>
<tr>
<td>Aware of problem solving strategies, but may have difficulty defining the problem.</td>
<td>Offers reasons &amp; evidence to justify beliefs, but gives only one side. May have difficulty defining the problem.</td>
<td>Values harmony. May have difficulty defining the problem due to need to preserve established order.</td>
<td>May make decisions based on feelings. Characterized by cross-categorical thinking.</td>
</tr>
<tr>
<td>Aware of feelings.</td>
<td>May be aware of ways feelings influence judgment</td>
<td>Oriented to society; duty oriented.</td>
<td>Aware of own interests, needs, but not subject to them.</td>
</tr>
<tr>
<td>Increased tolerance of conflict &amp; uncertainty. Conformist.</td>
<td>Knowledge is uncertain. Increased tolerance of uncertainty &amp; conflict.</td>
<td>Fear that chaos will result if authority or social norms are challenged. Conformist.</td>
<td>Responds to relationships. Likely to conform.</td>
</tr>
</tbody>
</table>

6 The Imperial Self is usually associated with children over age six and adolescents; however, developmental stages do not always coincide with age.
In Hunt’s model of conceptual level, individuals at the moderate conceptual level (Stage B) can operate at both the concrete and abstract conceptual levels. They are aware of more strategies for problem solving and more aware of feelings, as well. This level is also characterized by increased tolerance of ambiguity, and independent thinking (Sprinthall, Sprinthall, & Oja, 1998). Nevertheless, this stage is a “dependent, conforming stage” (Hunt & Sullivan, 1974, p. 209).

In the King and Kitchener (1994) Reflective Judgment model, individuals at the first stage in the quasi-reflective period (stage 4) begin to understand knowledge as an abstraction. At stage 4 they recognize that knowledge is uncertain and they can offer reasons and evidence to justify their beliefs; however, they choose only the evidence that supports their beliefs.

In Rest et al.’s (1999b) moral reasoning model, the moderate level of complexity consists of maintaining norms, an element of the conventional way of thinking. The elements of this schema includes a “need for norms,” so people can act without debating every action; a “societywide scope,” “uniform, categorical application,” “partial reciprocity”, and “duty orientation” to laws or religious codes (p. 38). “Partial reciprocity” means individuals obey laws and expect others to do so; it is partial, rather than full reciprocity, because not everyone benefits equitably from the law. An individual at this level may value social order and harmony over larger principles of cooperation, and s/he is likely to make moral decisions that reflect those values.

Rest et al. (1999b) depart from Kohlberg and his emphasis on principles of justice. Gilligan (1981, as cited by Pascarella & Terrenzini, 1991) objected to Kohlberg’s
stages because she felt he ignored women's ways of thinking about moral dilemmas. She opposed his pitting law and order against caring relationships, arguing that care and justice need not be opposing principles. While Gilligan's own study has been criticized for generalizing from a small sample, her objections, among others, to Kohlberg's stages led Rest et al. (1999a; 1999b) to revise their theory to include the distinction between macro (societal) and micromoral (personal) issues and to revise the Defining Issues Test. Several studies using the DIT have demonstrated there are no significant differences in the ways men and women respond to moral dilemmas (McNeel, 1994; Rest, 1994).

At the third level of consciousness in Kegan's subject/object theory, the Interpersonal Self, individuals are able to think abstractly, to think across categories, and to consider hypothetical situations (Kegan, 1982, 1994). Kegan (1982) compares the interpersonal stage to Piaget's early formal operations and Kohlberg's stage 4, "interpersonal concordance" (p. 190). People at this level are more empathetic and can 'internalize another's point of view" (1994, p. 30), but they are subject to their relationships and are influenced by other's views of them. The Interpersonal Self is in a period of integration, having moved away from a focus on the unique self to a focus on relationships with others.

*The Moderately High Level of Complexity*

The moderately high level is a transitional level, and some models described here, like Rest et al. (1999b), do not explicitly include it. However, it can be assumed there is a transitional period between stages. Schroder et al. (1967, as cited by Joyce et al, 1992) characterize the level of moderately high complexity as one of openness to multiple
perspectives where an individual is open to alternatives even after making a decision.

S/he is able to reflect on his/her own behaviors and to view them from different perspectives; consequently, s/he is able to adapt and adjust to many situations. Schroder et al. refer to the individual’s ability for “adaptive utilization of alternate schemata” (as quoted by Joyce et al, 1992, p. 95). The basic characteristics of the moderately high level of complexity are summarized in Table 2.3.

Table 2.3

<table>
<thead>
<tr>
<th></th>
<th>Stage 5: (King &amp; Kitchener, 1994)</th>
<th>(Rest et al, 1999b) Assesses a transitional phase between maintaining norms &amp; post-conventional.</th>
<th>4th level: Institutional (Kegan, 1982)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exhibits mostly quasi-reflective thinking, but exhibits some reflective thinking.</td>
<td>Movement from social order as the organizing principle to “primacy of moral criteria” (p. 41).</td>
<td>A period of differentiation.</td>
</tr>
<tr>
<td>(Hunt, 1971)</td>
<td>Knowledge is uncertain &amp; contextualized.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Moderately high: a transitional level)</td>
<td></td>
<td>Can think in terms of complex systems. Oriented to society.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More inclined to examine own assumptions.</td>
<td>Person is disposed to critical thinking &amp; Reflective Judgment.</td>
<td>Open to criticism.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Capable of independent thinking.</td>
</tr>
</tbody>
</table>

Hunt allowed for half stages, and the moderately high conceptual level would be the half-stage between Stages B and C. Thus, an individual at a moderately high level is likely to exhibit characteristics of both Stages B and C. There is movement toward abstract thinking, increased ability to adapt to changes in the environment, and improved tolerance for stress.

At stage 5 in the Reflective Judgment Model, individuals view knowledge as uncertain, but it is contextualized to the point that it is “context bound” (King &
Kitchener, 1994, p. 62). This means the knower justifies beliefs within a particular context by whatever rules he or she has constructed for inquiry within that context. He or she has not yet developed the ability to compare abstractions in different contexts.

There is no stage in Rest’s moral reasoning theory that directly corresponds to a moderately high stage. It seems logical to assume that individuals in transition from maintaining norms to post-conventional thinking shift from viewing law as the organizing principle of cooperation to seeing that “rights and duties are based on sharable ideals for organizing cooperation in society” (Rest et al, 1999b, p. 41).

In Kegan’s (1982, 1994) subject/object theory, he maintains that the complexities of modern life require the fourth level of consciousness, the Institutional Self. At this level, individuals are able to think critically, to reflect on themselves and their learning. They can reason complexly and consider multiple points of view. Kegan (1982) likens the Institutional Self to Piaget’s stage of full formal operations. While engaged in defining themselves as individuals, they are subject to their “independent self-definition” or self-authorship (Kegan, 1982, p. 191). The Institutional Self is in a period of differentiation, having moved away from seeing him/herself in terms of relationships and moving towards self-authorship.

**The High Level of Complexity**

At the highest level of complexity, individuals possess greater abilities for organizing additional schemata in alternate ways so they are very adaptable and have the ability to think abstractly (Schroder et al, as cited by Joyce et al., 1992). The basic characteristics of the highest level of complexity are summarized in Table 2.4.
Table 2.4

**High level of complexity**

<table>
<thead>
<tr>
<th><strong>High level</strong></th>
<th><strong>Stage C</strong> (Hunt, 1971)</th>
<th><strong>Stages 6 &amp; 7</strong></th>
<th><strong>Third Schema:</strong> Post-conventional (Rest et al, 1999b) Formerly stages 5 &amp; 6. Essentially the P% score.</th>
<th><strong>Fifth order of consciousness:</strong> Inter-individual. (Kegan, 1982) Period of integration.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility &amp; adaptability</td>
<td>Understands knowing to be active, constructive practice</td>
<td>Stage 5: Decisions based on consensus-building procedures; a collaborative approach.</td>
<td>Nurtures capacity for interdependent self-definition</td>
<td></td>
</tr>
<tr>
<td>Able to see experiences from multiple perspectives.</td>
<td>Stage 7: Knowledge is uncertain but understandable in relationship to context and evidence.</td>
<td>Stage 6: Decisions based on ideals &amp; principles.</td>
<td>Dialectical thinking.</td>
<td></td>
</tr>
</tbody>
</table>

High conceptual level is characterized by abstract thinking, adaptability to changes in the environment, tolerance for stress, flexibility, and the ability to examine
experiences from more than one perspective (Sprinthall, Sprinthall, & Oja, 1998). Hunt and Sullivan (1974) described this stage as “an independent self-reliant stage” (p. 209).

In the Reflective Judgment model, the highest level of integrative complexity occurs during the Reflective period (stages 6 and 7). At stage 6 individuals believe that knowing is a constructive practice requiring the knower to play an active role. They recognize that knowledge is uncertain but understand that knowledge “must be understood in relationship to context and evidence” (King & Kitchener, 1994, p. 67). They justify beliefs by comparing evidence from different perspectives and evaluating it. At stage 7 individuals believe that knowledge is constructed through a “process of reasonable inquiry” (p. 71) and that it is possible to discern the differences in “truth value” (p. 70). Few people achieve stage 7.

The highest level of integrative complexity in Rest’s moral reasoning theory (1994) is the post-conventional period of thinking (formerly stages 5 and 6). The P% score indicating reasoning at the post-conventional level is considered to be an indicator of principled reasoning because it is based upon ideals and principles that define how “rational and impartial people would ideally organize cooperation” (1994, p. 5) in a way that balances cooperation and group rights with autonomy and individual rights. The four elements of post-conventional schema are “primacy of moral criteria,” “appeal to an ideal,” “sharable ideals,” and “full reciprocity” (Rest et al., 1999b, p. 42). Full reciprocity recognizes that laws can be biased; at the highest level of complexity, moral purposes, not conventions, are the basis for determining duties and rights.
Few people achieve the fifth level of consciousness, the Inter-individual self, in Kegan's subject/object theory. At this level of consciousness, individuals are able to think across systems and to consider paradoxes and contradictions. They are capable of forming relationships without losing the sense of unique self, of collaborating with others to create "a vision, mission, or purpose" (Kegan, 1994, p. 322). This is the highest level of integration in Kegan's model.

In summary, tracing the hierarchy of stages in development as described by these theories emphasizes the similarities among them. In all four models, the individual's way of knowing moves from the concrete to the abstract, from simple to complex, from self centered to other centered. Higher is better (Reiman & Thies-Sprinthall, 1998) because people at more complex levels are better able to define, handle, and resolve problems across domains and to work cooperatively with others. Another important similarity in the theories is the emphasis on conflict or problems, incongruity or ambiguity, anomalies or discrepancies as stimuli for growth. Such "knowledge disturbances" have been a major focus of developmental inquiry (Oja & Reiman, 1998, p. 474). Three instruments used in this study, Hunt's Paragraph Completion Method (PCM), King and Kitchener's Reflective Judgment Interview (RJI), and Rest et al.'s Defining Issues Test (DIT-2), assume that growth is stimulated by such "knowledge disturbances."

**Some Limitations of Stage Theories and Theorists' Responses**

There are limitations to stage theories of development. As Hunt and Sullivan (1974) have noted, developmental theories are always "incomplete, selective, and arbitrary," and thus tentative (p. 207); no one theory by itself is sufficient. In response to
criticisms of stage theory, some theorists of adult development have modified stage
theory, especially in regard to age, by introducing the notion of hard and soft stages. King
and Kitchener (1994) found “that age by itself does not predict growth in reflective
judgment” (Oja & Reiman, 1998, p. 466); they found education and professional
development were more predictive of growth than age (King & Kitchener, 1994; Wood,
1994). Rest (1994) also found age was not a sufficient predictor of moral development.

King and Kitchener (1994) and Rest et al. (1999a; 1999b) differ from Piaget’s
stage theory in that they do not hold that individuals are “in” one stage or another.
Rather, they subscribe to a notion of soft stages meaning that an individual may show
signs of being at more than one stage at any given time; a range of behaviors may be
exhibited by the individual. King and Kitchener base their ideas on Fischer’s dynamic
skills theory that says, “Dynamic skills are not fixed but vary across several levels (and
many steps)” (Bidell & Fischer, 1997, p. 216). A developmental range is “defined as the
range of skill levels between a person’s optimal level and functional level of performance
in a domain” (Bidell & Fischer, 1997, p. 216). Like Bidell and Fischer, King and
Kitchener distinguish between a person’s functional level and his/her optimal level. The
functional level is that at which the person usually acts when there is no special
environmental support; the optimal level is that at which s/he is capable of acting “under
“optimal conditions,” defined as “including an alert state, a familiar context, [and]
practice with the task,” among others (Bidell & Fischer, 1997, p. 216). This study
assumed the existence of soft stages and accepted the concept of functional and optimal
levels of performance.
Rest (1994) acknowledged that no stage analysis is totally satisfactory because it is “analysis at the very fundamental level of conception” (p. 8). In their last book, Rest et al. (1999b) went beyond distinguishing between soft and hard stages. They argued that stages of cognitive development are not necessarily universal, that development can follow different paths. They view developmental assessment not as “a matter of putting an individual into one stage, but rather a matter of assessing the degree to which the individual uses various types of thinking” (Rest et al. 1999b, p. 55). The intent of the instruments used in this study appears to be consistent with this view of assessing development.

Rest and his associates (1999a; 1999b) point out a second problem with stage theory: it ignores other psychological processes that may impact cognition and moral judgment. Arguing that morality is a “multifaceted phenomenon” (Rest, 1994, p. 22), Rest proposed a Four Component model of moral development: moral sensitivity, moral judgment, moral motivation, and moral character. Since only one component of the model – moral judgment – is relevant to this study, this literature review does not further discuss the four-component model.

In order to distinguish their theory from hard stage theories such as Kohlberg’s, and to describe what the Defining Issues Test (DIT) measures, Rest et al. (1999b) began to refer to their theory as schema theory. They “reformulate[d] Kohlberg’s six stages into three basic schemas” (p. 12) and proposed that the “cognitive structures assessed by the DIT” are “schema like” (p. 136).7 A schema allows individuals to respond quickly to a

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7 Rest et al. acknowledge that their use of the word schema is not the conventional use of the term.
stimulus by identifying it, "chunk[ing] an appropriate unit," filling in missing information, and leading the individual toward a goal, like solving a problem (Rest et al., 1999b, p. 136). Schemas are "not defined in terms of different mental operations" but as "general content representations of the world" (Rest et al., 1999b, p. 136). Moral schema differ from schema in cognition research by being more abstract. While they do not claim that schemas "portray all the cognition necessary" for moral reasoning, Rest and associates (1999b) do claim that schemas "describe the developmental aspect of moral judgment" at its most abstract level (p. 12).

Regardless of what words are used to describe levels of complexity – positions, levels, steps, stages, phases or schemas – the consensus appears to be that people are never "in" a stage; rather they are always in motion, exhibiting characteristics of various stages. Kegan (1982) refers to the "motion of evolution" (p. 77) and asserts that people are always in motion; he sees each stage as being an "evolutionary truce" (p. 108). In all of the models described here, the "mechanisms of developmental change are Piagetian"; new knowledge and "assumptions about knowledge develop through assimilation and accommodation of existing cognitive structures as the individuals interact with the environment" (Hofer & Pintrich, 1997, p. 101).

In spite of some limitations of stage theories, the strengths of the modified theories outweigh the limitations, especially when multiple theories are linked. Stage theory provides a convenient, although limited, way of describing individuals' movement from less complex to more complex thinking. One of the strengths of stage theories is the

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8 For a full discussion of how the DIT measures schemas, see Chapter 6 in Rest et al., 1999b.
attention to affective outcomes as well as cognitive ones. As one example, Oja and
Reiman (1998) refer to the emotional dissonance experienced during the developmental
process. A second strength of stage theories is that “the stage and structure paradigm
accommodates both quantitative and qualitative research models” (Oja & Reiman, 1998,
p. 473), and this study made use of both methods of inquiry.

Research Using the PCM, RJI, DIT-2

_Hunt’s Paragraph Completion Method (PCM)_

Many studies of adults, particularly teachers, were done using the PCM during the
1970’s. Later, Reiman and Thies-Sprinthall (1993) used the PCM and DIT in their 1987
study comparing the cognitive-structural development of two groups of teachers. One
group participated in a program that included guided reflection in order to increase the
teachers’ cognitive complexity and moral reasoning. The comparison group participated
in a training program other than the guided reflection curriculum. The results of the PCM
and DIT indicated “large positive gains over the 6-month intervention” (Reiman & Thies-
Sprinthall, 1993, p. 183). In a second study, Reiman and Thies-Sprinthall (1993) found
that teacher trainees who began with low to moderate scores showed more growth than
did trainees who began the program with high scores.

Zigler (1993) used the PCM and the DIT to measure growth of educational
administration students who participated in a seven-week workshop designed to promote
development. He found no “significant statistical difference” (p. 13) between the pre-
and post-test scores on the PCM or DIT. It is worth noting that in Zigler’s study the
intervention was less than one-third as long as that of Reiman and Thies-Sprinthall.

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Baker-Brown, Ballard, Black, DeVries, Suedfeld, and Tetlock (1992) report that some researchers have suggested revising the PCM in various ways. They reported that the “preferred procedure” for administering the PCM, as of 1992, was to increase the time from three minutes per stem to 10 minutes and to reduce the number of stems used in order to “avoid subject fatigue and boredom” (p. 404). In the research I examined, the researchers were still using the original directions to write for a total of 15 minutes on five stems.

**Reflective Judgment Interview (RJI)**

King and Kitchener (1994) have conducted many studies of “cognitive and conceptual development” in adults (Oja & Reiman, 1998, p. 465), and their research has been supported by Wood (1994) who did a secondary analysis of claims regarding the Reflective Judgment Interview (RJI). In their book, King and Kitchener (1994) summarized over 15 years of “theory building and research” on the Reflective Judgment Model and the RJI. They examined data from six longitudinal studies conducted between 1983 and 1990 that represented 241 participants ranging from high school aged students to graduate students. The studies conducted over a period of six months or more showed significant growth, but even the three and four-month long studies showed some growth. Their research showed a trend of increasing scores for each year of education, and this trend held true for both traditional and non-traditional students. King and Kitchener summarized five studies (representing a total of 131 non-traditional students) that indicated a pattern of development in non-traditional students similar to that of traditional students, i.e. the scores increased with the year in school, not with age. “[A]dult students
do not appear to be dramatically different” from traditional age students in terms of reflective thinking (p. 170).

In 20 cross-sectional studies using the RJI format and scoring procedures, freshman, in general, scored at stages 3 and 4 (high pre-reflective, early quasi-reflective stage). Most freshmen did not reach conclusions based on evidence, although some freshmen were beginning to accept the idea that knowledge is not certain. The scores of upper-classmen, on the other hand, placed them mostly in stage 4 (quasi-reflective) and some at stage 5 (quasi-reflective). King and Kitchener point out that a difference of a half stage might appear minor, but it represents significant change in the students’ reasoning and reflective judgment.

King and Kitchener claim that most environments do not provide support for optimal performance, and consequently most people remain at the functional level. Lynch and Kitchener (1989, as cited by Kitchener & King, 1990) found that “even under conditions designed to elicit the highest stage of reasoning of which people are capable, individuals are seldom able to produce reasoning that is more than one stage above their typical response” (p. 166). However, Kroll (1992a) presented “convincing evidence” (King & Kitchener, 1994, p. 173) that college classes “structured to stimulate questioning” (p. 167) could promote growth in reflective thinking. Kroll (1992a) asked freshman history students to read conflicting accounts of the incident at Hue, Vietnam, and to “present the best case” they could for what really happened. Students’ writing indicated developmental changes in their thinking over the course of the semester. Overall, there appears to be conflicting evidence whether a classroom environment can
make a difference in students' growth as reflective thinkers, a situation worthy of further investigation.

Wood's (1994) secondary analysis of 15 out of 25 studies of the RJI available at the time represented 1334 participants; he also did an analysis of four out of five longitudinal studies that represented another 1671 participants. He was able to replicate previous findings that performance on the RJI increases with educational level. Further research showed that the range of scores shrunk and the level of stage scores rose with each year in school (Wood, Kitchener & Jensen, 2002).

A few researchers, beginning with Davison et al. (1980, as cited by Wood, 1994), have found modest correlations between the RJI and the Defining Issues Test (DIT). King and Kitchener (1994) attribute this expected correlation to the "structural similarity between the development of reflective judgment (conceptions of knowledge) and the development of moral reasoning (conceptions of morality)" (p. 209). They acknowledge that while the "developmental pathways" are similar, reflective judgment and moral judgment may be affected by different experiences "along each pathway" (p. 209)

*The Defining Issues Test - 2*

Rest and others using the Defining Issues Test (DIT) have made five main points about moral judgment. First, although age is a factor in moral development, DIT scores are influenced more by level of education than by age.9 Rest (1994) conducted a longitudinal study of students from high school through graduate school and documented the trend "from less complex to more complex judgment in the domain of moral

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9 Note the similarity to Kitchener and King's findings.
reasoning” (Oja & Reiman, 1998, p. 467). Rest’s (1994) analysis of the results of P% scores of 2,886 participants for educational level revealed that education is “250 times more powerful” than age (Rest, 1994, p. 14). The DIT-2 manual (Rest & Narvaez, 1998) reports that in general, junior high students earn P% scores in the 20’s, senior high students earn scores in the 30’s, and college students earn scores in the 40’s; students in professional graduate programs are more likely to score in the 50’s, and doctoral students in philosophy and psychology programs are more likely to score in the 60’s and above. People’s scores tend to plateau when they discontinue their education. Rest (1994) says that education is a good predictor because people in college “are more invested in their own development (than those who don’t go to college), and the college environment stimulates and reinforces their development” (p. 15).

A second finding of the longitudinal study is that, contrary to Gilligan’s claim that Kohlberg’s theory favored males, females at all levels of education achieved slightly higher P% scores on the DIT, but “gender accounts for only 0.5% of the variance in DIT scores” (Rest, 1994, p. 14).

Third, the longitudinal study also indicated that students in various cultures undergo similar developmental stages. Research with the DIT has been done in over 40 countries, and in all countries, the DIT scores increased with educational level (Rest, 1994).

A fourth finding was that educational interventions made a difference, but they made more of a difference with adults than with children or adolescents. Schaeffi, Rest, and Thoma (1985, as cited by Rest, 1994) did a meta-analysis of 56 moral intervention
programs and found them to be effective in promoting moral judgment as measured by the DIT. They reported an effect size of 0.4, a moderate effect but “typical in power of the effectiveness of college programs” (Rest, 1994, p. 20). Rest, Thoma, and Edwards (1997) summarized four studies including Penn (1990) where the effect sizes ranged from a high of 1.25 on Penn’s study to a low of .31 in Self and Baldwin’s study (1994, as cited by Rest et al., 1997). The average effect size in those four studies was .63, a moderately large effect. An overview of studies with students shows that graduate students show more developmental growth than younger students, such as the junior high school students.

When McNeel (1994) investigated the moral development of college students, his longitudinal and cross-sectional studies indicated that college “has a powerful effect on growth in principled reasoning (p. 34). The average effect size for “principled reasoning” equaled the effect size for “subject matter knowledge (.84)”. Pascarella and Terenzini (1991) reported that the DIT was a more powerful measure of college student cognitive-structural growth than were attitude surveys and other types of measurements. In this study, the DIT-2 appeared to be the most sensitive instrument for measuring cognitive growth.

A fifth finding was that the DIT has been useful in assessing ethical development in a number of professions, including nursing (Duckett & Ryden, 1994), teaching (Chang, 1994), counseling (Sprinthall, 1994), dentistry (Bebeau, 1994) and medicine (Self & Baldwin, 1994, all as cited by Rest & Narvaez, 1994). According to Rest et al. (1999b) the DIT predicted performance for some professions, such as some “aspects of teachers’
professional lives” (p. 106). In a review of several empirical studies, Ponemon and Gabhart (1993, as cited by Oja & Reiman, 1998) found, among other things, that ethical reasoning may determine how professionals make judgments about issues such as confidentiality. “Several hundred studies” (Rest, 1994, p. 21) have addressed the question whether the DIT score predicts moral behavior. Rest, Thoma, and Edward (1997) reported on a study by McColgan, Rest, and Pruitt (1983) in which 22 matched pairs of pre-delinquent and non-delinquent participants took the DIT. Pre-delinquent was defined as students who “exhibited behavior problems in school” (p. 21). The P% scores distinguished the two groups after participants were matched on other variables. Reviews of these studies show that although the DIT was linked with measures of behavior, it was not a strong link. This is one reason Rest was motivated to expand his theory of moral development to include four components. Other psychological processes, besides moral judgment, he reasoned, are at work in making moral judgments that are not measured by the DIT.

Another change in the DIT-2 has been in the scoring index, from using the P% (principled reasoning) score to using the N-2 score, a hybrid index of three schemas: personal interests, maintaining norms, and principled reasoning. The shift to the N-2 score reinforces the notion that “there are no ‘pure’ type people; rather people are mixes of schemas” (Rest et al., 1999a, p. 312). As a hybrid index, the N-2 index does not indicate the extent of the schema mix; two participants could have the same N-2 score with very different mixes of schemas” (p. 312). Since this shift in scoring occurred
recently, little research is available that reports N-2 scores; therefore, both P% and N-2 scores, are reported in this study.

Studies of Role-taking and The Teaching and Learning Framework

Several of the studies that applied the theories of Hunt (1971) or Rest (1994) have been role-taking studies. Role-taking studies require a person to take on a new role with increased responsibilities and to learn new skills; such role-taking provides the disequilibrium necessary for growth. Some examples of role-taking include teaching, mentoring, collaborative action projects, service learning, and tutoring (Reiman & Oja, 2001), all roles demanding social interaction. Early role-taking studies, such as that conducted by Oja and Sprinthall (1978), “showed that cognitive structural growth could be promoted” through deliberate interventions (Oja & Reiman, 1998, p. 475), and several studies in the past twenty years have confirmed that finding (Reiman & Oja, 2001). The intervention, initially referred to as Deliberate Psychological Education (DPE) (Cognetta, 1977), consisted of a structured curriculum that included a role-taking experience, guided reflection, support and challenge. Since the early 80’s, the DPE has come to be known as the Teaching and Learning Framework (Reiman & Thies-Sprinthall, 1998).

The Teaching and Learning Framework has two components: an instructional repertoire developed by Joyce and Showers (1988) and conditions for growth described by Sprinthall, Reiman and Thies-Sprinthall (1998) (as cited by Reiman & Thies-Sprinthall 1998). The instructional repertoire consists of four parts: (a) the theories that inform practice, (b) demonstrations of teaching techniques by experienced teachers, (c)
practice in applying the techniques along with prompt feedback on how well they were applied, and (d) coaching to help new teachers to adapt and generalize the learning. The developmental conditions are those specified in the DPE: role-taking, guided reflection, a balance between the roletaking experience and reflection, continuity of the experience, and support and challenge. Reiman and Thies-Sprinthall (1998) found that neither role-taking nor reflection alone was enough to promote development; rather, a balance is needed between experience and reflection. In order to allow for a "continuous interplay between the experience and reflection", continuity is important (Oja & Reiman, 1998, p. 474). Although the amount of time per week does not have to be long, the role must be assumed for a minimum of four months or one semester in any study of development. The current study met the minimum requirement for continuity – one four-month semester.

To test the effectiveness of the framework, several studies were conducted between 1983 and 1998 in which structural-developmental change was the dependent variable, and the independent variable or treatment was the Teaching and Learning Framework (Oja & Reiman, 1998). Reiman and Oja (2001) conducted a meta-analysis and calculated the effect sizes of treatments used in 19 role-taking studies spanning a period of 30 years. These studies of role-taking utilized the Hunt Conceptual Level Test, the Loevinger Sentence Completion Test (SCT), \(^{10}\) and either the Kohlberg Moral Judgment Interview (MJI) or the Rest DIT. The majority of studies used two measures, indicating a trend among developmental psychologists to look at concurrent development.

\(^{10}\) Loevinger's theory and test will not be discussed since I did not use it in my study.
in more than one domain. Half of the studies were quasi-experimental, and the others were experimental studies.

Reiman and Oja’s calculations indicate that taking on a new role with guided reflection within the Teaching and Learning Framework does promote cognitive, social and moral development. The average effect size for the 10 studies that used Hunt’s CLT or CCI was +.50, indicating a moderate effect of the treatment on conceptual development. For the 17 studies that used Kohlberg’s MJI or Rest’s DIT, the average effect size was +.96, indicating that taking on a new role and engaging in integrated inquiry had a large effect on ethical development.

More recently, Senne and Rikard (2003) conducted an intervention study modeled on the Teaching and Learning Framework. In three quasi-experimental studies in which the participants were physical education teacher candidates the dependent variable was cognitive-structural change and the independent variable was an intervention that included guided reflection. The first two studies were each one semester in length, while the third study lasted three semesters. Senne and Rikard did not find significant gains in the first two studies; however, they found the three-semester intervention, in which there was a gain of 10 points in the mean P% score on the DIT-2, to be growth producing. One of the insights they gained was that the one-semester internship produced disequilibrium and the portfolio added to the disequilibrium, so there was more disequilibrium than participants could effectively handle. Senne and Rikard found little difference pre to post-test on the one-semester intervention, and concluded that a one semester intervention was “counterproductive rather than growth producing” (p. 13).
In the current study, the Teaching and Learning Framework was the basis for the Tutor Development course in which the participants were enrolled. (See Appendix C, Adapting the Teaching and Learning Framework for the Tutor Development course.) Like Senne and Rikard's studies, my study was field-based study in which the treatment was the Teaching and Learning Framework. Although the results of their study were not published until I had completed my study, their findings were helpful in analyzing data from the quantitative part of my study.

Summary of Stage Theories and Supporting Studies

The theoretical framework and supporting studies indicate that higher levels of development are desirable for teachers and others who assume an instructional role. Higher is better because at more complex levels of development, individuals are better able to detect conflict and define the problem; they can be flexible and adapt instructional approaches to the learner and are consequently more effective. They can better tolerate uncertainty and ambiguity, and they are more disposed to critical thinking and reflective judgment. From the theoretical framework, it can be inferred that tutors should be encouraged to develop these qualities and that a course based on the Teaching and Learning Framework is an appropriate mechanism for encouraging such development. In this study, it was assumed that evidence of the above qualities could be observed in the tutors' writing, their speech, and their performance.

The Epigenetic Landscape

Given the limitations of stage theories, they may not explain what happens in tutors' experience to impact change. In the qualitative part of the study, I looked beyond
the quantitative measures to explore what happened in tutors’ experiences to influence growth. The Epigenetic Landscape (Fischer & Bidell, 1991) is included here as a justification for exploring several aspects of the tutors’ experience.

Epigenesis is the interactionist perspective found in biology that asserts three systems shape development: an individual’s genetic endowment, the social and physical environment, and the self-regulation of the organism. Like the stage theories that have been described, epigenesis is an organismic theory that assumes individuals play an active role in their development. The Epigenetic Landscape, as described by Fischer and Bidell (1991), is a neo-Piagetian constructivist model that incorporates these three systems of development, and proposes that changes may occur in more than one system. Moreover, “changes in one system [may] create new conditions” for development (Bidell & Fischer, 1997, p. 209). When interactions among the three systems result in experiences of “difference, discrepancy, anomaly” (Kegan, 1994, p. 210), disequilibrium occurs and prompts the individual to assimilate or accommodate. Through self-regulation, a process of self-correction, a person makes changes to his or her beliefs or processes in order to accommodate new ones. If the individual chooses to ignore the new information and there is no integration of new skills and ideas with genetic attributes, prior knowledge, and social and environmental conditions, development does not take place. The Epigenetic Landscape provided a theoretical context for examining

11 I recognize that Bidell and Fischer based their model on the third phase of Piaget’s theory while stage theories are based on Phase 2; however, the Epigenetic Landscape offers a theoretical context for examining the tutors’ experience more fully in order to address the second purpose of this study.

12 Note: I am continuing to use the definition of disequilibrium presented earlier in chapter 2.
social, environmental, and individual differences in the tutors’ experiences which may
have impacted their development.

Vygotsky and Research about Tutors

_Vygotsky_

Unlike Piaget who focused on the individual’s role in the environment, Vygotsky
focused on social interactions. Since peer tutoring is a social activity, it is “more fully
understood through a social interactionist…. view of cognitive development” such as
Vygotsky’s view (Topping, 1996, p. 324)\(^ {13}\). At first glance, including both Piaget and
Vygotsky in this theoretical framework might appear to be contradictory; however, there
are “many points of agreement and similarities of approach found in the two theories”
(Bidell, 1988, p. 329). Bidell points out that perhaps the most appropriate basis for
comparison between Piaget and Vygotsky is their dialectical approach, meaning that
concepts, phenomena, organisms or processes are examined for relationships from
multiple perspectives, rather than from a dualist perspective that may rely upon formal
logic.\(^ {14}\) A dialectical conception, which assumes that organic processes are complex,
provides a way to understand complexity (Bidell, 1988). Exploring the complexities of
the tutoring experience was one of the goals of this study. Piaget’s and Vygotsky’s
theories may be “considered as two paradigms of distinct historical development,” but
they are not incompatible (Bidell, 1988, p. 336). Rather, the two theories differ in their
emphasis or focus (Rogoff, 1988). I believe it is a push-pull relationship in that a certain

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\(^ {13}\) Topping reviewed the literature on peer tutoring; he did not conduct his own study.

\(^ {14}\) Rogoff (1988) points out there are “different opinions regarding the definition of dialectics” (p. 347). I
am using Bidell’s definition.
developmental level is necessary for some learning, but on-going development is promoted by learning, and development may be arrested if learning ceases. Learning prepares us for the next stage of development.

Vygotsky (1987) proposed that educators consider two levels of development: the actual developmental level – i.e. what the individual already knows and can do alone -- and the “level of performance that he [or she] achieves in collaboration” with an advanced learner (p 209). The term “advanced learner” is used here because “developmental processes stimulated by learning” can be observed in adults as well as children (Tharp & Gallimore, 1988, p. 31). The difference between an individual’s actual level and what s/he can do with assistance constitutes the “Zone of Proximal Development” [ZPD] (Vygotsky, 1987, p. 209). The tutor works with the tutee within the ZPD (Oja & Reiman, 1998, p. 473)15; however, a tutee’s learning is limited by the previous knowledge base, intellectual ability, and current developmental level. The limits of intellectual ability appear to be Vygotsky’s acknowledgement of the role of innate qualities in the developmental process.

Discourse is central to tutoring, and, as Vygotsky observed, discourse is essential to development (Oja & Reiman, 1998). Tutors are continually engaged in discourse with tutees that is valuable to both tutors and tutees (Topping, 1996). Tutors deepen their understanding of the subject matter by reorganizing it and verbalizing it, and tutees benefit by collaborating with tutors in the reconstruction of the subject matter. In order to

15 The similarity between the ZPD and King & Kitchener’s (1994) range of functional to optional development is notable.
formulate questions to facilitate tutees’ learning, tutors must have a good grasp of the material; thus, a tutor’s ability to verbalize the material and to pose questions are indicators of the tutor’s level of development.

Research about Effective Tutoring

Wood and Wood (1996) found that “a common set of principles governs tutoring” (p. 5), including the concept of the ZPD and the notion of scaffolding. Paraphrasing Rogoff (1990), Wood and Wood describe the role of the tutor as bridging the gap between the learners’ current knowledge and the knowledge needed to perform a new task. When tutors employ good tutoring strategies, they provide “guided learning by doing” (Merrill et al, 1995, p. 316), and they provide the scaffolding for new learning (Lepper, Drake & O’Donnell-Johnson, 1997; Wood & Wood, 1996). In this section, I describe the tutoring behaviors that, according to previous research into tutoring and teaching practice, constitute good tutoring practice. The behaviors included on the observation checklist of tutoring behaviors used in this study were drawn from previous studies cited in this section.

First, in order for tutors to establish rapport and engage the tutee’s trust, tutors must be accepting of the tutee’s attitudes (Johnson, 1995; Mann, 1993; Reiman & Thies-Sprinthall, 1998), feelings (Rabow, Chin & Fahimian, 1999), and level of development (Mullin, 1998). The importance of acceptance of attitude and feelings is consistent with the increase in attention to “holistic views of learning in which thinking, feeling, and relating to others are integrated” (Baxter-Magolda & Terenzini, 2002).
Second, since new learning builds upon prior knowledge, it is important for tutors to determine the tutees' current understanding of the task and relevant information (Ceprano, 1995; Nelson, 1995; Tharp & Gallimore, 1988; Vygotsky, 1987).

Third, the goal(s) for a tutorial should be negotiated by the tutor and tutee (Ritter, 2000) rather than assuming that the tutor and tutee have the same goal(s) for the tutorial. If the tutor sets a goal without involving the tutee, the tutorial will be tutor centered, rather than student centered (Fletcher, 1995), and tutor-centered tutorials too often ignore the tutee's interests and concerns (Wingate, 2000). When the tutor and tutee collaborate to set goals, "there's a better chance for mutual input and understanding" (Macauley, 2000, p. 3). Furthermore, when the tutorial runs according to the tutor's agenda rather than the tutee's, it is less likely to lead to independent learning (self-regulation). On the other hand, when they collaborate, the goals can shift and be re-negotiated as the tutee moves from "other regulation to self-regulation" (Tharp & Gallimore, 1988, p. 35).

Fourth, active, reflective listening is an important skill for tutors to develop so they can ensure meaningful dialogue rather than a one-way monologue (Mann, 1993; Reiman & Thies-Sprinthall, 1998; Sheets, 1994). Paraphrasing the tutee or reflecting back to him/her what was heard are two ways a tutor can indicate his/her understanding of the tutee's talk and facilitate better communication.

Fifth, tutors are encouraged to use instructional techniques that appeal to more than one modality: auditory, kinesthetic, and visual. Although most tutors recognize that tutees learn differently and may learn better through their dominant modality, tutors tend to tutor in the ways they prefer to learn. Deliberately including tutoring methods that
appeal to different modalities increases the likelihood that tutors will tap into the tutee’s learning style.

Sixth, in general, indirect tutoring strategies are preferred to directive strategies (Lepper, et al., 1997). Using “guided participation” (Rogoff, 1990) rather than direct instruction, tutors ensure that tutees play an active part in their learning (Wood & Wood, 1996). Giving positive reinforcement (Flanders, 1970, as cited by Reiman & Thies-Sprinthall, 1998; Johnson 1995; Rabow et al, 1999), asking questions (Flanders, 1970, as cited by Reiman & Thies-Sprinthall, 1998; Johnson, 1995), and providing corrective feedback (Merrill et al, 1995) are considered to be indirect instructional techniques. Other non-directive strategies include modeling processes (Baxter-Magolda & Terenzini, 2002; Ekard & Staben, 2000; Reiman & Thies-Sprinthall, 1998; Sheets, 1994) and engaging tutees in “think alouds” (Hock, Deshler, & Schumaker, 1999; Tharp & Gallimore, 1988). Teaching the tutees what questions to ask themselves enables them to become more independent. When tutees know what questions to ask themselves, they are able to structure the task themselves (Tharp & Gallimore, 1988). “[C]onsciously reconjuring the voice of a tutor is an effective self-control technique” (Tharp & Gallimore, 1988, p. 37).

Although non-directive strategies are considered better than directive strategies because they encourage the tutee’s involvement in the learning process, there are instances where directive strategies, such as demonstrating, offering cues and direction, explaining and providing structure are not only preferable, but necessary (Reiman & Thies-Sprinthall, 1998). Wood and Wood (1996) coined the term “contingent teaching”
(p. 7) meaning the tutor offers more help when the learner first experiences difficulty and withdraws help as the learner becomes more competent. While they encourage contingent teaching, Wood and Wood acknowledge that in practice it is “hard to sustain” (p. 7). Working within the ZPD and applying contingency teaching assume some ability on the part of the tutor to “read” the level at which a tutee is functioning and to adapt instruction to that level. Contingent teaching is a developmental notion similar to Hunt’s (1971; Hunt & Sullivan, 1974) notion of adaptability and flexibility where the teacher/tutor is able to determine the student’s level and adapt to it. Hunt and Sullivan (1974) found that teachers at higher developmental levels exhibited the ability to hear and see the students’ needs and respond to them.

Among the students who may need more structure and direction early in the tutoring relationship are English Language Learners (Powers, 1993), students with disabilities, and students who are at lower levels of cognitive development (Reiman & Thies-Sprinthall, 1998). Powers (1993) makes the case that second language learners may become confused if a tutor continually asks questions. The confusion may be due in part to cultural differences when the tutee has experienced only direct instruction. The tutee is dependent upon the tutor to mediate not only the assignment but also the cultural context for the assignment and the tutorial.

Some students with disabilities and students who are at a lower level of development may initially need more structure and direction (Reiman & Thies-Sprinthall, 1993). Giving explanations has been found to improve the achievement in “low-ability students”; giving answers without providing explanations has been found to lead to
“decreased achievement among medium-ability students” (Fuchs, Fuchs, Bentz, Phillips, & Hamlett, 1994, p. 75). The challenge for the tutor is to recognize when and to what extent it is appropriate to use more directive strategies and to know when to withdraw some support so the tutee begins to take more responsibility for his/her learning.

It should be noted that the philosophy of most Learning Centers and Writing Centers emphasizes that a tutor’s focus should be on helping the tutee become a better student (Hock et al, 1999), for example in mathematics, or a better writer (Bruffee, 1978) rather than just assisting the student with an assignment. “[T]he intended outcome of one to one instructional tutoring is the development of skilled and independent learners” (Hock et al., 1999, p. 106).

*Studies of Tutor Training Programs*

Some studies of tutors have been done to determine the effectiveness of tutor training courses or programs (Brandwein & DeVittis, 1985; Cognetta, 1977; Mann, 1993, Sheets, 1994). Brandwein and DiVittis (1985) devised a multi-part instrument based on the concept that interpersonal communication is the key to “effective peer tutoring” (p. 18), a concept shared by Ross MacDonald (1994), author of *The Master Tutor*. The questionnaire included (1) demographics, (2) a quantitative section consisting of multiple choice questions about tutoring situations, (3) questions about the “impact of various exercises” (p. 18), and a section on perceived changes in themselves. The quantitative section presented tutoring situations in both mathematics and writing and required tutors to make decisions as to how to respond. Twelve trained college undergraduate tutors

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55 Most of MacDonald’s studies have focused on tutees, not tutors, but his textbook is a “how to” guide for college tutors.

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and 13 untrained tutors completed the questionnaire. Using both parametric and nonparametric statistical techniques to analyze the data, Brandwein and DiVittis found that “trained tutors performed better than the untrained tutors” (p. 19). They argued that their measure could be adapted to “most situations” (p. 15) because peer tutor training programs tend to share many components, such as “role-playing, written essays, self and peer critiquing of essays, and the discussion of assigned readings” (p. 17). The tutor development course in which participants in this study were enrolled included all of these components except the peer critiquing of essays.

Like Brandwein and DiVittis, Sheets (1994) created instruments to assess the effectiveness of tutor training: the Tutor Situational Free Response Assessment (TSFRA) and the Tutor Situational Objective Response Assessment (TSORA). Sheets explored the relationships between the tutors’ scores on the assessments and their “abilities to construct an appropriate course of action” (p. 39). Seventy tutors from 10 community colleges and one vocational training center made up the sample. Tutors were grouped by the amount of training their institutions provide, from zero up to 16 hours. Finding “significant differences” (p. 91) between the groups’ scores on the post tests, Sheets concluded that training made a difference in tutors ability to take an appropriate course of action.

Two studies used the tutors’ cognitive development as a measure of effectiveness of their programs. Cognetta (1977) and Mann (1993) followed a model of Deliberate Psychological Education (DPE) (also known as the Teaching and Learning Framework). Cognetta applied a “quasi-experimental, nonequivalent control group design” (p. 23) to
study the ethical development of 17 high school seniors enrolled in a cross-age teaching (tutoring) class. He assessed development by administering pre- and post-tests of Loevinger's (1976, as cited by Cognetta, 1977) Sentence Completion Test (SCT) and the DIT. The tutors' pre- and post-test scores on the SCT and the DIT were compared to the scores of seniors in an English class. The results indicated growth on both measures for the tutors while the students in the comparison group showed "no significant increase" on either measure (Cognetta, 1977, p. 24).

To evaluate a tutor training program built on the Teaching and Learning Framework, Mann (1993) combined quantitative and qualitative methods in her intervention study. In a quasi-experimental study, she investigated the cognitive and social development of two groups of college students (N = 29) who had taken on the role of tutoring high school students in science. The experimental group attended the tutor training seminar based on the Teaching and Learning Framework while the comparison group did not. To assess tutors' cognitive and social growth, Mann administered the Life Environmental Preference Scale (LEP) based on the theory of Perry (1970). To measure the tutors' thinking about tutoring, Mann administered Brandwein and Devittis' (1985) questionnaire. The effect size was +.31, indicating that the trained tutors showed more cognitive complexity at the end of the term. Mann also measured tutors' performance by coding tutor/tutee interactions according to Flanders' (1970, as cited by Reiman & Thies-Sprinthall, 1998) guidelines.

In addition, Mann (1993, 1994) assigned weekly journals which were used as a means of encouraging reflection on the experience. For her qualitative analysis of the
journals, she used the results of the LEP inventory and Brandwein and DiVittis' measure of tutoring behaviors to categorize trained tutors by the degree of improvement in performance and the increase in developmental level. Her three categories were low gain, high gain, and moderate gain. Mann then analyzed each group's weekly journals entries and final essays from the tutor training course for "recurrent themes" and "patterns of individual development" (p. 66) to see if tutors at different levels of development "conceptualized their experiences of tutoring differently" (p. 66). Viewing writing as a "reflection of mental functioning," (p. 115), Mann used the journal writing to chart each tutor's development.

The two dominant themes that emerged from Mann's analysis were evaluation and change. Evaluation was the predominant theme in journals and final essays among tutors in the low gain group. While high gain tutors also made evaluative statements, they differed from the low gain group's statements in that they emphasized both the tutee's and tutor's feelings. In other words, high gain tutors were more sensitive to the inter-personal dimension of tutoring (Mann, 1993, 1994). Change was the predominant theme in most of the final essays, but there were "qualitative differences" (Mann, 1993, p. 129) between the essays of the low gain and high gain groups. Tutors who experienced the most gain also experienced the most change, and Mann observed that the tutors experiencing the most change were those who identified problems. Low gain tutors, who were less attuned to any changes, seemed to be unable to detect problems that arose in the tutorials; consequently, they did not experience conflict. The journal entries revealed that the high and moderate gain tutors took a problem-solving approach to their
tutoring sessions. They attempted to "match students' needs with appropriate strategies and to adopt alternative approaches as needed" (Mann, 1993, p. 142).

Mann concluded that attending the tutor training program led to increased cognitive growth and better performance. The "tutors' personal development was related to their ability to be flexible in their approach to tutoring" and to their ability to resolve problems (p. 144). She claimed peer tutoring to be a "role-taking activity that, when properly monitored and supervised, can foster the cognitive and social growth of tutors" (p. 1).

Summary

The current study built on the studies by Cognetta (1977) and Mann (1993). Like them, this study investigated changes in tutors' cognitive-structural levels and changes in tutoring practices during their first semester as tutors and as participants in a program based on the Teaching and Learning Framework. My study differed from those of Cognetta or Mann in that different or additional instruments were used, and the tutees were college students, not high school students. In addition, their studies were quasi-experimental studies with non-equivalent comparison groups, and my study was a one group pretest-post-test design.

Another way in which my study differed was that journal prompts were structured and the categories for which levels of complexity were assessed were pre-defined. From Hunt (1971; Hunt et al, 1978) I took the category of flexibility and adaptability. The second category, tolerance of uncertainty, was drawn from both Hunt (1971) and King and Kitchener (1994). From King and Kitchener (1994), I took the disposition to critical
thinking/reflective judgment, which included the ability to consider multiple points of view and to examine one’s assumptions and beliefs. The fourth category, the ability to detect a problem and take steps to resolve it, was inspired by Mann’s (1993) study and Dewey’s (1933) idea that reflective thinking occurred only when an ill-structured problem existed. Most problems that arise in tutoring are ill-structured and require thoughtful reflection.

Finally, the tutoring behaviors evaluated in my study were drawn from many studies cited in this chapter. I combined criteria used in several studies in order to create a comprehensive list of tutoring behaviors that have been observed in one or more studies.

In this chapter I summarized the theories that guided my study and led to my choice of instruments and the research that supports these theories. The theories and related research informed my analysis and discussion and some theories provided the theoretical framework for the case studies. In the next chapter I describe the methods used in the study.
CHAPTER III

METHODS USED IN THE QUANTITATIVE PART OF THE STUDY

The two purposes for this descriptive study of undergraduate tutors’ development were to investigate how tutors change during their first semester of taking on the role as tutors and participating in a program of reflective practice; and to explore what happens in tutors’ experience to impact growth. There were four research questions: (1) Are there cognitive-structural changes? (2) Are there changes in the complexity of the tutors’ thinking about tutoring? (3) Are there changes in tutoring practice? (4) What are the mechanisms of change? The quantitative part of the study addressed the first three questions. Since the quantitative measures could not adequately address the fourth question, a qualitative analysis of all the data was to done to further explore what happened in the tutors’ experience to impact growth. The qualitative part of the study is presented in Chapter 6.

In this chapter, I describe the methods used for gathering quantitative data to investigate tutors’ growth from several perspectives in order to address some of the complexities of development. Data were triangulated by using multiple types of data – three quantitative instruments, journals, and checklists of tutoring behaviors. This chapter is divided into four sections, one per research question. It concludes with a description of how the quantitative data were analyzed and the threats to the study.
Assumptions of the Study

This study made the following assumptions: (1) By applying cognitive-structural theory to this study, I made the assumptions contained in the definition of developmental theory (see Chapter 2). (2) The use of journals as a measure of tutors’ complexity of thinking about tutoring assumed that individuals’ reasoning and the complexity of their thinking could be inferred from their writing.

Setting

The setting for this study was the Learning Center at a small urban commuter college that is part of a larger land-grant university in the Northeast. One mission of the college is to provide access to a university education for people who might not otherwise attend the university. The college provides access through a special admissions program for under-prepared students and a summer program for English Speakers of Other Languages. Of course, many well-prepared students also attend the college. As a consequence of two special programs and the college’s location in the state’s largest city, the student population of about 800 degree students and 1100 continuing education students is more diverse in age, in preparedness, and ethnicity than the university’s population in general, although the majority of students (about 90%) are Caucasian. Most of the students carry at least part-time jobs, and many of them work full time, so it is not unusual for students at this college to take six to eight years to complete their baccalaureate degrees.

The Learning Center (LC), a resource for all students enrolled in college courses, has adopted the motto of the National Association of Developmental Education: Helping
under-prepared students prepare, prepared students advance, advanced students excel (www.nade.net/b4_motto.htm). The primary mission of the LC is to provide assistance in reading, writing in all disciplines, study skills, and mathematics. In addition, the LC provides services to students with disabilities and coordinates services for English Language Learners (ELL).

The majority of the Learning Center staff consists of peer tutors who are hired, trained, and supervised collaboratively by the Director (the investigator) and Assistant Director of the Learning Center. The tutor training program is certified by CRLA to certify tutors at the regular, advanced, and master tutor levels.

The quantitative assessments used in this study were administered in the Learning Center during tutor orientation or in the Tutor Development class. Personal interviews took place in the office of the Learning Center Director or Assistant Director, and tutorials were video-taped in the Learning Center. Some study groups were audio-taped in classrooms at the college.

Participants

A convenience sample of undergraduate peer tutors – seven females and two males – were recruited for this study. All nine recruits were hired as tutors for pay, and they enrolled in a 15 week Tutor Development class team taught by the Director (who was the researcher) and the Assistant Director of the Learning Center during the fall semester of 2002. In order to be a tutor, the recruits were required to have at least a B in the subjects they tutored and to have received a recommendation from a teacher. Since they all came highly recommended by instructors and had achieved a
grade of “A” in the courses they tutored, I assumed a high intellectual ability for all participants. In addition, they were screened by means of personal interviews with the Director and Assistant Director of the Learning Center who determined that each participant possessed the interpersonal skills necessary for tutoring. None of the participants had had previous tutoring experience or training.

Participants ranged in age from 20 to 46 and in collegiate experience from non-matriculated students having eight or more credits to seniors in college. The two males and seven females were all non-Hispanic Caucasians. Ages and years in school are summarized in Tables 3.1 and 3.2.

Table 3.1
Ages of Participants

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-20</td>
<td>1</td>
</tr>
<tr>
<td>21-24</td>
<td>2</td>
</tr>
<tr>
<td>25-30</td>
<td>4</td>
</tr>
<tr>
<td>31-35</td>
<td>0</td>
</tr>
<tr>
<td>36-40</td>
<td>1</td>
</tr>
<tr>
<td>41-45</td>
<td>0</td>
</tr>
<tr>
<td>46-50</td>
<td>1</td>
</tr>
</tbody>
</table>

The youngest participant was a 20 year old male, and the oldest participant was a 46 year old female. Although seven out of nine participants were in their 20’s, only three met the usual definition of the traditional college student.

Table 3.2
Participants’ Year in School

<table>
<thead>
<tr>
<th>Year Type</th>
<th>1st year</th>
<th>2nd year</th>
<th>3rd year</th>
<th>4th year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-degree 1st year</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Non-degree Jr. equiv.</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

It is not necessary for a tutor to be a matriculated student as long as s/he is taking courses at the college. Three tutors had not matriculated in Fall 2002. Four tutors, one of whom was not matriculated, were recruited to tutor mathematics.

Most studies and reports of college students, including government surveys, define traditional students as those who are between age 17 and 25.
including Psychological Statistics, college algebra 1 and 2, pre-calculus, and calculus. Five tutors, two of whom were not matriculated, were recruited to tutor writing; one writing tutor also tutored logic.

During the tutor orientation prior to the start of the semester, tutors were invited to participate in the study. They were told the purpose of the study was to investigate ways in which tutors change during their first semester as tutors. As an incentive to participate in the study, a small lottery ($100) was established; all nine peer tutors agreed to participate. The university’s Institutional Research Board (IRB) approved the study and the letter of consent that was collected prior to the start of the study. (See Appendix A, IRB Approval and Letter of consent).

Procedures for Quantitative Methods

Q.1: Cognitive Structural Change

The first research question was: Are there cognitive structural changes? The design of this part of the study was a one group pretest-post test design (Frankel & Wallen, 2000) using three instruments. The independent variable was the roletaking experience consisting of the actual tutoring experience and the tutor development program of reflective practice. The dependent variable was the tutors’ cognitive structural development as measured by the Paragraph Completion Method (PCM), the Defining Issues Test (DIT-2), and the Reflective Judgment Interview (RJI). All participants were expected to demonstrate some growth on all measures. Table 3.3 shows the dates on which the tests were administered.
Table 3.3

Dates of Test Administrations

<table>
<thead>
<tr>
<th>Test</th>
<th>PCM</th>
<th>DIT-2</th>
<th>RJI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>8/26/02</td>
<td>8/26/02</td>
<td>10/22/02 – 10/25/02</td>
</tr>
<tr>
<td>Post 1</td>
<td>12/17/03</td>
<td>12/17/03</td>
<td>4/22/03 – 4/25/03</td>
</tr>
<tr>
<td>Post 2</td>
<td>4/30/03</td>
<td>4/30/03</td>
<td>n/a</td>
</tr>
</tbody>
</table>

The PCM and the DIT-2 were administered during tutor orientation prior to the start of the Fall semester, and the first post-test was administered sixteen weeks later at the end of the semester. The second post-tests were administered near the end of the spring semester. The RJI pre-test was conducted near the middle of the fall semester, and the post-test was conducted six months later. The RJI pre-test was delayed until the investigator completed her training and was certified as an interviewer, so the post-test could not be administered until the following semester. For that reason, the PCM and DIT-2 were also administered in April so scores on all three tests could be compared.

Instruments, Administration and Scoring

The Paragraph Completion Method (PCM). The PCM is a projective device\(^{18}\) created by Hunt and associates (1978) to measure people’s conceptual level “in terms of (1) increasing conceptual complexity as indicated by discrimination, differentiation, and integration and (2) increasing interpersonal maturity as indicated by self-definition and self-other relations” (Hunt et al., 1978, p. 3). The test consists of five stems, and participants are directed to write for about three minutes on each stem. The stems which

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\(^{18}\) Fraenkel & Wallen (2000) define a projective device as “any sort of instrument with a vague stimulus that allows individuals to project their interests, preferences, anxieties, prejudices, needs, and so on through their responses to it... There is room for a wide variety of possible responses” (p. 148).
attempt to elicit respondents' views about structure, authority, and uncertainty, are: (1) “What I think about rules…” (2) “When I am criticized…” (3) “When someone does not agree with me”… (4) “When I am not sure…” (5) “When I am told what to do…”. The responses “are considered to be thought samples,” and they are “scored according to how a person thinks” (Hunt, et al., 1978, p. 2).

The Hunt scoring manual describes “typical” reactions at each stage. There are three stages and an additional three half-stages, thus allowing for scores to range from 0 to 3.0 in increments of .50. A score of 0 is assigned if the person is very self-centered and impulsive or s/he is defensive and withdraws from others. A score of 1 is assigned if the person is sensitive to rules and authority and/or very concerned with social norms. A score of 2 is assigned if the person is open to more than one opinion but is more concerned with his/her own thoughts or feelings. A score of 3 is assigned if the person considers alternatives and weighs the evidence. S/he shows concern for others and how his/her actions might affect others; s/he is willing to accept responsibility for his/her actions. The manual also makes provisions for unscorable responses such as flippant, overly personal, or overly generalized responses. The conceptual level (CL) score is calculated by taking the average of the highest three scores. The bottom two scores are dropped because the score is intended to reflect the best a person is capable of doing. Hunt et al. (1978) refer to this practice as using the “pole vault” principle that allows for the person to respond to some stems at a lower level. No one is required to respond at a high level every time.
The participants' responses for the pre- and post-tests were sent for scoring to two trained scorers who had used the PCM in their doctoral research. Because the trained researchers were not available at the time the second post-test was administered, the second post-test was scored by the investigator who had achieved an 89% rate of agreement with the training manual.

The PCM has been determined to be both valid and reliable. According to Gardiner and Schroder (1972), "The validity has been established in a variety of experimental contexts" (p. 960). This statement is corroborated by Miller's (1981) meta-analysis, and by Reiman and Sprinthall (1998). The PCM has also been shown to be reliable by Gardiner and Schroder (1972) who reported that between the mid-60's and 1972, the PCM had been used in over 100 studies. While Hunt et al. (1978) stated a preference for using the PCM with longitudinal studies because development takes time, Gardiner and Schroder (1972) claimed that the test-retest method could be used to assess reliability over relatively short periods of time with participants whose conceptual level could be expected to be relatively stable, for example, adults returning to college.

The Reflective Judgment Interview. The Reflective Judgment Interview (RJI) consists of four ill-structured problems, a standard set of questions, and probe questions which are addressed to the participant by a trained interviewer. The researcher was trained and certified as an RJI interviewer by Dr. Laura Jensen, a protégé of Karen Kitchener. The interviewer begins by reading an introductory statement explaining the purpose and format of the interview and advises the participant that the interview will be tape-recorded. Each problem is read to the participant in order to reduce the risk of
misunderstandings due to reading comprehension, and the participant follows along using a card on which the problem is written. S/he is asked to give her/his point of view, to justify it, and to respond to six follow-up questions. (See Appendix D, Example of Problems and Dilemmas.) The first question asks the participant to state her/his point of view, but if s/he does not take a position, six probe questions are addressed to the participant in order to discover the person’s “rationale for not taking a point of view and how this is related to his or her assumptions about knowing” (King & Kitchener, 1994, p. 263). The manual directs the interviewer to ask for clarification of any answers that are unclear or ambiguous by asking questions. If a participant “dismisses the controversy” (p. 263), the interviewer is directed to “reframe the controversy in order to retain it” (p. 263). The interviewer’s goal is to elicit answers that will indicate the participant’s functional stage of reflective judgment; according to King and Kitchener, the RJI measures functional, not optimal, level of development.

The answer to each problem was transcribed separately and assigned a participant code number so that the raters were blind to any participant’s answers on different problems and to the date on which answers were given. Transcripts of pre- and post-tests were sent to two trained raters for scoring.

The scoring manual (Kitchener & King, 1985) divides the rules for each of the seven stages in the RJM into two major sections: (1) the person’s view of knowledge and (2) the type of justification offered for the view. The manual makes provisions for unratable responses, but if all responses are ratable, seven scores per problem are assigned and then summarized into a three-digit code. If the problem receives a rating of
only one stage, the same digit is assigned three times; for example, a score of 333 means
the response was rated only at Stage 3. If two stages occur in the ratings, the most
frequent one is used twice in the overall rating; for example a score of 434 means that
stage 4 thinking dominated the response. “This procedure is based on the assumption
that no single stage score best represents the person’s response to that problem” (King &
Kitchener, 1994, p. 265). In this study, all responses to problems were ratable.

Wood (1994) demonstrated the validity and reliability of the Reflective Judgment
Interview. Studies conducted across three types of reliability – inter-rater reliability, test-
retest reliability, and internal consistency – “indicate that the RJI is a reliable measure of
reflective thinking” (King & Kitchener, 1994, p. 14; Wood, 1994).

*The Defining Issues Test.* The Defining Issues Test-2 is defined by Rest, Narvaez,
Bebeau, and Thoma (1999b) as “a device for activating moral schemas. [They] presume
that reading moral dilemmas and the DIT issue statements activate moral schemas (to the
extent that a person has developed them)” (p. 6). The DIT-2 is a paper and pencil
response recognition test in which participants are given an ethical dilemma followed by
incomplete statements, sometimes questions, and “fragments of lines of reasoning” (Rest
et al., 1999b, p.6) about the dilemma. The DIT is categorized as a semi-projective test
because it requires participants to “supply meaning to the items” (p. 6) by both rating and
ranking them. Using the patterns of ratings and rankings, the scorers determine
“estimates of the relative strength of the three schemas: personal interest, maintaining
norms, and post-conventional moral reasoning” (p. 6). (See Appendix D, Examples of
Problems and Dilemmas).
Instruction booklets, answer sheets, and administration guides were obtained from the Center for the Study of Ethical Development. Pre-tests and both post-tests were assigned codes and submitted to the Center for the Study of Ethical Development for scoring at the same time.

The DIT-2 has been shown to be both valid and reliable. The validity for the original DIT has been established in numerous studies according to seven criteria (Rest et al., 1999b). The test has been shortened and revised for clarity, but studies “indicate that the old test (DIT-1) can be replicated” (p.6). Reliability of the DIT has been demonstrated in numerous tests. Rest et al.(1999b) report that the Cronbach alpha “is in the upper .70s/low.80s. Test-retest is about the same” (p.6). In their meta-analysis of roletaking studies, Reiman and Oja (2001) used the P% score, but Rest, Thoma, Narvaez, and Bebeau (1997) now prefer to use the N2 index which, they determined through their own meta-analysis, “outperforms the P index” (p. 498). Since little data has been collected using the N-2 index, this study reported both P% scores and N-2 scores.

Q. 2: Complexity of Thinking about Tutoring

The second research question inquired whether there were changes in the complexity of the participants’ thinking about tutoring in regard to flexibility/adaptability, tolerance of uncertainty or ambiguity, disposition to critical thinking/reflective judgment, and ability to detect and resolve a problem. These four categories are found in the literature written by the three developmental theorists described in Chapter 2. Seven of 14 journal entries for each participant were analyzed

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19 P stands for principled reasoning.
and coded by outside professionals for the presence and level of complexity of these four categories.\textsuperscript{20} The choice of journal entries was based on how well suited the prompts were for the categories to be coded. Journal entries consisted of participants’ descriptions of their tutoring experiences, their conceptions of tutoring and learning, and responses to the readings and activities assigned during the seminar. Some journal prompts were less structured so that tutors could comment on any aspect of the readings and tutoring experience while other prompts were structured in order to elicit tutors’ conceptions of teaching and learning, tutoring, problem solving, critical thinking, their view of the tutor/tutee relationships, and their code of ethics. (See Appendix E, Journal Prompts).

**Coding**

Two outside professionals were trained to code the journals for evidence of the four pre-defined categories: flexibility, tolerance of uncertainty, disposition to critical thinking/reflective judgment, and ability to detect and resolve a problem. The coders were learning assistance professionals trained in writing and study skills. Although both coders had some background in developmental theory, neither one was familiar with the family of theories that guided this study.

To assist coders with identifying the categories and rating complexity, I created a guide listing a range of behaviors for each category. Coders used different colored highlighters to mark the journals, one color for each category. (A detailed description of

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\textsuperscript{20} The participants wrote a total of 14 journal entries. I selected seven entries for coding based on a number of factors: (1) One entry required the tutors to make a visual, rather than a written, representation of their idea, so it was not codable. (2) One prompt was modeled after the RJI, and in a practice session, the outside coders could not make sense of the entry without being trained in the RJI, so it was omitted from coding. (3) The final three entries were a combination of instructors’ feedback on the first 11 entries, and the coders could not distinguish tutors’ comments from instructors.
what each category might look like at different levels of complexity can be found in Appendix F, Categories). Levels of complexity were rated from a low of 1 meaning the participant exhibited a low level of complexity in that category to a high of 5 meaning the participant exhibited very high levels of complexity. Most passages were assigned ratings of 2 or 3, with a few being rated 4. Some passages were initially coded for more than one category because they suggested evidence of more than one quality; however, in the final analysis, raters were asked to choose the dominant category for ratable passages. Raters were expected to achieve 85% inter-rater agreement, but as will be seen in Chapter 4, the rate of agreement fell short of the target rate.

Q. 3: Changes in Tutoring Practice

The third research question investigated changes in tutoring practice as captured on audio-tape and videotape. Tutors whose tutees agreed to be videotaped were filmed in the Learning Center. If tutees did not agree to videotaping, the tutorials or study groups were audio-taped. Tutors were taped twice; for most tutors, the tapes were made at midterm and at the end of the semester. However, in one instance, the tutor did not tape until mid-November, so there were only four weeks between tapings.

Rating

Two professional writing tutors were recruited through the Learning Assistance Association of New England and trained to use a checklist I created for rating the tutors’ practice. Videotapes and audio-tapes were assigned codes consisting of letter and numbers to conceal the tutors’ names and the times at which the tapes were made. However, it is likely that the content of the tutorial indicated whether the tape was made
at mid-semester or at the end of the semester. Audio-tapes (with transcripts) and videotapes were sent to the outside raters at the end of the semester.

The behaviors to be rated were linked to the same four categories (shown below in italics) for which journals were coded and were drawn from previous studies of teaching and tutoring practice. Lepper et al. (1997) drew conclusions about effective tutoring strategies by observing tutors and measuring their effectiveness by examining outcomes for tutees. Although the observation checklist used in this study included some of the qualities of effective tutors reported by Lepper et al., part of the checklist was modeled on tally sheets used by Flanders (1970, as cited in Reiman & Thies-Sprinthall, 1998), Johnson (1995), and Mann (1993) who based her list on Flanders’ categories.

- Tutor was accepting of tutee’s attitudes/feelings (flexibility/adaptability).
- Tutor attempted to assess prior knowledge (adaptability, disposition to reflective judgment, ability to detect problem, tolerance of uncertainty).
- Tutor negotiated a goal for the tutorial with the tutee (flexibility).
- Tutor gave positive reinforcement, asked questions, provided corrective feedback (disposition to reflective judgment, flexibility).
- Tutor provided cues, directions, or explanations (adaptability).
- Tutor used strategies that appealed to different modalities (flexibility).

(See Appendix G for complete checklist.)

Raters were expected to achieve 85% inter-rater reliability for the 18 tapes. No overall “score” was computed for the checklist because (a) the list included both desirable and less desirable behaviors so that viewers or listeners would be alert to them, and (b) the behaviors were not of equal importance to warrant rating on one scale. Rather, the checklist was used as an indication of how often some behaviors (both desirable and undesirable) occurred in the tutorial.
Analysis of Quantitative Data

The simple mean and standard deviation were computed for each administration of the PCM, the RJI, and the DIT-2, and the \( t \) score was computed using data from both the pre- and post-tests. Group means on the pre- and post-test scores on each the three cognitive-developmental instruments were compared to determine what gains (if any) were made on each measure. Since the sample size was small, the group mean scores on each of the three instruments were compared to findings in other studies of adult students. In addition, any relationships among the scores on the three assessments (i.e. similarities or differences in developmental levels) that have been noted in the literature were explored. Individual participants' scores on the PCM and DIT-2 are also reported in Chapter 4 in order to build a profile for each tutor in preparation for the qualitative study.

To analyze scores on coded journals, I compared the group mean scores for each pre-defined category to the scores on the three instruments. Since the categories for the coded journals were drawn from the stage theories on which the three instruments were based, there were some similarities between categories and the qualities being assessed by the instruments. Where there was a similarity between the journal category and a question on the instrument, I explored the scores on the instrument to the journal scores. For example, one question on the PCM – "when I am unsure..." evoked responses that were similar to passages coded for tolerance of uncertainty.

Tutoring behaviors were linked to the pre-defined journal categories to the extent possible; for example, most of the behaviors on the checklist were linked to the category of flexibility. To analyze scores on the video-tapes, I compared scores on tutoring
behaviors to related journal scores. I also examined scores on the three instruments for any relationships to tutoring behaviors. For example, greater flexibility is associated with higher conceptual level scores on the PCM (Reiman & Thies-Sprinthall, 1998).

I relied heavily upon my conceptual framework and previous research with the instruments to interpret the data. By examining results for individual participants and creating a profile of each participant, I saw some differences that helped me to select participants for further study in the qualitative part of the study.

Procedures for Addressing Q.4

Q.4: Mechanisms of Change

The fourth research question which investigated the mechanisms of change was addressed in two ways. First, outside coders did a content analysis of the seven coded journals by marking and counting references to the tutoring experience (T), the Tutor Development course (C), the journal (J), or other experiences (O). Second, the question was addressed in more depth by doing a qualitative analysis of all the data and writing narratives that illustrate differences in the experience of three tutors. The methods for the qualitative analysis are presented in Chapter 6. However, since all tutors were interviewed in anticipation of the qualitative study, the interview process is described here.

Interviews

I conducted three personal interviews with each participant in my office in the Learning Center. Seidman's (1998) series of three semi-structured interviews, each having a specific purpose, provided a guide for the three personal interviews. Following
Seidman's interview format, I asked mainly open-ended questions and encouraged the participants to “reconstruct the experience” (p.9) rather than to remember it because reconstructing the experience involves an interpretation of an event. The interviews were conducted at the beginning of the study, at mid-semester, and at the end of the semester in order to understand the tutors’ experience at various points during the study.

Each interview served a different purpose. The first interview was intended to gather autobiographical background relevant to the tutoring experience (Seidman, 1998) such as information on what brought them to the tutoring experience. The purpose of the second interview was to elicit descriptions of the tutors’ experience up to that point. The purpose of the third interview was to create a time for reflecting on the “meaning of the experience” (Seidman, 1998, p. 12). (See Appendix H, Interview Protocols.) The interviews were audio-taped and transcribed. Although I read and reviewed all interview transcripts, data was drawn only from the transcripts of tutors for whom I wrote narratives.

Threats to Internal Validity, Verification and Reliability

The one-group pretest and posttest design for research question 1 posed several threats to internal validity, including subject characteristics, history, instrument decay, and data collector bias. The possible subject characteristic threats included age, gender, maturation, and educational level. Since I examined each tutor’s individual development, the educational level and age were considered in the data analysis and interpretation. Instrument decay was a problem with the PCM because there was little time between pre- and post-tests, and tutors remembered the prompts and appeared to devote less time to
answering the questions. The risk of data collector bias was minimized by the training I received to administer the RJI and by the use of trained professionals to code the journals and rate the videotapes.

There was a history threat because events occurred during the semester that probably affected the tutors’ responses. For example, some of the participants had very different experiences as tutors and personal issues arose for some tutors that may have affected testing and performance. The history threat is part of the nature of a developmental study such as this one.

Alternative explanations to the conclusions or interpretations represent threats to validity, but using certain verification procedures helped to minimize the threats. The verification procedures used in this study included using outside raters, cross-checking participants’ data, triangulating the data by using multiple types of data, connecting the findings to the theory and previous research. The threat to valid interpretation – i.e. imposing my framework on tutors’ words and actions – was addressed through using outside raters, and the threat to theoretical validity was addressed by identifying “discrepant data” (Maxwell, 1996, p. 90) and exploring alternative explanations in the analysis.

Frankel and Wallen (2000) define reliability as referring to “the consistency of [the researcher’s] inferences over time” (p. 506). Utilizing outside professionals to code journals for predefined categories and outside raters to rate tutoring practice on the taped tutorials were the primary means by which reliability was achieved in this study.
In the next chapter, I present the results of the three instruments used to measure cognitive-structural growth and the results of the two researcher-designed instruments. The qualitative analysis and the narratives are presented in Chapter 6.
CHAPTER IV

RESULTS

In this chapter, the results of the quantitative measures are presented in text and table forms. The descriptive data resulting from each measure are presented separately, but they are grouped around the research question they addressed. Group data are presented first, followed by individual scores when appropriate.

Three instruments – the PCM, RJI, and DIT-2 --were administered to address the first research question: Are there cognitive-structural changes? To address the second research question – Are there changes in the complexity of participants’ thinking about tutoring? -- journals were coded and rated. The third research question – Are there changes in tutoring practice? – was addressed by rating videotapes and audiotapes of tutorials. To address the fourth research question – What are the mechanisms of change? – two approaches were taken. First, a content analysis of journals was made to determine whether the actual tutoring experience, the Tutor Development class, or writing in the journal was a mechanism of change. Second, a qualitative analysis of three tutors’ journals and interview transcripts was done to explore what happens in tutors’ experience to impact growth and to probe the mechanisms of change. The results of the content analysis are presented in this chapter, but the results of the qualitative analysis of all the data are deferred to Chapter 6.

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Results of Instruments

Three measures were used to assess cognitive-structural changes: the Paragraph Completion Method (PCM), the Reflective Judgment Interview (RJI), and the Defining Issues Test (DIT-2). I expected all three measures to show positive changes in cognitive-structural development.

*Paragraph Completion Method (PCM)*

The Paragraph Completion Method (Hunt, et al., 1978) for assessing conceptual level was administered three times: August, December, and April. Two experienced raters who used the Hunt PCM in their own doctoral work rated five stems per tutor on the August and December protocols. The two raters’ initial rate of agreement was only 72%. Since the disagreements were largely over stems numbered two (“When I am criticized”) and four (When I am unsure”), the raters were asked to re-score the responses to those stems. After the stems were re-scored, the raters agreed on 77 responses out of 90 responses, achieving an inter-rater agreement of 86%.

The experienced raters were unavailable to score the April tests. Therefore, I trained myself to score the PCM’s by doing the practice exercises in the scoring manual (Hunt, et al., 1978) several times and achieved an 89% rate of agreement with the manual. The responses were typed and grouped by stem numbers so that I would not recognize the participants in their responses, and I rated the responses four times to see that I agreed with myself. Over the four scorings, I was 90% in agreement with my previous scorings that were done over a period of two months.
This study used the cut-off scores for measuring conceptual level scores set by Reiman (A. J. Reiman, personal communication, August 26, 2003) who, after doing a series of studies with adults, defined the scores as follows:

- 0 -1.79 Low conceptual level
- 1.8 - 2.19 Moderate conceptual level
- 2.2 - 3.0 High conceptual level.

These cut-off points are higher than those established by Hunt and his associates who did most of their research with youth. In this study, as indicated in Table 4.1, the mean conceptual level score on the pre-test was 2.33, and the mean on the first post-test was 2.23. A two-tailed $t$ test for paired samples indicated the decrease in the group means was not significant ($t = .710$). The group mean on the second post test was 2.26, and the decrease between the group means on the pre-test and the second post-test was not significant ($t = .886$). Although there was no positive change as a group in conceptual level, all three group means were in the high conceptual level range.

Group scores, however, do not tell the whole story. Reiman (1988) and Watkins (1995) have defined a gain score of .20 or greater as constituting significant change (as cited by Fachin-Lucas, 1999, p. 80). By that standard, Participants #5, 7, and 9 made significant gains on the first post-test. The non-significant decline in the mean score was due to negative changes for Participants 1, 2, 3, 4, and 8. The outcomes of the three PCM administrations for each participant are presented in Table 4.1.
In August, the PCM scores ranged from 1.92 to 3.0 and in December from 1.5 to 2.83. In April, scores ranged from 1.83 to 3.0. All participants scored in the moderate or high level of complexity on the pre-test, and, although there was a decline for some participants on the first post-test, by the second post-test, all participants again scored in the moderate to high levels of complexity. Overall, the results of the PCM do not indicate growth in conceptual level for the group.

**Reflective Judgment Interview (RJI)**

The Reflective Judgment Interview (RJI) was conducted twice, the pre-test in October and the post-test in April. The RJI, a measure of one aspect of critical thinking, was scored by two certified raters who assigned three numbers to each of the four problems. According to Jensen (1998), “Raters may rate any one problem up to three times” (p. 86). During Round One, the problems are rated independently by the two raters and their results are compared by a third person, in this case, the investigator. If

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the sum of the raters' three scores is within two points of each other, they are considered to be in agreement. When the scores differ by more than two points, the problem is re-submitted to the raters for re-scoring. The re-scoring constitutes Round Two. If the scores are still not within two points of each other, the two raters discuss their scores and agree on a final score; that is considered Round Three.

In this study, the inter-rater agreement on Round One was 90% on four standard problems, and on Round Two, it was 97%. The final two protocols, one responding to the news dilemma and the other responding to the creation and evolution dilemma, were resolved during Round Three, thus reaching 100% agreement. The composite score is the average of the means of the two raters' scores that were considered to be in agreement.

The group means for the pre- and post-tests are presented in Table 4.2. Following Wood's (1994) example, scores are also reported by indicating what stage score occurs most frequently, followed in parentheses by the second most frequent stage.

<table>
<thead>
<tr>
<th>Group mean (N = 9)</th>
<th>RJI pre-test</th>
<th>Most frequent Stages</th>
<th>RJI post-test</th>
<th>Most frequent stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \bar{X} )</td>
<td>3.67</td>
<td>4 (3)</td>
<td>3.74</td>
<td>4 (3)</td>
</tr>
<tr>
<td>SD</td>
<td>.21</td>
<td></td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>( T )</td>
<td></td>
<td></td>
<td>.7785</td>
<td></td>
</tr>
</tbody>
</table>

Because the RJI has not been standardized for individual use, only the group means are reported here. (See Appendix I, Jensen's Letter.) Scores on the RJI pre-test ranged from 3.2 to 4, and on the post-test they ranged from 3.39 to 4.2. The difference
between the group means was not statistically significant. The slight increase (+.07) in the group mean mirrors the fact that six participants improved their scores from pre- to post-test, while three did not. According to King and Kitchener’s (1994) scale, position three is indicative of the pre-reflective stage, and positions four and five are indicative of the quasi-reflective stage. A score of 3.67 suggests a transition from pre-reflective to quasi-reflective thinking and represents a moderate level of complexity.

Although stage four was the most frequent score and stage three was the second most frequent score on both pre- and post-tests, the proportion of stage three scores to stage four scores changed between the pre- and post-tests. On the pre-test, 76 (35%) of the 216 scores assigned (24 per participant), were stage three; 133 (62%) were stage four, and 7 (3%) were stage five. On the post-test, one (1/2%) was stage two, and 62 (29%) were stage three, representing a 6.5% decline in pre-reflective thinking. A decline in stage 3 thinking was accompanied by an increase in stage 4 thinking; 140 (65%) scores were stage four, and 13 (6%) were stage five, representing a 6.5% increase in quasi-reflective thinking. There is some indication from the RJI that participants as a group were beginning to think at higher levels.

*Defining Issues Test-2 (DIT-2)*

The revised Defining Issues Test (Rest & Narvaez, 1998) was administered three times (August, December, and April), and the answer sheets were sent for scoring to The Center for the Study of Ethical Development located at the University of Minnesota. Historically, the results of the DIT have been reported as a P% score, a measure of principled thinking. The P% score can range from 0 to 95, and a higher P% score is
associated with “higher comprehension of moral concepts” (Rest, Narvaez, Bebeau, Thoma, 1999b, p. 76). Currently, the Center prefers to use the N-2 index which is a “hybrid index” (Rest et al, 1999b, p. 96) that has two components, a ranking score that is essentially the P% score, and a rating component that distinguishes the ratings in three schema: Personal Interest (traditionally viewed as Kohlbergian stages 2/3), Maintaining Norms (stage 4), and Postconventional thinking [P%] (5/6). Because most studies using the DIT-2 have reported P% scores, both the N-2 and P% scores are reported here so readers might see the results in the context of other studies, some of which are cited in the literature review. Individual scores and the group means for the P% and N2 scores are presented in Table 4.3.

Table 4.3
DIT-2 Scores

<table>
<thead>
<tr>
<th>n = 9</th>
<th>Pre-test</th>
<th>1st post-test</th>
<th>2nd post-test</th>
<th>Pre-test</th>
<th>1st post-test</th>
<th>2nd post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P%</td>
<td>P%</td>
<td>P%</td>
<td>N-2</td>
<td>N-2</td>
<td>N-2</td>
</tr>
<tr>
<td>#1</td>
<td>76</td>
<td>86</td>
<td>66</td>
<td>69.08</td>
<td>78.11</td>
<td>66.05</td>
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<tr>
<td>#2</td>
<td>46</td>
<td>74</td>
<td>72</td>
<td>41.64</td>
<td>64.03</td>
<td>67.72</td>
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<td>#3</td>
<td>22</td>
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<td>40</td>
<td>30.54</td>
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<td>#4</td>
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<td>76</td>
<td>76</td>
<td>59.46</td>
<td>71.34</td>
<td>71.63</td>
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<td>51.83</td>
<td>36.77</td>
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<td>52.55</td>
<td>49.44</td>
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<td>72</td>
<td>62</td>
<td>65.32</td>
<td>65.16</td>
<td>63.62</td>
</tr>
<tr>
<td>#8</td>
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<td>20</td>
<td>41.38</td>
<td>53.92</td>
<td>27.10</td>
</tr>
<tr>
<td>#9</td>
<td>40</td>
<td>66</td>
<td>62</td>
<td>38.53</td>
<td>52.44</td>
<td>51.11</td>
</tr>
<tr>
<td>Group mean</td>
<td>46</td>
<td>60.67</td>
<td>52.67</td>
<td>45.68</td>
<td>57.12</td>
<td>53.02</td>
</tr>
<tr>
<td>SD</td>
<td>18.6</td>
<td>18.11</td>
<td>18.64</td>
<td>13.51</td>
<td>14.48</td>
<td>14.46</td>
</tr>
<tr>
<td>t</td>
<td>4.274*</td>
<td>1.267</td>
<td>3.6986*</td>
<td>1.8409</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

According to studies by Rest and associates (1997), the P% and N2 indices are “highly correlated in the .90s” (p. 504), but the N-2 index is a better measurement
than the P% score due to its higher Cronbach alpha (Rest, Thoma, Narvaez, & Bebeau, 1997). The increase of 14.67 points in the P% group mean score and 11.44 points in the N-2 group mean score on the first post-test are statistically significant and support the prediction that the tutoring experience would result in cognitive-structural growth, specifically in ethical reasoning. The difference between the pre-test and second post-test of 6.67 points (t = 1.276) in the P% group mean score and 7.34 points in the N-2 group mean score are not significant.

The group mean scores do not tell the whole story, however, because the decline in the mean P% and N-2 scores from the first post-test to second post-test was largely due to the decline in three participants’ scores. While three participants (#1, 5, 8) showed no gain, even a loss, between the pre-test and the second post-test, six participants improved their P% and N-2 scores. As noted earlier, the N-2 index is a composite score, and it is helpful to see how changes in the DIT-2 scores are related to the scores in each schema. Table 4.4 shows individual and group mean scores in all three schema.

The group means on the personal interest schema (pi), associated with lower levels of development, show that with each test administration there was a decline in the use of personal interest as a means of making ethical decisions from 18 to 13.56 to 12.44. This decline was accompanied by an increase in the Maintaining Norms score (associated with a moderate level of development) or the P% score (associated with higher level of development). Similarly, there was a decline in the scores on the Maintaining Norms schema (mtn) between the pre-test and the first post-test from
31.56 to 22.67, while there was an increase in principled reasoning (P%) from 56 to 60.67. The increase in the Maintaining Norms mean score from the first post-test (22.67) to the second post-test (30.67) was accompanied by a decline in the principled reasoning (from 60.67 to 52.67). This shift downward in the mean P% scores on the second post-test was largely due to the decline in scores for participants #1, 5, 8. The scores on all three schema for each participant given in Table 4.4 indicate how the reasoning shifted among the schema on each administration.

<table>
<thead>
<tr>
<th>ID #</th>
<th>Pre-pi</th>
<th>Post1 pi</th>
<th>Post2 pi</th>
<th>Pre-Mtn</th>
<th>Post1 Mtn</th>
<th>Post2 Mtn</th>
<th>Pre P%</th>
<th>Post1 P%</th>
<th>Post2 P%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16</td>
<td>6</td>
<td>12</td>
<td>4</td>
<td>6</td>
<td>16</td>
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<td>7</td>
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<td>12</td>
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<td>X</td>
<td>18</td>
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<td>31.56</td>
<td>22.67</td>
<td>30.67</td>
<td>56</td>
<td>60.67</td>
<td>52.67</td>
</tr>
</tbody>
</table>

Overall, the results of the DIT-2 with an increase in P% scores from pre- to the first post-test support the expectation for participants' growth in ethical reasoning during the first semester in their role as tutors.

Changes in Complexity of Thinking about Tutoring

To assess changes in complexity of thinking about tutoring, seven journal entries per participant, all responding to the same writing prompts, were assessed for presence of four pre-defined categories: (1) flexibility and adaptability (2) tolerance for uncertainty

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(3) disposition to critical thinking, especially reflective judgment (4) ability to detect conflict and define the problem. Two outside professionals who have trained peer tutors coded journal entries for the pre-defined themes and rated them for level of complexity according to a descriptive guide provided by the investigator.

The number of passages coded varied with the participants, with the range being 35 passages for Participants 5 and 9 to 79 passages for Participant 6; the median number of coded passages was 51. In total, 436 passages were coded and rated in 63 journal entries (7 entries for each of nine participants). Raters were asked to color-code for categories and to identify the level of complexity from 1 (low complexity) to 5 (high complexity), with a score of 3 being acceptable for a first semester tutor. Exact agreement required the raters to agree on both the category and the level of complexity. The inter-rater agreement in those cases was 65%; however, as noted in Chapter 3, inter-rater agreement was defined in this study as agreement on the category and agreement within one number on the level of complexity. Where there was agreement on the category within one number (e.g. score of 3 and score of 4), the average of the two scores was used as the final score (3.5) for that passage. Using this definition of inter-rater agreement, the rate was 74%.

Raters agreed on the level of complexity but disagreed on the category in 50 passages (11%). They disagreed on both category and level of complexity on the remaining 65 passages (15%). The group means on each category for each journal entry are reported in Table 4.5. Journal entries are listed in the order in which they were assigned over a 10 week period of time.

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Table 4.5
*Group Means on Categories in Journal Entries*

<table>
<thead>
<tr>
<th>Category</th>
<th>Journal #1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
<th>#6</th>
<th>#7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility/Adaptability</td>
<td>2.88</td>
<td>2.67</td>
<td>2.92</td>
<td>3.16</td>
<td>3.67</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Tolerance of uncertainty</td>
<td>2.45</td>
<td>2.77</td>
<td>3.04</td>
<td>2.64</td>
<td>3.51</td>
<td>3.17</td>
<td>2.67</td>
</tr>
<tr>
<td>Detection of problem</td>
<td>3.08</td>
<td>2.69</td>
<td>2.88</td>
<td>2.79</td>
<td>3</td>
<td>3.5</td>
<td>3.25</td>
</tr>
<tr>
<td>Critical thinking/Reflective Judgment</td>
<td>2.91</td>
<td>2.63</td>
<td>3</td>
<td>2.82</td>
<td>2.75</td>
<td>3.32</td>
<td>3.26</td>
</tr>
</tbody>
</table>

The largest group gain (+.35) was made in critical thinking/reflective judgment.

However, since development in any category was defined as a gain of .5 or more, the gains were not large enough to meet my definition of development in any category.

Ratings fluctuated between journals; while some fluctuation can be attributed to the particular prompt assigned for that week, some fluctuation in the group means of particular categories is due to the range of responses by the nine individual participants. For example, Participant 2 showed a moderately high level of complexity in the area of flexibility and adaptability in five entries, while Participant 3 reached a moderate level of complexity in flexibility in only three entries.

Some writing prompts did not lead to codable passages, although that, too, varied with individual participants. Of the possible 49 category scores per participant, Participant 2 had the most journal scores (45) and Participant 5 had the fewest (35).

Raters had more difficulty agreeing on the categories and ratings in some participants'
entries than in others. (See Appendix J: Participants’ Scores in each Category.) The coded journals did not support the prediction that there would be increases in the complexity of tutors’ thinking about tutoring.

Changes in Tutoring Practice

To assess change in tutoring practice, the investigator created a checklist of tutoring behaviors that included seven desirable (non-directive) behaviors: acceptance of tutee’s attitudes and feelings; assessment of prior knowledge; negotiation of a goal for the tutorial, active listening, positive reinforcement, questioning, and corrective feedback. These behaviors were drawn from criteria used in or derived from previous studies of tutors that are cited in Chapter 2. The checklist also called for an assessment of multi-sensory tutoring, i.e. techniques appealing to visual, auditory, and kinesthetic learners. In addition, the checklist included three directive, less desirable behaviors (Flanders, 1970, as cited by Reiman and Thies-Sprinthall, 1998). (See Appendix G, Checklist of Tutoring Behaviors).

Two professional writing tutors from another institution were trained to use the checklist as a means of rating the tutors’ performance. Six tutors videotaped both the mid-semester and end-of-semester tutorials, and one tutor audio-taped both tutorials. Three tutors submitted one video and one audio-tape each. All audio-tapes were transcribed so the quality of the recording did not interfere with the evaluation of the tutorial. All video and audio tapes were given to the raters at the end of the semester, and each tape was assigned a code so there was no indication which of the two tutorials was taped first. However, the content of some tutorials probably provided clues as to when
the tape was made. Raters used the assigned code on the rating sheets to indicate which
tape they were rating.

The tutors' behaviors were rated on a scale of 5-1 with 1 indicating the behavior
never occurred and 5 indicating it was a frequent behavior. A score of 3 on any behavior
was acceptable. I expected to see an increase in at least three of the seven non-directive
behaviors and a decrease in the directive behaviors. Scores were figured for each
behavior in order to measure change on each variable, but no composite score was
computed.

When raters returned score sheets on one-third of the tapes, I checked for inter­
rater reliability; the inter-rater exact agreement was 78%. Since some disagreement
appeared to be due to a lack of clarity in terms, I provided clarification on the terms, e.g.
the difference between corrective feedback (considered a positive, non-directive
behavior) and providing cues or directions (less desirable, more directive behavior).
Raters were asked to review the tapes on which they differed on more than two criteria
and to rate the remaining two-thirds of the tapes. The final inter-rater agreement was
93%.

Using a gain of .5 as an indicator of notable change in behaviors, as a group,
tutors showed improvement in three of the seven non-directive behaviors: negotiating a
goal for the tutorial (+.61), using questions, (+.61), and providing corrective feedback
(+1.5). The improvement of .5 or more on three non-directive behaviors suggests that
tutors, as a group, were beginning to use more non-directive behaviors at the end of the
semester. Table 4.6 presents the group mean performance ratings.
Table 4.6
*Group Means on Tutoring Behaviors*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mid-semester</th>
<th>End semester</th>
<th>gain/loss</th>
<th>Range Mid-sem</th>
<th>Range end sem.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-directive strategies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>4.22</td>
<td>4.44</td>
<td>0.22</td>
<td>5—2</td>
<td>5—2</td>
</tr>
<tr>
<td>Assess knowledge</td>
<td>3.89</td>
<td>3.78</td>
<td>-0.11</td>
<td>5—2</td>
<td>5—2</td>
</tr>
<tr>
<td>Set goal</td>
<td>3.56</td>
<td>4.17</td>
<td>0.61</td>
<td>5—1</td>
<td>5—1</td>
</tr>
<tr>
<td>Listening</td>
<td>3.94</td>
<td>4.11</td>
<td>0.07</td>
<td>5—3</td>
<td>5—2</td>
</tr>
<tr>
<td>Positive reinforcement</td>
<td>3.06</td>
<td>3.00</td>
<td>-0.06</td>
<td>5—1</td>
<td>5—1</td>
</tr>
<tr>
<td>Questioning</td>
<td>3.61</td>
<td>4.22</td>
<td>0.61</td>
<td>5—2</td>
<td>5—3</td>
</tr>
<tr>
<td>Corrective feedback</td>
<td>1.61</td>
<td>3.11</td>
<td>1.5</td>
<td>4—1</td>
<td>4—2</td>
</tr>
<tr>
<td>Mean for non-direct</td>
<td>3.41</td>
<td>3.83</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>multi-modal tutoring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual</td>
<td>4.43</td>
<td>4.38</td>
<td>-0.05</td>
<td>5—3</td>
<td>5—3</td>
</tr>
<tr>
<td>Auditory</td>
<td>4.67</td>
<td>4.78</td>
<td>0.11</td>
<td>5—3</td>
<td>5—3</td>
</tr>
<tr>
<td>Kinesthetic</td>
<td>3.69</td>
<td>3.75</td>
<td>0.06</td>
<td>5—2</td>
<td>5—2</td>
</tr>
<tr>
<td>Mean for multi-modal tutoring</td>
<td>4.26</td>
<td>4.30</td>
<td>.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Directive strategies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecture or explain</td>
<td>2.06</td>
<td>2.17</td>
<td>0.11</td>
<td>5—1</td>
<td>4—1</td>
</tr>
<tr>
<td>Cues and Directions</td>
<td>3.67</td>
<td>3.39</td>
<td>-0.28</td>
<td>5—3</td>
<td>5—3</td>
</tr>
<tr>
<td>Criticism</td>
<td>1.11</td>
<td>1.00</td>
<td>-0.11</td>
<td>2—1</td>
<td>1—1</td>
</tr>
<tr>
<td>Mean for directive</td>
<td>2.28</td>
<td>2.18</td>
<td>-.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 5 = behavior occurred often; 1 = behavior never occurred.

Changes in individual tutors’ performances reflected group changes in that more tutors improved their performance in the three areas of gain. However, there were notable differences in changes in performance for individual tutors. (See Appendix K: Individual Performance Ratings.) While three participants showed major improvements in tutoring practice, three participants showed a noticeable decline in performance on the desirable behaviors.
Mechanisms of Change

The fourth research question was addressed in two ways. First, the two outside coders did a content analysis of participants' journals in which they counted the number of references to the journal, the tutoring experience, the Tutor Development class, and other experiences. Second, the question was addressed in more depth by the qualitative study and three narratives presented in Chapter 6.

The content analysis was done because I assumed that these primary components of the tutoring experience -- the experience, the tutor class, and the journal -- would impact tutors and that tutors would be more likely to refer to the elements of the experience that most influenced them. The content analysis required the coders to do both a manifest content analysis (i.e. identify specific words like class, seminar, tutoring experience, journal) and a latent analysis (i.e. infer references to the class, actual tutoring experiences, or the journal).

Coders agreed 100% that there were only three explicit references to the journals in the nine participants' journal entries (63 entries in total). They agreed (96%) that there were 87 references to the tutoring experience in all the journal entries, but they did not agree on the number of references to the Tutor Development class. The count ranged from 86 to 103. The content analysis did not provide an adequate answer to the question of the mechanisms of change, and the question was deferred to the qualitative study for further investigation.
Summary

In summary, the results of the study are mixed, with some assessments showing gains and others showing no gain. The group mean scores on the Paragraph Completion Method and the Reflective Judgment Interview did not indicate growth in conceptual level or reflective judgment; however, the scores on the Defining Issues Test (2) indicate there was growth in moral reasoning. Viewed as a group, the tutors exhibited no change in the complexity of their thinking about tutoring. In the area of tutoring practice, there was positive change in only three of the seven non-directive strategies: negotiating a goal for the tutorial, asking questions, and providing corrective feedback. Individual ratings on tutoring practice indicate that some tutors had begun to make improvements in their performance by the end of the semester. The results suggest that certain individuals who take on the role as tutors and participate in a supportive class benefit cognitively and ethically from the experience.
CHAPTER V

DISCUSSION OF RESULTS OF QUANTITATIVE MEASURES

There were two purposes for this study: (1) to investigate the effects on tutors of taking on their new role and participating in a program of reflective practice (2) to explore what happens in tutors’ experience to impact growth. Research questions 1, 2, and 3 addressed specific changes in cognitive-structural development, the complexity of the participants’ thinking about tutoring, and changes in practice. Research question 4, which investigated the mechanisms of change leading to tutors’ development, is addressed by the qualitative study in Chapter 6.

In the quantitative part of the study, tutors’ development was defined as movement toward a higher stage or level on any of the instruments, a trend toward higher scores on the coded journals, and positive changes in tutoring practice. Because each of the instruments used a different scale, the amount of change indicating development varied with the instrument. For research question 1, an increase of .2 in the PCM score is considered by other researchers (Reiman, 1988; Watkins, 1995, as cited by Fachin-Lucas, 1999, p. 80) to be an indication of growth in conceptual level. In this study, the group mean scores were slightly lower on the PCM post-tests than on the pre-test, although the mean scores on all three test administrations were in the high conceptual level.

Rest et al. (1999b) consider movement from a group of ten scores (e.g. the 20’s) to the subsequent group (e.g. 30’s) to be the equivalent of movement to the next stage of
development. For example, the mean N-2 score for college freshmen is 31.05, indicating that personal interest is the primary basis on which they make ethical decisions; in contrast, the mean score for people with a Master of Science degree is 40.56, indicating that maintaining norms (conventional thinking) is the primary basis on which they make ethical decisions (Bebeau & Thoma, 2003, p. 37). The shift from conventional to post-conventional thinking (indicated by P% scores ≥ 50) is considered to be a major shift.

The group mean P% score on the DIT-2 was 46 on the pre-test, and 60.67 on the first post-test, and the group mean N-2 score was 45.68 on the pre-test, and 57.12 on the first post-test, placing this group of tutors at the level of post-conventional thinking.

The RJI scores of tutors in this study indicated that tutors were using mainly stage four (quasi-reflective) thinking, with stage three (pre-reflective) thinking being the second most dominant stage in both the pre- and post-tests. However, the proportion of answers rated at stage 4 to those rated at stage 3 increased from pre- to post-test. King and Kitchener (1994) consider the movement from stage 3 thinking (pre-reflective) to stage 4 thinking (quasi-reflective) to be an important shift in a person’s thinking. So, while the group mean score showed a very small increase, it appears that some tutors were moving toward an increase in stage 4 thinking.

For research question 2, I defined an increase of .5 in any category of the journal ratings to be an indicator of growth in that category and an increase of .5 in at least three categories to be an indicator of growth in the overall complexity of tutors’ thinking about tutoring. Similarly, for research question 3, I defined an increase of .5 in any non-directive tutoring behavior on the observation checklist for tutoring practice to be an
indication of growth in that behavior, and an increase of .5 in three or more behaviors or
an increase in two non-directive behaviors accompanied by a decrease in directive
behaviors to indicate growth in overall tutoring practice.

The results in Chapter 4 suggest that the answer to questions 1, 2, and 3 is that
certain individuals who take on the role as tutors and participate in a supportive class
benefit cognitively and ethically from the experience. For most participants, the change
process initiated by taking on the tutor's role had only begun at the end of the first
semester of the tutoring experience. Question 4 on mechanisms of change was only
minimally addressed at the end of Chapter 4 through a content analysis of tutors' journals
for references to specific components of the tutoring experience: the actual experience of
tutoring, the Tutor Development class, journal writing, or other influences. The initial
analysis suggested that the actual experience of tutoring most impacted growth; however,
a count of references to particular components of the tutoring experience was insufficient
to answer to the fourth question of what happens in tutors' experience to impact growth.

The group results on the three instruments, coded journals and rated audio/video
tapes indicate there are mixed results among the five measures. The differences among
the instruments become most apparent when looking at results for the nine individuals,
rather than for the group. For example, a tutor might show an increase in ethical
reasoning and/or performance, but exhibit no change in the RJI or PCM scores. Others
might demonstrate change in conceptual level or ethical reasoning but not in
performance. In this chapter, I explain some of the differences in results on measures of
cognitive-structural development (Q.1) by looking at the instruments themselves,
previous research with those instruments, and relationships among the scores. In my
analysis of the tutors' scores on coded journals (Q.2) and videotapes (Q.3), I seek to
uncover relationships between the participants' thinking about tutoring and their practice,
and their scores on the instruments.

Q. 1. Different Instruments; Different Results

Three quantitative instruments were used to assess cognitive-structural change,
and the results were sometimes different for each instrument in terms of the level of
complexity. For example, on the second PCM post-test (Hunt et al., 1978), there was a
slight decrease in the group mean, while on the RJI (King & Kitchener, 1994), there was
a minimal group gain of .07 from pre- to post-test, and on the DIT-2, there was a
significant group gain of 12.44 on the N-2 scores between the pre-test and the first post-
test ($t = 3.6986, p < .05$). Although there was a group gain of 8.34 in N-2 scores from the
pre-test to the second post-test, it was not significant, largely due to a decline in scores
for three participants.

In addition to the three instruments, journal entries were coded and audio/video
tapes of tutors' performance were rated. The coded journals indicated little change in the
complexity of the tutors' thinking about tutoring while the tapes suggested tutors
improved their tutoring practice in three non-directive strategies: negotiating a goal for
the tutorial, using questions, and providing corrective feedback. The differences in
results, particularly for some individuals, accentuate the limitations of the instruments
themselves, the limitations of the study in general -- particularly the short period of time
in which the study was done -- and the difficulties of conducting a field study.
Reasons for Varied Results

There are several possible reasons why the results varied across measures. First, the results might differ because of the varied sensitivity of the three instruments. For example, the PCM (Hunt, et al., 1978) cannot discern significant differences in conceptual level (CL) at higher levels. The PCM was originally intended for use with grades six through 13, and although Hunt and his associates (1978) used the PCM with adults and university students in a few studies, they acknowledged that the PCM, as presented in the scoring manual, is “not sensitive in detecting developmental change at higher levels” (p. 42). Reiman (1999) found “only very moderate growth” where the PCM was used in intervention studies with adults (p. 609).

In my study, the final PCM scores for individuals ranged from 1.83 to 3.0, placing the nine participants at moderate to high conceptual levels. This study applied Reiman’s definitions for conceptual levels, but even his higher cut-off scores fell short of making it possible to detect changes in some tutors. It is possible that the selection process for this study resulted in participants who were at least at a moderate conceptual level, making it difficult to determine change using the PCM (Zigler, 1993). So, while the PCM revealed no group gain, the lack of change can be partly explained by the limitations of the instrument itself.

Other limitations of the PCM are the subjectivity of the scoring and the limitations of the scoring process and the limitations of the scorers themselves. Although both outside scorers for the first post-test were experienced raters and had used

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21 Tutors are selected from a pool of good students and are recommended by instructors. Thus, they are an elite group, and one might expect higher scores (Zigler, 1993).
the instrument in their own doctoral studies, there were some notable differences between their scores on the stems that were returned to them for re-scoring. The biggest difference occurred on Participant 9's post test Stem 4 ("unsure") response where the score changed from a .5 on first scoring to 2.5 on the second, a change I found questionable. Baker-Brown and associates (1992) acknowledge that it is sometimes difficult to judge "whether differentiation [moderate development] or integration [late development] exists in particular statements" (p. 402). Thus, scoring on the PCM is very subjective, despite the training and practice. A score may depend on what part of the answer the rater chooses to focus. The participants' answers do not usually match the examples in the training manual, making it more difficult to determine the amount of discrimination, differentiation, and integration.

Further complicating the outcomes of the PCM is the fact that the researcher, not the experienced raters, scored the second post-test because, as noted in Chapter 4, the experienced raters could commit only to scoring the first two administrations of the PCM. They were unavailable at the time of the second post-test. While the researcher's rate of agreement with the training manual was good (89%), it is possible that the researcher gave lower scores than those the experienced raters assigned to the pre-test and first post-test.

The limitations of the PCM might account for some discrepancies between instruments, but they also help to explain the apparent lack of change in group means. For example, the PCM is not sufficiently sensitive to distinguish growth once participants have achieved a high level of conceptual complexity (Hunt et al, 1978; Zigler, 1993).
Zigler, who used Hunt’s original CL scores of 2.0 – 3.0 as indicators of high CL, noted that “no change was available to detect” among participants who had high pre-test scores on the PCM (p. 13). Participants in this study had a group mean of 2.33, a high CL level, from the outset. When the initial score is high, one is less likely to see change; change is more detectable among lower levels of complexity (Reiman & Thies-Sprinthall, 1998).

Unlike the PCM, the Reflective Judgment Interview has been used mostly with college freshmen through graduates in doctoral programs. Group mean scores across studies indicate that most college students reach a half-stage (.5) growth after four years of college (Hofer & Pintrich, 1997). Thus, the increase of .07 in the group mean for participants in this study is an average increase for one semester of college. Hofer and Pintrich (1997) report that a “typical graduating senior” is at level 4 (p. 101). In this study, level 4 was the dominant level of thinking for seven out of nine participants on each administration of the RJI, and only one participant had reached the level of a senior in college.

The participants in this study who displayed high levels of conceptual complexity on the PCM demonstrated only moderately complex levels of reflective judgment. At first glance, the scores for some tutors on the two measures appear to contradict each other. However, it is important to remember that the “scales” for measuring levels of complexity are different on the two instruments. According to Boonyaprakob’s (2002) comparative analysis of the RJI and PCM, among others, a score of 3, 4, or 5 on the RJI is comparable to a score of 2 on the PCM (p. 110) in that the characteristics displayed at
stages 3, 4, and 5 on the RJI are similar to characteristics displayed at stage 2 on the PCM.

Boonyaprakob did not attempt to correlate exact scores, but based on my experience with the PCM scoring manual and my scoring experience, I estimate that scores of 2.0 to 2.25 on the PCM would be comparable to Stage 3 on the RJI; 2.26 – 2.50 on the PCM would be comparable to stage 4 on the RJI, and 2.56 – 2.75 on the PCM to stage 5 on the RJI. Viewed from this perspective, the scores on the PCM and the RJI are more consistent than they might appear at first glance. For example, Participant #2 had a score of 2.33 on the PCM pre-test and 4 (3) on the RJI which fits with Boonyaprakob’s analysis.

King and Kitchener (2002) observe that the data on the RJI “may underestimate students’ cognitive abilities” (p. 56). If that is so, it may be one reason the RJI scores showed some participants to be at a moderately complex level when other measures suggested a highly complex level. For example, Participant #1 had a PCM pre-test score of 3.0 and a DIT-2 pre-test score of 69.08, both suggesting a high level of complexity, while her RJI pre-test score was 4 (5), suggesting a moderate level of complexity.

One of the limitations of the RJI is that it places limits upon some participants for whom speaking extemporaneously is difficult. King and Kitchener (2002) describe the RJI as “a difficult production task,” and as an “assessment approach [that] places demands of high difficulty on the students as they construct response de novo and without practice or even much time to collect their thoughts....[There is no] contextual feedback and emotional support for their efforts,” thus leading to less than optimal conditions (p. 103).
Participants’ comfort level with testing conditions and the test format may explain some differences among the scores.

Like the RJI, the DIT-2 is also intended for use with a range of people from high school students to professionals and doctoral students. King and Kitchener (2002) found a moderate correlation between the RJI and the DIT, but in my study, the DIT-2 scores were higher than the RJI scores. This discrepancy may be partly explained by the curriculum in the Tutor Development course in which ethical issues were deliberately included, whereas there were few opportunities to practice with the kinds of questions posed by the RJI. Narvaez (1999) “speculates that expertise in moral judgment develops like expertise in music”, and that like music, it “requires deliberative study” (p. 386). She observes that the lower stages of moral development seem to develop from “social experience,” but that post-conventional stages 5 and 6 “require purposeful study” (p. 386). Participants in this study were engaged in the “purposeful study” of ethical issues in tutoring during their first semester as tutors, and perhaps that helps to explain why the DIT-2 post-test scores indicated more development in the ethical domain.

Changes in scoring the DIT-2 test, moving from an emphasis on stages to an emphasis on schema, may result in a lower correlation between RJI and DIT-2 scores than were previously reported; no revised correlations have been reported. However, the changes in emphasis better reflect the belief of Rest et al. (1999b) that people are never “in” a stage, but exhibit different stages at the same time.

\[22\] They used P% scores in this correlation. The DIT-2 now reports N-2 scores, and I have not seen a correlation between RJI scores and the N-2.
Another limitation of the instruments is that participants may lose interest and motivation to complete the assessments when there is only a short time between the test administrations. Tutors who showed less growth may have been less motivated at the time of post-testing, and that reduced motivation may have caused some scores to decline, especially on the second post-test in April. In discussing the lack of significant growth in their Developmental Portfolio Intervention studies, Senne and Rikard (2003) speculated that "a possible loss of motivation might have increased the likelihood of a reactive effect" and lower post-test scores (p. 11). Lack of motivation could lead participants to take the assessments less seriously and attend to them less. In August, when participants completed the PCM and the DIT-2, the tests were a novelty, and participants were enthusiastic about participating in the study. The second and third time they took the tests, the novelty had worn off. Cognitive psychologists tell us that a lack of novelty may influence a person's lack of attention and interest in the object (in this case, the assessments). Voluntary attention requires effort, and more effort is necessary when there may be other distractions (Martindale, 1991). Because the PCM and DIT-2 were administered three times in eight months, some participants might have found it boring to repeat a test, and a drop in their scores could reflect that lack of motivation and boredom (Senne & Rikard, 2003; Rest et al, 1997).

Another possible explanation for the variability among results for individual results on the three instruments is that each instrument calls for a different type of response. I chose to use methods that required different kinds of responses in order to minimize the bias of any one measure and to allow participants a variety of ways to
demonstrate their cognitive-structural development. The type of responses called for by each measure (writing, speaking, and multiple choice), as well as the participants’ preferences or dislike for a particular type of response, may have affected the scores. The PCM calls for a written response, the DIT-2 for a selected choice (multiple choice), and the RJI for an oral response constructed without prior knowledge of the question. The participants who prefer to reflect and write their responses might achieve higher scores on the PCM, whereas those who prefer to speak extemporaneously might prefer the RJI. Other participants might prefer the multiple choice format. Most participants in this study said they most liked the RJI because they could express their point of view and least liked the DIT-2 because they did not feel the choices represented their point of view. Most of the participants liked the PCM because it allowed them to construct an answer, although some were not fond of the specific prompts. Hunt et al. (1978) acknowledge that some stems may not spur the participants’ interest. The participants’ feelings about a particular type of test or their comfort level with writing (PCM) or with constructing answers aloud (RJI) may have affected scores.

A third reason the scores might vary for individuals across the three instruments is that each instrument focuses on a different aspect of cognitive-structural development. Even though the three instruments are considered overlapping measures because they all address cognitive-structural change, each one measures a particular facet of cognitive development. In the PCM where conceptual level is measured, the questions focus on one’s relation to authority, comfort with uncertainty, and ability to handle conflict. In the DIT-2, moral reasoning is the focus, and the questions are concerned with making moral
judgments. The RJI measures reflective judgment, one aspect of critical thinking, and specifically the degree to which the participant sees the uncertainty of knowledge but recognizes that judgments can be based on evidence. Cognitive-structural development may vary across domains (Reiman, 1999; King and Kitchener, 2002).

In some instances, participants showed a decline in scores. According to King and Kitchener (2002), a decline in scores is better explained as an indicator of transition rather than as a regression. This is also consistent with Kegan's view that development is better depicted as a spiral, rather than a linear progression; what might appear to be regression is regarded as an occasion to revisit old issues at new levels of complexity.

Q. 2. Complexity of Thinking: Fluctuation in Journal Coding

As noted in Chapter 4, one of the problems with the journals was that the constructs were not sufficiently delineated, so some passages could be interpreted as presenting evidence of more than one category. Thus, some discrepancies and fluctuation in the journal scores were likely due to differences in the outside coders' interpretations of the passages. In the end, only passages on which the coders agreed were included in the scores.

A further analysis of tutors' journals indicates that there was some growth in complexity of thinking in all four coding categories (flexibility, tolerance of uncertainty, disposition to critical thinking, ability to detect the problem), but the changes were not linear. Rather, the complexity of tutors' thinking fluctuated during the semester depending on their interest in the readings and the writing prompts, the degree of
disequilibrium they were experiencing at the time, and perhaps other uncontrolled factors.

The category most frequently coded was flexibility and adaptability. This is not surprising because flexibility is a characteristic of good tutoring that we stressed from the outset of the Tutor Development class by emphasizing the need to adjust to differences in learning styles and cultural values. Although there was no group gain of .5 or larger in any of the categories, improvements were evident in critical thinking/reflective judgment (group gain of +.35). The majority of passages coded for this category were reflections on themselves as learners and tutors; this finding is consistent with Mentkowski and associates' (2002) finding that “self-reflection was often directed to personal values and identity” (p. 186). Although I would hope for greater gains, the improvement in critical thinking/reflective judgment is consistent with our emphasis in the course on self-assessment and reflective practice via the journal prompts and supervisory interviews.

Three of the four tutors (Participants 1, 2, 4, and 9) who received the highest scores for flexibility (4 was the highest awarded in the seven coded journals) had low maintaining norms scores and proportionately higher post-conventional thinking scores on the DIT-2 pre-test. This connection strikes me as meaningful because maintaining norms is associated with a need for structure and authority and somewhat rigid thinking, while being flexible requires one to adapt to situations and to view the need for rules or authority within a particular context.

The reader is reminded that in this study disequilibrium was defined as “curiosity, uneasiness, affective arousal” that results when an individual confronts difference or discrepancy between prior knowledge or beliefs and new ones.

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The two areas in which there was least change as a group were tolerance of uncertainty and the ability to detect a problem, perhaps two of the biggest challenges for first semester tutors. Since coding for tolerance of uncertainty included tutors’ level of self-confidence, the scores fluctuated with the degree of challenge and extent to which their confidence was shaken when they were confronted with situations where they did not know “the answer” or did not know how to handle a situation. The lack of growth in tolerance of uncertainty in the journals is supported by an analysis of PCM responses to the stem “When I am not sure....” This analysis reveals that PCM scores of 1.0 or 1.5 (low levels of complexity) were assigned to 10 of 27 responses to this stem. As noted in Chapter 2, when conceptual level scores are computed, only the top three of the five PCM scores are included. For tutors who received high CL scores, the score of the stem “When I am not sure” was usually one of the scores that was dropped. Also, while it was not unusual for tutors to begin the semester with a moderately high to high score on the response to uncertainty, six tutors’ scores declined on this prompt, again suggesting that as they encountered more unsettling experiences, their confidence level and ability to tolerate uncertainty decreased.

There may also be a link between the level of tutors’ tolerance of uncertainty and the RJI scores. At the quasi-reflective level (4) where most tutors placed, individuals have only begun to recognize that knowledge is uncertain, and they make little distinction between “knowledge and the justification of knowledge” (Hofer & Pintrich, 1997, p. 100). The fear of not knowing the answer is related to a belief that knowledge is certain, that there IS a right answer.
Another area in which there was little growth for most tutors was the ability to detect a problem and to take steps toward resolving it. Dewey (1933) observed that ill-structured problems, like those encountered in teaching or tutoring, were more likely to lead to reflection; however, before reflection on the problem could occur, the individual would have to detect the problem. In this study, as in Mann’s (1993; 1994) study, the ability to detect and describe problems appeared to be related to level of cognitive development. Mann’s high group tutors tended to describe problems in more detail than the low group did. In the current study, Participants 1 and 2 illustrate the point that tutors who began the tutoring experience with high CL and DIT-2 scores received the highest and most frequent scores for detecting problems.

It appears that most tutors in this study acquired neither the confidence to deal with uncertainty nor the skills to resolve problems during their first semester as tutors. If this is the case, it highlights the need for continuity of an experience, as stressed by the Teaching and Learning Framework (Reiman & Thies-Sprinthall, 1998), so tutors have time to gain the confidence and learn the skills. Given more time and practice, tutors may develop more tolerance of uncertainty and improve their ability to detect and resolve problems.

Q. 3: Tutoring Practice

Tutoring practice requires the tutor to “integrate interpersonal and cognitive abilities” (Mentkowski et al., 2002, p. 185). To assess changes in tutoring practice, outside raters used a checklist to evaluate taped tutorials, a checklist that turned out to have some limitations. Although group means could be determined for each behavior.
rated, the checklist was set up in such a way that no composite score could be computed for individuals or the group. That is, the checklist included both non-directive (more desirable) and directive (less desirable) behaviors, and the raters marked the frequency with which those behaviors occurred. The goal was to increase the number of non-directive behaviors and decrease the number of directive behaviors, and I should have allowed for reverse scoring on the direct behaviors. Because that was not done, no composite score was computed.

Another limitation of the observation checklist – a more important one -- was that behaviors were rated out of context; that is, there was no provision for rating the appropriateness of a particular behavior for the situation. While non-directive strategies are generally considered more desirable (Flanders, 1970, as cited by Reiman & Thies-Sprinthall, 1998), some tutees and some situations call for being flexible and using more directive strategies (Powers, 1993). An adaptable tutor will “read and flex” (Oja, Struck, Chamberlain, Moran, 1997, p. 35) with the situation. If non-directive strategies, like asking questions, cause the tutee to become confused, the tutor might use more directive strategies like explanation until the tutee has a better understanding of the subject. Although raters could add comments as to the appropriateness of some behaviors (and they occasionally did so), the checklist itself did not allow for evaluating the appropriateness of the behavior for the situation.

A third problem with the observation checklist was that it did not include an evaluation of the way a tutor concluded the tutorial. Tutors were encouraged to allow time for the tutee to sum up the tutorial at the end, but many tutors just ended the tutorial
when the time was up. The checklist did not allow the observer to evaluate the lack of closure or the lack of reflection on what the tutee had learned during the tutorial.

Despite the limitations of the checklist, the ratings showed that tutors, as a group, increased their use of non-directive strategies, especially negotiating a goal for the tutorial with the tutee, asking questions, and providing corrective feedback – three behaviors I stress through demonstration and practice in the course throughout the semester. Tutoring behaviors were linked to the same four categories for which the journals were coded. Most tutoring behaviors – both directive and non-directive – were linked to the category of flexibility and adaptability. A comparison of journal scores in each category with the behaviors linked to those categories suggests that the some tutors who received frequent moderate to moderately high scores of flexibility in the journals, also received high ratings on the tutoring behaviors linked to flexibility. This suggests there was some relationship between the tutors’ thinking about flexibility and their being flexible in their practice.

In contrast to expectations, some tutors decreased their use of non-directive strategies; for example, there was no gain in assessing prior knowledge. While it is possible that some tutors may have done this assessment prior to turning on the camera, it is more likely that tutors who had worked with a tutee for weeks assumed they knew the tutees’ prior knowledge and what skills they were able to apply. Experienced tutors and teachers know that each session needs to begin with an update of the tutee’s knowledge and understanding. Assessing prior knowledge is a behavior that needs to be stressed more in the Tutor Development course.
In Participant 7’s case, the decline in scores on non-directive strategies may have been due in part to the fact that his two taped tutorials were in different subjects, the first in logic and the second in writing. While the tutor had high ratings (mostly 4 and 5) on the logic tutorial in using both directive and non-directive strategies, most of the ratings on the writing tutorial were lower. Another possible explanation for this tutor’s decline in scores is that, in my observation, the raters whose training was in the writing process, were more critical of writing tutors than they were of math, statistics, or logic tutors, perhaps because they lacked experience in working with tutors in those disciplines.

The time at which the tapes were made may have made a difference in the degree of observed improvement. Most tutors did not have tutorials during the first month of the study. It was mid-October before they felt they had sufficient rapport with tutees to ask them to video-tape a tutorial. In some cases there were two months between tapings, while in a few cases there were only four or five weeks between tapings because some tutors did not have individual tutorials until after mid-semester.

For three tutors who received good ratings on the first tape and on early journal entries, there appears to be a relationship between scores on coded journals and scores on rated videos; however, that is not the case for five tutors. In sum, there was no clear pattern of relationships between scores on coded journals and ratings on tutoring behaviors.

Because people with high conceptual level scores are generally expected to perform better on complex tasks (Reiman & Thies-Sprinthall, 1998), tutors with higher scores on the instruments could be expected to have higher ratings on the taped tutorials.
For five participants there is a positive relationship between scores on the three
instruments and tutoring practice. For other participants, there is no clear connection
between the scores on the instruments and tutoring practice. No clear patterns can be
detected in the relationship of scores on the instruments to changes in tutoring practice.

Function of the Teaching and Learning Framework

The Teaching and Learning Framework (Reiman & Thies-Sprinthall, 1998) provided the developmental framework for this study and the basis for the Tutor
Development course. (See Appendix C, The Teaching and Learning Framework and the
Design of the Tutor Development Course.) Although my intent was to provide the same
developmental and instructional conditions for all tutors, the case studies described in the
next section of this chapter will show that some tutors experienced the developmental
conditions differently than others did. Like Senne and Rikard (2003), I learned that the
treatment (taking on the role and participating in the Tutor Development course) could
not be standardized in a naturalistic setting.

All nine tutors attended class two days a week, but they met as a group only one
day a week; on the second day, they were divided by discipline. Consequently, there
were minor differences in instruction between the mathematics and writing tutors. All
tutors did the same readings, received the same instruction and had similar opportunities
for practicing tutoring strategies in the Tutor Development class one day a week. When
they were divided by discipline for the second class day, mathematics tutors and writing
tutors engaged in different readings and activities. Mathematics tutors met with the
Assistant Director to apply theories and strategies specifically to tutoring mathematics
while writing tutors met with the Director to apply theories and strategies to tutoring the writing process. The two instructors had different teaching and supervisory styles, but they agreed on the curriculum for all parts of the course and shared a constructivist approach to instruction and supervision. The two instructors took turns responding to all nine tutors' journal entries until the final three journal entries when both instructors wrote responses to all nine tutors.

Another difference between the mathematics and writing tutors was that mathematics tutors were supervised by the Assistant Director while writing tutors were supervised by the Director. Care was taken to ensure that tutors had similar levels of support and supervision. Despite efforts to provide a similar environment for all tutors, the narratives in Chapter 6 show that tutors constructed their own version of the tutoring experience.

In this section, I have shown that the limitations of the instruments themselves, the participants' interactions with those instruments, and the participants' interactions with the Teaching and Learning Framework help to explain differences among the scores on the cognitive-development instruments. The codings on the journal entries, which, as a group, showed only slight changes in the complexity of the participants' thinking about tutoring, appear consistent with the PCM and RJI scores, while improvements in performance are more in line with the changes in the DIT-2 scores.

Q. 4: The Mechanisms of Change

The group results on the three quantitative instruments indicate that there was significant growth only in moral reasoning. The coded journals reveal there was no
significant group change in the complexity of the participants' thinking about tutoring, but as a group, tutors made positive changes in tutoring practice in three areas -- negotiating a goal for the tutorial, using questions, and providing corrective feedback. Each of the numerical scores answers one research question about change and reveals one piece of information about the tutors. However, the scores do not begin to address the second purpose of my study -- to explore what happens in tutors' experience to impact growth -- nor do the group scores tell us about growth in individual tutors. All nine tutors demonstrated growth on at least one of the five measures. Some tutors demonstrated and sustained more positive change than others did, and it is worthwhile to examine instances where such change occurred and where it did not. In the next chapter, a qualitative analysis of all the data and three narratives of tutors' experiences, I explore differences in the tutors' experiences in order to uncover factors that influenced change.
CHAPTER VI
THE QUALITATIVE ANALYSIS AND
THREE EXAMPLES OF TUTORS’ ROLE-TAKING EXPERIENCES

A qualitative analysis of all the data was done in order to fulfill the second purpose of the study – to explore what happens in tutors’ experience to impact growth, and to answer the fourth research question: What are the mechanisms of change? After analyzing all of the data, I selected three tutors for further study and followed Creswell’s (1998) guidelines for conducting a case study: I used multiple sources of data to construct and analyze narratives of the three tutors’ experiences. Each narrative allowed me to “catch the complexity” (Stake, 1995, p. xi) of the individual’s experience, to “highlight the characteristic traits” of the tutors (Hamel, Dufour, & Fortin, 1993, p. 16) and to probe the factors that affected their development. My rationale for selecting the three tutors for further study follows the results of the qualitative analysis.

Qualitative Analysis of all the Data

Data consisted of (1) the results of the five measures described in Chapter 5; (2) Learning Center records of the number of hours, subjects, and students each participant tutored; (3) my records of tutors’ attendance at class and tutoring sessions; (4) all nine tutors’ journals. In the next section I describe how I went about analyzing the journals.

As I read each tutor’s journal, I made a list of the topics that were brought up. Since the journal was intended to be a tool for reflection on the total tutoring experience,
it was structured to ensure that tutors responded to assigned readings and class activities and applied them to their tutoring experiences. Tutors were encouraged to use their journals to write about topics of their choice in addition to the writing prompts, but most tutors responded only to the specific prompts. Consequently, there was a lot of overlap in topics.

First, I made a list of the topics that came up in each tutor’s journal. From the list of individual tutors’ topics, I compiled a list for all nine participants. Whenever a topic arose in a journal that was already on the list from another tutor’s journal, I kept a tally. In spite of the structured nature of the journals and overlap in topics, the list grew to a total of 76 topics. (See Appendix L for the Table of Topics and their Frequency). Topics mentioned only once or twice were dropped, and other topics were combined because they were actually different ways of saying the same thing. For example, tutors’ desire to be “comfortable” in the tutorial and the importance they placed on being confident expressed the same feeling – uncertainty.

Seeing more overlap and relationships among the topics that remained on the list, I combined them and reduced them into larger categories. (See Appendix L). For example, twelve topics were combined and categorized as concern for the tutee: these topics included the tutor’s need to be flexible and accommodate difference; the tutee’s feelings; the need to provide a “safe” environment for tutees; references to focusing the tutorial on the tutee’s needs, and empathy with the tutee. This process of reducing the number of categories resulted in seven broader categories: (1) the tutors’ feelings about their experiences (9 tutors, 55 comments); (2) the tutors’ perceptions of support and
challenge (9 tutors, 40 comments); (3) the tutor's need to be confident/comfortable (9 tutors, 48 comments); (4) the tutor's application of the readings to him/herself personally, to tutees, or to tutorials (9 tutors, 71 comments); (5) the tutors' concern for their tutees (9 tutors, 60 comments); (6) personal issues, concern for self (8 tutors, 27 comments), and (7) relationship with tutees (7 tutors, 29 comments).

Next, I examined the broader categories to see under what circumstances the comments arose in the journals. I found that the fourth category -- application of the readings to themselves personally or to their practice -- always emerged in response to a journal prompt. With few exceptions, the tutors did not refer to the readings unless they were prompted to do so. This finding reaffirmed my belief that a structured journal was more likely to promote reflection that would help tutors integrate class assignments and tutoring experiences. This category was further analyzed only for the three tutors chosen for further study in the narratives.

To place the other categories in the context of the circumstances in which they arose, I examined Learning Center documents and journals for the type of tutoring situation tutors were in at the time the comments were made. Learning Center records told me how many individual tutorials, class-link interactions, drop-in tutoring, or study groups each tutor conducted. Journals often revealed the "type" of students with whom the tutor was working and the subject. For example, some tutors mentioned working with under-prepared students in developmental mathematics or English courses, while others mentioned students in a regular college courses;²⁴ few tutors worked with English Speakers of Other Languages or students with documented disabilities. By bringing to
the analysis my questions regarding circumstances, I began to see some connections among the particulars of the tutoring situation and three categories— the tutor’s feelings about her/his experience, the need to be confident or “comfortable”, and relationships with tutees. This observation resulted in further reducing the categories to a theme that I called the quality of the tutoring experience. I defined the quality of the tutoring experience as the tutors’ feelings about their experiences, i.e. their degree of satisfaction or frustration, the relationships they formed with tutees, the types of tutorials they conducted, and the degree of challenge presented by the tutees.

The quality of the experience can be illustrated by looking at contrasting examples of two mathematics tutors and two writing tutors. Mathematics tutors (Participants 3 and 8) who were challenged to work almost exclusively with a large number of underprepared students in group settings expressed more frustration and tended not to form relationships with their tutees. The experience of one of the tutors chosen for further study illustrates this theme. In contrast, writing tutors who consistently worked only with individual students in their class-link assignments expressed satisfaction and were more likely to form relationships with their tutees. The experiences of two of the tutors chosen for further analysis illustrate this theme.

I also analyzed the data for the presence of the components of the Teaching and Learning Framework (Reiman & Thies-Sprinthall, 1998) because it was the model for the Tutor Development course, and I linked the emergent categories from the journal analysis to the framework. Table 6.1 is a review of the four components of the instructional

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24 By regular course is meant a course for which the credits counted toward a bachelor degree.
repertoire (Joyce & Showers, 1988), and the five developmental conditions (Sprinthall, Reiman, & Thies-Sprinthall, 1998, as cited by Reiman & Thies-Sprinthall, 1998).

Table 6.1 *Teaching and Learning Framework* (Reiman & Thies-Sprinthall, 1998).

<table>
<thead>
<tr>
<th>Instructional Repertoire for building skills (Joyce &amp; Showers, 1988)</th>
<th>Developmental Conditions (Sprinthall, Reiman &amp; Thies-Sprinthall, 1998)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant theories</td>
<td>Taking on a new helping role</td>
</tr>
<tr>
<td>Demonstrations of skills</td>
<td>“Guided reflection” (p. 132)</td>
</tr>
<tr>
<td>Practice using skills and feedback</td>
<td>A balance of role-taking with reflection</td>
</tr>
<tr>
<td>Coaching to help learner adapt and generalize skills</td>
<td>A balance of challenge and support</td>
</tr>
<tr>
<td>(This is intentionally left blank.)</td>
<td>“Continuity” (p. 132) (at least 4 months)</td>
</tr>
</tbody>
</table>

All nine tutors took on the new helping role and engaged in guided reflection, but the narratives illustrate the differences in the degrees to which tutors participated in both components of the framework. For example, some tutors missed more classes than others and thus were not present for demonstrations, discussions of theories, or practice; consequently, they missed out on some parts of the instructional repertoire. One emergent category from the journal analysis, the tutors’ need to be confident or “comfortable,” seemed to be related to the tutors’ engagement in the instructional repertoire because skill development is important to developing confidence as a tutor (Joyce & Showers, 1988). It appeared that the tutors’ lack of comfort may have been related to their lack of practice with the skills.

To determine whether there was a balance of experience and reflection, I examined the number of hours the tutors worked and the amount of reflective writing.
they did in their journals. In my study, the amount of experience was indicated by the number of hours dedicated to tutoring, and the amount of reflection was determined by counting the number of paragraphs tutors wrote in their journal entries. Although the number of paragraphs could be misleading because some tutors tended to write short paragraphs while others wrote long ones, I needed some indicator of the attention devoted to journal writing. At the same time that I noted the number of paragraphs, I made notes on the profile sheets regarding the tutor’s inclination to reflect on the readings and tutoring experience. For each tutor, I also looked at the changes in tutoring practice, as indicated by scores on the observation checklist, in relation to the hours of experience and amount of reflection.

The balance of support and challenge was related to two categories that emerged from the analysis of journals: the tutors’ perception of the challenge and the support they received, and the tutors’ need to be “comfortable.” Part of the challenge of becoming a tutor was learning to use non-directive tutoring strategies, and several tutors struggled to achieve this goal. Making the transition from the familiar transmission model of direct instruction to a tutoring model that called for using more non-directive strategies caused some tutors discomfort or disequilibrium. While disequilibrium is a positive force for change, it can also result in unsettled, uncomfortable feelings, a lack of confidence and a fear of uncertainty.

In addition to an analysis of the journals, class records, and Learning Center records from the perspective of the Teaching and Learning Framework, the qualitative analysis of the data included an examination of the scores on the three instruments. My
earlier analysis of the scores on the instruments had pointed to the possible impact on
scores of the tutors’ physical and mental conditions and other personal issues; thus, my
attention was drawn to references in journal entries about tutor’s concerns with their
personal problems, family issues, time management, and health. Attendance records and
Learning Center records confirmed tutors’ absences due to personal, family, and health
issues for five tutors. These records, along with records of assignments for the Tutor
Development course, further testified to each tutor’s degree of engagement in the tutoring
program.

When all the data were viewed together, three themes emerged from the analysis:
(1) the tutors’ developmental levels when they took on the role (as indicated by the scores
on the three instruments); (2) the quality of the tutoring experience, defined as the tutors’
feelings about their experiences, the relationships they formed with tutees, the types of
tutorials they conducted, and the degree of challenge presented by the tutees; (3) the
extent to which the tutor participated in the instructional repertoire and fulfilled the
developmental conditions of the Teaching and Learning Framework. (See Appendix M,
Table of Themes with Examples, for illustrations of each theme.)

Selection of Cases

Although there is no “typical tutor,” I wanted the choices for the narratives to be
somewhat proportionate to the number who were traditional aged versus non-traditional,
matriculated students versus non-matriculated, female versus male. I also wanted them,
if possible, to illustrate the relationship of different test results to results of the qualitative
analysis – i.e. the three themes that emerged from the analysis. Another criterion for
selecting the participants for further study via the narratives was the differences in their experiences. Most importantly, I wanted to select participants that would help me answer the questions: What were the mechanisms of change? What happened in their experience to impact growth?

After reviewing the participants’ journals and records, I selected Participants 1, 6, and 8 for further study. Participants 1 and 6 were both female, non-traditional students who were writing tutors while Participant 8 was a male, traditional age student who was a mathematics tutor. In my study, seven of the nine participants were female, and typically in my 15 year experience, female tutors have out-numbered males. Five tutors were non-traditional students, and over the years, the majority of tutors at my college have been non-traditional students. Five were writing tutors, and four were mathematics tutors; this split was atypical because I usually have twice as many writing tutors as I do mathematics tutors. Participants 1 and 8 were matriculated students, while Participant 6 was not; in my study, six were matriculated, and three were not; it is not unusual at my college for students to be taking courses, even tutoring, without being matriculated. Also, Participants 1, 6, and 8 had different scores on the assessments, and I thought looking at their experiences in relation to the differences in scores would be useful.

The qualitative analysis of the data suggested that Participants 1, 6, and 8 had different types of experiences, and the quality of their experiences (one of the themes) differed one from the other. In addition, each of these participants illustrated one or more themes that had emerged from the qualitative analysis of the data, and it appeared there was a lesson to be learned from each of these participants.
After selecting the three tutors for further study, I drew additional information about them and their experiences from the transcripts of the personal interviews (three each), the transcripts of the taped tutorials (two each), the in-class metaphor surveys pre- and post, and the case studies they wrote for the Tutor Development class (one each). I brought two questions to this additional data analysis: “How does the additional data fit with the three themes that emerged from the analysis of data for all nine tutors?” and “What more can I learn about their experience that was not evident in the journals, Learning Center records, and test scores?” The data for each of the selected participants were analyzed within the theoretical context outlined in the next section, and the participants’ view of their tutoring experiences emerged in the analysis of their journal entries, interview transcripts, taped tutorials, Learning Center and class records. The data provided a means for understanding what happened in the tutor’s experience to influence change. As Becker (1970) wrote:

To understand an individual’s behavior, we must know how he perceives the situation, the obstacles he believed he had to face, the alternatives he saw opening up to him. We cannot understand the effects of the range of possibilities…unless we consider them from the actor’s point of view (as quoted by Hamel, Dufour & Fortin, 1993, p. 17).

The narratives explore how the three tutors perceived their experiences, the obstacles or challenges they believed they faced, and the choices they made.

The analysis of all the data for each of the selected participants led to an assertion about each one. Each assertion refers to the participant’s stage of cognitive development.
as indicated by the scores on the instruments, states the ways in which s/he is illustrative of one or more themes, and suggests the ways in which he or she did or did not change. The first two assertions are followed by definitions of what it means to be functioning at a certain level of complexity.

Three Assertions

Assertion 1: Carolyn, Participant 1, is an example of an individual who scored at high stages of conceptual and ethical development and functioned at a high level of complexity. The account of her experience as a tutor illustrates the theme of how tutors’ level of cognitive development influences their abilities to conceptualize their role as tutors, to utilize effective tutoring strategies, to reflect on experience, and relate theory to themselves and their practice. Although there was little change in her high scores on the assessments pre to (2nd) post, the narrative shows that Carolyn experienced growth in her thinking about tutoring.

Assertion 2: Eric, Participant 8, is an example of a tutor whose development as a tutor – i.e. the changes in his thinking about tutoring and his performance --was impacted by his conception of his role as a tutor, the quality of his experience, his self-concerns, and the degree to which he engaged in the tutoring experience and fulfilled the conditions of the Teaching and Learning Framework. Eric scored at a moderate stage of cognitive development on the PCM and DIT-2, and because one’s stage of development has been shown likely to predict performance on complex tasks (Reiman, 2000), he could be expected to function at a moderately complex level of tutoring.
Assertion 3: Melinda is an example of a tutor whose initial scores on the PCM, the DIT-2 and early journal entries suggested a moderate stage of development. She was poised for growth, meaning she began the study at a moderately complex level, was open to new ideas, willingly engaged in reflection, and welcomed feedback on her ideas and her performance. After taking on the challenging new role, reflecting on her experience, and making appropriate changes, she exhibited growth in her thinking about tutoring, her use of effective tutoring strategies, and ethical reasoning.

In the next section I briefly summarize the particular theories that provided the theoretical framework for the qualitative part of my study. The reader is referred to Chapter 2 for a fuller discussion of the theories.

Theoretical Context for Narratives

Since the answer to the question about mechanisms of change follows from the answers to the first three questions, all the theories and research summarized in Chapter 2 are relevant to the narratives. For example, Tables 2.1, 2.2, 2.3, and 2.4, which summarize levels of complexity as described by Hunt (1971), King and Kitchener (1994), Rest et al. (1998), and Kegan (1982), were used to explore the relationship between the individual's cognitive-structural stage (Q.1), her/his thinking about tutoring (Q.2), and her/his performance as a tutor (Q.3). Developmental level is related to one's perception of an experience, the ability to make meaning of the experience, and the ability to reflect on it (Oja & Reiman, 1998). In addition, Rest et al.'s (1999b) theory of moral development provided the context for evaluating the three tutors' personal ethical codes that guided their tutoring practice. The theories most relevant to the narratives -- the
Teaching and Learning Framework (Reiman & Thies-Sprinthall, 1998) and the theories of tutoring -- are briefly highlighted in the next section.

The Teaching and Learning Framework

The tutors' experiences were investigated while they participated in a program modeled on the Teaching and Learning Framework (Reiman & Thies-Sprinthall, 1998). (See Appendix C, Design of the Tutor Development Course to Meet Specifications of the Teaching and Learning Framework). The two components of the framework were summarized earlier in this chapter, and more fully described in Chapter 2. All elements of the instructional repertoire were incorporated into the curriculum for the Tutor Development course. Theory provides the “rationale behind a skill or strategy and the principles that govern its use” (Joyce & Showers, 1988, p. 68) and demonstration, which Joyce and Showers equated with modeling skills, illustrates the theory. Supervisors provided demonstrations, and new tutors also observed experienced tutors in real tutorials. Tutors had opportunities to practice skills “under simulated conditions” and in a supportive environment (Joyce & Showers, 1988, p. 68), and they received feedback from supervisors and peers. Joyce and Showers maintain that “[p]ractice of new skills and behaviors increases both skill and comfort with the unfamiliar” (p. 73), so opportunities to practice and get feedback were important to building confidence as tutors as well as to building skills. Coaching, according to Joyce and Showers (1988), is a form of support that should occur in the workplace. In this study, coaching was provided during in-class practice sessions and in individual conferences with the tutors. Coaching aims to help tutors adapt theory and skills to different situations and to transfer skills.
However, Joyce and Showers (1988) note that "transfer of training is a separate learning task" (p. 73), and the pace at which transfer occurs may vary with the learners' prior knowledge of the theory and skills.

The five developmental conditions in the framework were also built into the Tutor Development course, although continuity was limited to one semester. As noted earlier, the framework calls for a balance of experience and reflection because researchers who used the Teaching and Learning Framework as the intervention in their studies found that taking on a new role does not by itself promote growth. Opportunities for reflection were provided in the dialogue journals, session reports, and individual conferences. Research supports the theory that reflection on experience "serves to facilitate the cognitive restructuring process needed to integrate new learning with old patterns of thought" (Oja, 1980, p. 44). Thus, the tutors' journals were expected to reveal changes in their thinking about tutoring as they integrated new theories and skills into their tutoring. The fourth condition – support and challenge – was built into the program, but tutors experienced varying degrees of support and challenge. Many challenges were inherent in the tutoring experience itself, and sometimes supervisors challenged the tutors to try new strategies or to confront personal problems. Support was provided by the co-instructors through written feedback on journal entries, class discussions, and individual conferences with tutors. Some tutors also found support in their fellow tutors and classlink faculty. Several researchers have demonstrated that when all components of the Teaching and Learning Framework are well implemented, teaching or tutoring performance improves along with increases in participants' scores on the instruments like the PCM and the DIT-
Research on Journals

To explore why journal writing assisted some tutors (e.g. Participants 1 and 6) and not others (Participant 8) in processing their experience, I also drew upon the work of Fulwiler (1992) who studied college students’ journals and Surbeck, Han and Moyer (1991) who studied teacher education candidates’ journals. Fulwiler found that the number and the length of the journal entries was an important indicator that the writer had given time and thoughtful attention to writing and a sign that the journal could be “useful to the writer” (p. 168). Surbeck et al. concurred that elaborated responses were characteristic of a reflective journal, particularly when writers linked experience to theories or to ethical principles and expressed personal insights.

In this study, journals were used to investigate how tutors were thinking about their total tutoring experience. Furthermore, I relied heavily on the dialogue journals as a means of delivering timely feedback to the tutors, and I counted on the tutors to reflect on the questions and comments that we instructors wrote in response to their journal entries. Although my intent was to provide the same instructional and developmental conditions for all tutors, there were some notable differences in how tutors used journals and how they interacted with the Teaching and Learning Framework. These differences are evident in the narratives.
Theories about Tutoring

In addition to the Teaching and Learning Framework, theories about tutoring (often derived from theories about teaching) comprised part of the analytical framework for the narratives. Tutoring strategies were classified by Flanders (1970, as cited by Reiman & Thies-Sprinthall, 1998) as being directive or non-directive. While Flanders, and later Johnson (1995), consistently point to non-directive strategies as being the preferred strategies, Reiman and Thies-Sprinthall observe that some tutees and some situations called for more directive strategies; the tutor's job is to interpret the situation and adapt. The narratives illustrate the challenges some tutors faced in selecting appropriate directive and non-directive strategies.

Other tutoring theories and practices on which the observation checklist of tutoring behaviors was based (Lepper et al., 1997; Rabow, Chin, and Fahimian, 1999; Ritter, 2000; and Wingate 2000) were considered in the analysis of tutoring behaviors. Lepper et al. (1997) created an acronym to summarize the characteristics of a good tutor: INSPIRE (p.130). Effective tutors are intelligent (I). Lepper et al. apply this term broadly to include “higher levels of knowledge, of several different sort”, including knowledge of the content of the tutorial and “pedagogical knowledge” (p. 131). Good tutors are nurturant (N) and dedicate time to “building rapport with their tutees” (p. 131). They empathize with their tutees and attend to the interpersonal and affective dimensions of the tutorial as well as the academic. Effective tutors are Socratic (S) and choose to use questioning more often then telling; they use questioning as a form of corrective feedback. Lepper et al. found that “expert tutors” are progressive (P); that is, they “make
increasing demands on the student in each tutoring session” (p. 134). However, the most effective tutors are indirect (I) in the ways they “convey their high expectations” for their tutees (p. 135). The best tutors are reflective (R), and help their tutees to reflect on their learning in order to “articulate” their understanding of procedures and concepts (p. 136). Lastly, expert tutors encourage (E) their tutees, try to keep them motivated, and build the tutees’ self-confidence. They encourage their tutees to take “control” of the tutorial and the subject matter (p. 138). Several tutors alluded to the INSPIRE acronym in their journals, and the degree to which the qualities summarized in the acronym INSPIRE were present for tutors became evident when I developed the three narratives.

The work of several researchers was relevant to the second theme — quality of the tutor’s experience: the type of tutorials, the tutee’s preparedness for the course and outcomes in the course, the tutor’s feelings, and the tutor’s relationship with tutees. Like Lepper et al. (1997), Rabow et al. (1999) emphasized the importance of good relationships between tutors and tutees. Good relationships begin with the tutor’s acceptance of the tutees’ attitudes and feelings (from Flanders (1970), as cited by Reiman & Thies-Sprinthall, 1998).

Fuller’s (1969, as cited by Sprinthall, Sprinthall, and Oja, 1998) theory of “phases of concern” helped to explain some of the “personal aspects” of tutoring (p. 425). In her study of new teachers in the classroom, Fuller observed that most new teachers moved through a sequence of concerns beginning with concern with self (Phase 1), to concern with the task (Phase 2), to concern for the impact of their actions (Phase 3). According to Fuller, when one first takes on a new helping role, there is a period of
unease or disequilibrium when it is natural or “normal” (Sprinthall, Sprinthall, & Oja, 1998, p. 426) to be focused on oneself and concerned with how one is perceived by tutees and supervisors. The tutor’s questions might be: What does she think of me? Does she trust me? Am I credible as a tutor? In the second phase, the focus is on tutoring strategies, and the tutor’s question might be: What technique or strategy will work best for the tutee’s learning style? In the third phase, the tutor’s concern is with outcomes for the tutee, and the questions might be: How will this tutee benefit from the tutorial? How does this student feel about her paper? How does she feel about herself?

Hall, Wallace, and Dassett (1973) and Hall and Loucks (1978, both as cited by Reiman & Thies-Sprinthall, 1998) later sub-divided the general phases and created six phases. Phase 1 was divided into three phases: lack of awareness (0), informational (1), and personal (2). Phase 2, Task, was re-labeled management because in this phase the teachers were primarily concerned with managing their time and the classroom situation. Phase 3 (Impact) was also divided into three phases: consequence, collaboration, and refocusing (Reiman & Thies-Sprinthall, 1998, p. 85). Experienced teachers also moved through the phases when they were confronted with new situations. However, Reiman and Thies-Sprinthall (1998) reported that individuals with more experience and higher cognitive developmental levels moved more quickly through the phases.

Some new teachers remained in the first phase of self concerns, while other teachers got stuck in the second phase. Reiman and Thies-Sprinthall (1998) found that in those situations, the challenges presented to the teachers exceeded the level of support they received. Without “adequate orientation” and support from supervisors and
colleagues, “new teachers will spend a great deal of time in their first year with personal concerns” (p. 86). I have applied the phases of concern to new tutors in an effort to understand and explain some of the differences in their growth as tutors.

The expanded version of the phases of concern (Hall and Loucks, 1978, as cited by Reiman & Thies-Sprinthall, 1998) also included the feelings associated with each of the six phases, and the feelings were relevant to the theme “quality of the tutoring experience”. In the first phase, an individual might begin by feeling apathetic (0), or curious (1), or anxious (2). In the second phase, the individual is likely to experience some frustration (3), and in the third phase, the feelings might range from puzzled or successful (4) to excited (5), to confident (6). The three narratives I developed illustrate three tutors’ movement through the phases of concern and relate the tutors’ feelings to those phases. The phases of concern are consistent with the research by Hunt (1971), Kegan (1982), and Rest et al. (1999b) which showed that as people develop cognitively and ethically, they become less self-involved and are more concerned with their impact on others. Rest et al. (1994) explained the stages of ethical development in terms of levels of cooperation with others where individuals at lower stages of development are less able to cooperate with others than are individuals at higher stages of development who value the mutuality in relationships and are inclined toward interdependence.

The three participants selected for further study through the narratives can be observed to interact in different ways with the Teaching and Learning Framework and to change at different rates and in different ways. By examining the differences in their
experiences, I hoped to learn more about the mechanisms of change (research question 4) and to apply my new understanding to improving the Tutor Development program.

Results: Three Narratives

In this section, I present the three narratives that resulted from my qualitative analysis of journals, Learning Center records, Tutor Development class assignments, transcripts of interviews and tutorials. For the convenience of the reader, each narrative is preceded by the assertion about that tutor. The order of narratives – from Carolyn to Eric to Melinda – is intended to emphasize similarities and differences in their experiences which are then summarized in the discussion.

Carolyn

Assertion: Carolyn, Participant 1, is an example of an individual who scored at high stages of conceptual and ethical development and functioned as a tutor at a high level of complexity.

Carolyn, Participant 1, was a 46 year old mother of four children who had completed one semester at our college when she was recommended by her Freshman English teacher to be a writing tutor. After taking college courses in business at another college, she had transferred to our college to pursue a major in biology; she was officially a sophomore when she became a tutor. When I interviewed Carolyn shortly after she began tutoring, I asked her, “If you were to describe your educational experience in terms of a map, what would it look like?” “A very bumpy road,” she said. “I didn’t have a lot of enthusiasm for it [education] or respect for it for most of my life” (Interview 1). Carolyn quit school at the end of her junior year when she was 17 years old because her
"religion taught the end of the world was coming" (Interview 1), and she saw no reason to stay in school.

After 15 years of marriage and four children, Carolyn began working part time at a mental health facility, and her interest in education was awakened; eventually she left the religion that had influenced her quitting school. "I was just learning things that brought into question for me what I had believed....I knew then there was so much I wanted to learn" (Interview 1). With encouragement from a co-worker, Carolyn got her GED when she was 33 years old. As a college student, she had "this huge curiosity... to know why and to understand things" (Interview 1). Her curiosity -- her "passion for learning" -- (Journal 1) became evident in her participation in the Tutor Development course and in her journal entries. Her taped tutorials and journal entries suggest that Carolyn was functioning at a high level of complexity.

Tutors who function at higher levels of complexity are better able than are tutors at lower levels of development to attend to the interpersonal dimensions of tutoring (Reiman & Thies-Sprinthall, 1998), to detect problems and take steps to solve them (Mann, 1993, 1994), to use effective tutoring strategies and adapt them to the individual tutee and the tutoring situation (Oja & Reiman, 1998), to reflect on their experience and connect it to theory and previous experience, examine their assumptions, beliefs, and behaviors, and make appropriate changes (Reiman, 2000). Carolyn exemplifies an individual who scored at high stages of conceptual and ethical development and functioned at a high level of complexity. The account of Carolyn’s experience as a tutor illustrates the theme of how individuals’ levels of cognitive development influence their
abilities to conceptualize their roles as tutors, to utilize effective tutoring strategies, to reflect on experience, and relate theory to themselves and their practice.

*Conceptualizing Her Role*

When she first became a tutor, Carolyn's conceptions of teaching and learning extended beyond the transmission and acquisition of information. She conceived of teaching as "more than just passing on knowledge and facts. It's passing on a passion to know things, an excitement about the subject, and skills on how to learn things that are hard" (Interview 1). Her definition of learning followed a similar line of thinking: "Learning is getting more than facts; it's getting concepts. It's the ability to see things in a new way because you've learned a certain thing that broadens the way that you view the world" (Interview 1). In her journal, Carolyn added: "Learning is drudgery without passion.... The student who learns well must understand the relevance of the facts before him/her. *Why* am I studying this? *How* is it related to my life, interests, and values?" (Journal 1). I was impressed with Carolyn's broader conceptions of teaching and learning because in my fifteen years of experience of educating tutors, I had found that most new tutors conceptualized teaching as transmitting information and learning as acquiring information. Carolyn's definitions suggest she was disposed to entertaining new ideas, viewing information from different perspectives, and contextualizing the information in meaningful ways.

Carolyn's conception of tutoring added a personal dimension to her view of teaching and learning:

Tutoring is a special opportunity to mentor a student. It involves the development of a special relationship, based upon trust and empathy.
Teaching generally involves an authority figure (the professor) imparting specialized knowledge to a group of students. The most dynamic of teachers, however, does not have the time to develop one to one relationships with students. Tutors do. Often times, this personal (albeit still professional) quality can mean the difference between getting by in a course and developing a love for learning (Journal 1).

Carolyn’s view of tutoring as a personal relationship with the tutee was a recurring idea in her journal entries, and the nature of the relationship became evident in her taped tutorials.

In addition to defining tutoring in the journal, tutors were asked during the first Tutor Development class to create a metaphor that described themselves as tutors and their orientation to tutoring, and to explain why they chose the metaphor. Carolyn’s metaphor was Kathryn Hepburn in her role in “African Queen.” She explained:

I have seen Hepburn’s “African Queen” a multitude of times and have learned something new about strength and beauty and quiet intelligence every time. I hope as a tutor to exude the same warmth and excitement with life and learning to my peers. This is the most important value I wish to offer: excitement with the written word and the skills to express one’s heart on paper (in-class Metaphor Survey 1).

I find it interesting that when Carolyn re-capped her metaphor in the third and final interview, she explained the metaphor a little differently. She said she had wanted “to be like Katherine Hepburn because she was this strong powerful woman that people looked up to and they could trust” (Interview 3). Instead of focusing on the “warmth and excitement with life and learning” she had described earlier, Carolyn suggested that initially she had an image of a tutor as a person whom people could trust to have the answers.
In the same interview (3) she said, “Thinking I’m supposed to know all the answers is probably what keeps getting in my way.” At least in the beginning, the feeling she had to have all the answers made Carolyn feel insecure, and to her the greatest challenge initially appeared to be overcoming her insecurity. She worried about giving tutees feedback that differed from the instructor’s. During her second week as a tutor, she wrote:

My dilemma: What if the original paper is actually excellent in the professor’s view? How will it be for the student if he modifies his next paper as [I] suggested and finds that the first one was better? I will certainly lose credibility as well. ... My greatest challenge is insecurity about the level of skill I really have (Journal 1).

Carolyn’s insecurity and concern for herself and how she would be perceived would be considered natural or “normal” by most developmental psychologists (Sprinthall, Sprinthall, & Oja, 1998, p. 426). New tutors, like new teachers, are likely to go through a phase of “self-concerns” during the initial disequilibrium produced by taking on a new role (Fuller, 1969, as cited by Sprinthall, Sprinthall, & Oja, 1998).

Carolyn’s insecurity persisted until mid-semester. In her mid-semester self-assessment, she digressed from the journal prompt that asked her to describe how she felt about being a tutor and wrote about her experience working in the field of mental health as a non-degreed person. She said that at that time she had “felt like a fake”.

I continue to struggle with the same issue even in this setting. I question my ability to tutor others when I am just beginning my college career. If it were not for the ongoing TD classes and the support of the LC staff, I would not be doing this at all. On the other hand, it is clear to me that many of the students in 401 English do need the kind of help I can provide, as their writing skills are often poor and some of them do not even read well. As I read more and more of their essays, it increases
my confidence that I have something to offer, that I am not faking. This inner struggle makes the tutoring seminar and tutoring itself a generally greater struggle than I expected it to be. In this way, it is very draining. At the same time, though, I know that this means it is a valuable part of my journey. It is certainly true for me that tutoring will continue to change my perceptions about academic life in general and particularly my place in it (Journal 6).

As we will see, Carolyn gained confidence as a tutor over the course of the semester and was reassured she was not “faking.” She began to worry less about having all the answers and to focus more on building “special relationships based on trust and empathy” with her tutees.

**Attending to the Interpersonal Dimensions of Tutoring**

Establishing the “special relationship” with her tutees was important to Carolyn, and her experience as a classlink tutor afforded her the opportunity to develop such relationships. She worked with a total of 14 students; thirteen were students from the Freshman Composition class with which she was linked whom she described as “those who love to learn” (Journal 1).

For the most part, Carolyn worked with her tutees in the English classroom, but she worked most closely with three students in the Learning Center. The relationships that built with these three tutees are best illustrated in her interactions with Susan, her most regular tutee. At the end of her first month of tutoring Susan25, Carolyn wrote:

> She is very bright and motivated, but she is one of the most insecure writers I have seen. It seems that the harder she tries, the more problems she has with her essays. During her conference with the professor, she received some constructive criticism and was devastated. She admits to getting so anxious around her papers that she loses all focus (Journal 3).

25 The quotations from journals, taped tutorials, and interview transcripts were altered to omit the names of teachers and students. To improve readability, the tutees with whom tutors worked most often have been given pseudonyms.
This exchange suggests that Susan trusted Carolyn enough to discuss her anxiety with her, but at this point Carolyn was not sure how to help Susan. In responding to Carolyn’s journal, I suggested that she ask Susan to complete the Writing Anxiety Checklist (Longman & Atkinson, 1994, p. 228), and she did.

Susan agreed to be the tutee for both of Carolyn’s videotaped tutorials. In the first tape (mid-semester), Carolyn opened with a discussion of Susan’s responses to the writing anxiety checklist. The following dialogue is excerpted from the transcript of that videotape.

C: Of these things on the writing anxiety scale, is there any thing that you would address if you could?

S. Yes, it’s these ones right here. [She pointed to the following: 15. “Writing makes me feel nervous. 16. Writing makes me feel depressed. 17. Writing makes me feel frustrated” (Longman & Atkinson, p. 228)]. They were a no brainer. It’s just all that I feel when I write.

C. [Looking over the responses on the scale] So then, the writing makes you feel nervous, depressed, and frustrated?

S. Um hmm.

C. The revision -- tell me about how that worked for you.

Susan described her interaction with the professor and then she returned to the subject of writing anxiety.
S. Coming up with a thing to write fills me with anxiety and nervousness. And, depression comes in when you think you can’t do it. So, I feel like a failure because words don’t come.

C. Do you get any of these feelings when you have conferences with him?

S. No. No, I think it’s just the writing process. When he, or my husband who is also helping with my papers, -- when they explain where the paper needs improvement, I’m calm with that. I can see it and understand it, but when they make a comment like, “You need to change this around so it will appear like this”, I’m not certain how I’m going to do it. That’s when I get anxious. Really, I cry over writing.

This exchange suggests that Carolyn had established with Susan a relationship built on trust because Susan was willing to discuss her writing anxiety with Carolyn. However, at this point in the tutorial, Carolyn did not suggest ways of dealing with the anxiety but instead suggested they discuss the paper which Susan was struggling to revise.

Choosing Effective Tutoring Strategies

Before reading Susan’s paper, Carolyn checked her understanding of the professor’s feedback by asking questions: “When I took his class last year, I found he was pretty specific about the changes he wanted to see in the revision. Did you find that?” “Did he [the professor] find the topic was a little too broad?” Assured that the professor had not raised the issue of focus, Carolyn proceeded to read the paper. Then she said:

C. This is excellent. This is an awesome paper.
S. Really? I was afraid I made it worse.

C. Well, on the first re-write you did, but this time, you didn’t.

S. I made a lot of rewrites, like in the introduction, some of the order, but there were things I left out. That was one of the questions I had for you. There were some things that I wondered if I made it worse by leaving it out.

C. Like what?

Susan showed Carolyn her original essay and indicated what she took out using feedback from her fellow students, Carolyn, and the professor. Carolyn agreed that omitting some of original was appropriate, and to illustrate her point, she read the original version aloud and directed Susan to read the revised version. When Susan did not understand Carolyn’s point in the re-reading, Carolyn read the original version aloud again and asked questions.

C. What is that saying to a person who doesn’t know what you’re talking about?

S. I suppose what I’m saying there is what I’m saying here.

C. Ok. If you say it this way, will they understand this point?

S. No, because if I did what that... if you overemphasize a point, it makes it worse. Right?

C. Has he talked to you about writing a paper for someone so they can see it?

S. Yes, Don’t tell them. Show them. So if I show them then tell them... All right.

Carolyn allowed the tutee, who was not yet satisfied with her paper, to set the direction for the tutorial by pointing to parts of the paper she wanted to work on. The introduction was still troubling Susan, so Carolyn again read the original version aloud,
had Susan read the revised version, and continued her practice of asking questions. “Do you think where you wrote this [pointing to page] in the second paragraph that you’re repeating the thought? .... What is the part that is bothering you?”

Carolyn’s preferred way of assisting students was to use indirect tutoring strategies such as asking questions that invited clarification and elaboration, encouraging Susan to discover ways to improve her paper, and offering positive reinforcement. However, at times Susan wanted more direction because she did not see how she could make changes in particular areas. When Susan appeared to be frustrated, Carolyn offered feedback that was phrased cautiously as a question or suggestion.

C. I’m wondering if this issue of being afraid could be used better in this sentence. When you say, “going back in time”...

S. Well, I’m trying to show it happened a long time ago.

C. Would it make sense to make a different paragraph about being a young mother?

S. Is that OK to do that?

C. Yes, but tie them together. This is a warm wonderful memory that reinforces those warm, comforting feelings of this place. I would suggest expounding on that more.

S. And start a new paragraph there?

C. Yes, but make sure you have a transition from one paragraph to the next.

S. I just want it to be right. [Susan begins to weep.] I’m sorry. It’s not you. I’m just very upset.

C. It’s basically what you have written.
S. Yes, but it’s more words.

C. What about the suggestion of talking into a tape recorder?

S. I will try that. I can do that.

C. Look how much you’ve done. You have a cohesive paper. You’re not moving back and forth. There was only one sentence and paragraph where I had a little trouble. That’s pretty good!

As an active listener attuned to her tutee’s anxiety and need for direction, Carolyn was able to adopt more directive strategies such as explaining and suggesting ways Susan could change her paper. As Carolyn was introduced to tutoring strategies in the Tutor Development class, she became adept at choosing the right tool for the situation.

Carolyn was attuned to Susan’s need for structure and sensitive to the risk of creating dependency when a tutee needed a lot of direction. For writing tutors, knowing how much help to provide is an ethical question, not just a practical one (Wingate, 2000). The following excerpt shows that Carolyn recognized the risk, but she trusted her tutee’s abilities and instincts, especially when the tutee herself raised the question of dependence upon others for help.

S. All I have in mind is, “Is it right? Is it going to get an OK grade?” So when you’re making these suggestions, I feel like I should make them. I noticed on the quiz [Writing Anxiety Checklist] the reference to objective and subjective. This isn’t really objective. Drives me nuts. Tell me the right words. Tell me what’s the proper thing to do.
C. The proper thing is, if you can read this paper out loud, and you feel this paper is getting the feeling across that you want to get across, (and it really is), it’s good. I do think he would probably pick up on the other two sentences we worked on, though. When you read this paper, do you think the reader can get the feeling you’re trying to create?

S. Yes, but, I want it to be correct. Another thing... What is the amount of help that is still about the writing process? What am I trying to say? How much help do I get before I’m cheating? For example, my husband gave me a phrase that I used. Is that cheating?

C. I think you need to pay attention to your fears. But, if you can read this paper ... Can you say this is basically my paper?

S. Yes, but I changed some things because of someone else’s suggestions, so I feel like, should I have picked that up myself? Should I have done that myself?

C. Do you think that after you do this awhile, you’re going to be able to pick it up?

S. Yes.

C. That’s what’s important. Because you’re picking up the process. If you were coming to see me three times a week and you had no idea what you wanted to write about, and you were like, “Write this for me,” that would be wrong. Then there’s the other extreme of never asking for help. If you feel from one week to the next that you’re getting it...

S. I think so. This week I understood a concept you and my husband had explained.
C. Trust your instincts and trust your skills. I’m so impressed with this paper. But before you go, let’s come back to the writing anxiety survey. What things do you think might be helpful to you?

Carolyn went on to suggest strategies Susan could use to get past the writer’s block created by the anxiety, strategies such as free-writing to generate detail, taping herself while telling her story, and getting a writing group together in her class. Carolyn confirmed that Susan’s practices of pre-writing and using the computer were good strategies, as well. In closing, she advised Susan to talk to the professor about any of his feedback she did not understand.

In her second taped tutorial with Susan, Carolyn continued her practice of using indirect methods at the beginning of the tutorial and offering more direction when necessary. They were meeting to discuss Susan’s progress with her research paper. As usual, Carolyn asked an open-ended question that would allow Susan to set the direction for the session.

C: How do you feel about this paper so far?

S. Oh, it’s hideous.

C. Because…?

S. I’m intimidated by the different type of paper and the size of it, and I feel like it’s more of something weighing over me where it’s a longer paper with all the research. I find it more intimidating.

Carolyn acknowledged Susan’s uncertainties about the research paper and fielded her questions about the research process and the paper; sometimes she referred Susan to the
textbook and the suggestions for note taking and organizing research. Susan confessed that she was having trouble finding the passages she wanted in the articles. Carolyn recommended making note cards and then shifted the conversation to how Susan was feeling about writing now that the semester was almost over.

C. Actually, I wanted to ask you how you’re feeling about writing now. I know it’s not your favorite thing, but compared to when you first started...

S. I don’t think I dislike it as much. I realize I was intimidated by the three-page papers. I’m past the intimidation of the three-page paper, after writing 10 of them, but now I’m intimidated by the nine-page paper. So, I still have a lot of apprehension about it.

C. Do you feel more confident when you write?

S. I feel more confident in my ability, and I don’t need an inordinate amount of help. I don’t need the same amount of hand holding and assistance when I write. When you get going in the college process, how... When do you start to work more independently?

C. Do you remember when I came over to you in the library and was going to help you with your paper? Do you remember what you told me?

S. No.

C. You said, and I just said this to Margaret, “This is the way I want to do it,” basically. “This is what I’m thinking.” Do you think you would have said that at the beginning?

S. No, you’re right. I just would have said – oh, I’ll do it differently. You’re right.
C. You really have made a lot of progress. And after you do a couple of these things [research papers], you will feel more confident.

Carolyn wanted Susan to see how much more independent and confident she had become as a writer. Still, Susan needed more direction in some areas, so Carolyn moved between indirect and direct tutoring strategies to help Susan move forward with her writing.

When they had finished discussing the outline, Susan asked Carolyn to read the paper itself:

S. I'm not sure the thesis statement is really there. I don't know if it says what I want to say.

C. What do you want to say?

S. I just want to make sure that my thesis is clear and I remember that when I first gave the topic to you and the professor, you were both still questioning what is my thesis.

C. So, tell me what your thesis is.

[Susan summed it up.]

C: So, are you writing about the feasibility of food being addictive? You used a good example, but it feels more like a story.

S. There was an example in our book that presented an example first and then the thesis. I was modeling this paper on that example.

C. You can do that, but somehow, you have to focus more on the thesis before going any further. [Carolyn hands Susan a paper.] Here, write on there, “My thesis is...” What?
S. [after writing] My thesis is that food addiction is a major contributor to the obesity epidemic.

C. Ok. Does that address everything?

S. We need to acknowledge it, research it, and treat it.

C. Now look at your story about Mary. Is there anywhere you could put this statement?

Carolyn responded to Susan’s doubts about the thesis by identifying a weak point, but she then used questions to help Susan revise it.

Next, Susan asked for help in citing sources using MLA format. “How do you cite an internet source when there’s no author?” Having gotten beyond the fear of not knowing the answer, Carolyn responded, “Good question. Let’s look it up.” She took out two handbooks, and she and Carolyn looked at them together. Susan located the answer first, and Carolyn commented, “OK. You got your answer.” By this time in the semester, Carolyn seemed to be comfortable letting her tutee know that she did not have all the answers, and she was able to show Susan how to find the answers for herself.

Having worked several hours with Susan over the semester, Carolyn chose to write her case study for the Tutor Development class about her experience with Susan; she entitled the paper “A Tutee’s Journey: From Anxiety to Confidence.” In her paper, Carolyn asserted that when she first met the tutee, Susan “could not function with the ambiguity inherent in creative writing”. In Carolyn’s view, Susan “lacked confidence rather than ability and her feelings of inadequacy were crippling her. She needed some direction with her writing, along with a huge infusion of confidence” (Carolyn’s case
Although Susan returned for a tutorial almost every week, Carolyn was convinced “something good was happening to Susan. She was using her own voice.” Carolyn wrote:

Susan soon showed more evidence of this growth when, after hearing my suggestion concerning the wording of a certain phrase in one of her papers, she gently replied, “I hear what you are saying, but I prefer it this way.” This was the best rejection I have ever gotten! (Carolyn’s case study).

Active listening, empathic response, and flexible application of tutoring strategies characterized Carolyn’s tutorials. To some extent her tutoring strategies were the result of her reflecting upon her tutoring experiences, applying theory and making connections in her journal between her experience and the Tutor Development class.

Reflecting on and Connecting Theory to Practice

After reading about theories of adult development proposed by Perry (1970), Baxter-Magolda (1992), and Belenky, Clinchy, Goldberger, and Tarule (1986), Carolyn wrote a journal entry describing Susan in relation to the profiles of student development she had read.

One of my tutees, despite being a non-traditional student, appears to be stuck in dualistic thinking. This person seems to be basing her progress solely on the grading policy of her teachers. I have seen her make tremendous progress in her writing skills, and when asked, she will say that she feels more comfortable about her essays. At the same time, she is greatly disturbed by the constructive criticism of her professor, even being brought to tears at times in his bi-weekly conferences (Journal 8).

Although Carolyn had only begun to grasp the developmental theories, her journal entries and tutorials provide evidence that she was accepting of her tutee’s attitudes, feelings, and level of development.

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As a reflective person, Carolyn was able to meet, even exceed, the class goals of applying the readings and class discussions to herself as a person. I have defined reflection or reflectivity as the process of looking inward, examining one’s assumptions, beliefs, and behaviors in light of new experiences and new information. When individuals are able to reflect on their own behaviors, they are able to adapt and adjust to many situations. Carolyn demonstrated her ability to make meaning of new information and experiences and integrate it with prior knowledge. For example, after reading Lepper et al. (1997), Carolyn wrote:

Ignoring lower-level errors initially is very important, as many of the students who have writing issues get stuck in this pattern themselves and don’t need us [tutors] to encourage such disruptiveness. On the other hand, if a particular writer commonly errs in a certain way, perhaps grammatically, it makes sense to nip this in the bud. For example, a female student I work with goes off on tangents both in her writing and in her speech; knowing this, it is appropriate and helpful to keep her focused on the main point while composing (Journal 5).

Carolyn’s journal response goes beyond reacting to the article and beyond summary to suggest her empathy with students who “get stuck” and her application of the reading to her practice.

Some reading and journal assignments asked tutors to reflect on themselves, their own lives, and connections to the readings. After reading about theories of adult development, Carolyn wrote:

My life has been full of developmental challenges, and I have had to ponder over fundamental life decisions. Many of the choices I have made have required me to look beyond the institutional learning of my childhood and examine intensely the world around me and my place in it. I have come from a place where right and wrong were prescribed, good and evil clearly defined, and independency of thought unilaterally condemned. Getting beyond that rigid fanaticism has required me to
question generally accepted beliefs, gather my own facts and form fluid opinions rather than judgments. For this I am profoundly grateful (Journal 8).

Carolyn had experienced and practiced rigid ways of thinking earlier in her lifetime, and by examining her beliefs, she had moved to a new way of viewing the world. As a reflective learner, she gained insights into herself. For example, in Tutor Development class, she learned about “the different ways people view authority, like the early learners. It’s like you have to go to the authority and get the answer. I actually found I was still doing that in some ways. So that was kind of a wakeup for me” (Interview 3). Carolyn was open to re-examining her ways of thinking and her behaviors; such self-examination is one of the behaviors considered by all the theorists described in Chapter 2 as a mark of growth toward higher stages of development.

Carolyn’s personal code of ethics as a tutor is further evidence of her growth toward more complex ethical reasoning. Interestingly, when she first wrote her code of ethics, she wrote imperative statements, such as, “Come prepared. Tutees deserve attentive and thoughtful assistance” (Journal 7). In their feedback to Journal entry 7, both instructors asked Carolyn to revise her code of ethics in Journal 14 and to use the first person. At the top of the page Carolyn wrote: “This [personalizing the code of ethics] is hard because I came from the old school of writing; never use I” (Journal 14). The following is her revised code:

1. I will come prepared for sessions, because tutees deserve competent and thoughtful assistance.

26 Unfortunately, I did not ask Carolyn to elaborate on this statement when I interviewed her. I can only speculate that this statement was related to her need to have all the answers, which suggests she may have felt there were definite answers to the questions.
2. I will show respect for my tutees, knowing that it takes courage to ask for help.
3. First, I will listen to my tutees and encourage them to choose the area they wish to receive assistance with.
4. I will acknowledge the limits of my expertise and research any questionable issues.
5. I will ask another tutor to step in when needed in order to provide the tutee with the most help possible.
6. I will trust my tutees' ability to learn at their own pace and with their own style.
7. I will never insult or demean a tutee nor will I criticize a teacher.
8. I will give my tutee genuine, honest praise and encouragement.
9. I will honor the tutor/tutee relationship with the realization that it is a two-way street, and that I can learn from my tutee at the same time as they learn from me.
10. I will remember that the ultimate goal in a tutoring relationship is to empower my tutees to use their own voice and become self-confident learners (Journal 14).

Carolyn's code of ethics as a tutor suggests that she moved away from self-concern with her insecurities as a tutor (Journal 1) and toward concern for the tutee and his/her needs. Her code of ethics also testifies to her respect for her relationship with the tutees and her view of tutoring and learning as "a two-way street."

**Dealing with Personal Issues**

Carolyn was upbeat and enthusiastic about her tutoring experience for most of the semester. After one month, she wrote:

I am much more comfortable than I thought I would be. The students in 401 are quite willing to let me assist with their papers; usually there are more than I can handle in the allotted time. The tutorials are also very satisfying, for the tutees as well as me. (At least that is what they tell me!) (Journal 3).

In her mid-semester interview she described her experience as "satisfying but far more time intensive than I was expecting" (Interview 2). Carolyn was kept busy both in the class-link and in individual tutorials, and by mid-term she had logged 23.75 hours of

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tutoring; the length and quality of her journals suggest she spent considerable time on them, too. She became concerned about the amount of time she devoted to the Tutor Development class and tutoring, but time was only one of the reasons Carolyn's involvement in the tutoring experience declined after mid-semester.

A few weeks later, her estranged father died, and her youngest daughter ran away. Carolyn was pre-occupied with her family problems for the remaining weeks of the semester and into the next. Outside of talking to me and the co-instructor, Carolyn had little support at school for dealing with her personal problems. No personal counselor was available on campus, and the co-instructor and I felt rather helpless in our attempts to support Carolyn during this period, other than by listening and empathizing. She did not seek support outside of school, perhaps for financial reasons. Upon reflection, I believe I should have taken a more proactive role in getting Carolyn connected to some personal counseling that might have helped her cope better with the home problems. As a result of her personal problems, she missed three classes, chose not to write two journal entries, and attended the class-link less often. Thus she tutored fewer hours, logging only five hours of tutoring during the last seven weeks of the semester. Because she could not give up being a mother, bereaved daughter, or student, Carolyn gave up the only role she could, and she chose not to continue in her tutoring role the following semester. However, Carolyn returned to work as a tutor a year later when the home problems had been resolved.
Recapping the Changes in Carolyn

Carolyn’s participation in the instructional component of the Teaching and Learning Framework was somewhat impacted by her family problems. She missed three classes, but when she was there, she participated fully and enthusiastically in demonstrations, role-playing, and discussing the readings. Her journal entries provided evidence of her thinking about the theories and her applying them to her tutoring. Despite her problems, she met the developmental conditions of the framework – a helping role, reflection, a balance of experience with reflection. She found support among her peers and supervisors to meet the challenges of tutoring; what she lacked was support for her personal challenges.

Given the extent to which she participated in the Teaching and Learning Framework, the research would suggest Carolyn’s scores would increase on the quantitative instruments. However, Carolyn received high scores on the PCM and DIT-2 at the beginning of the study, and her scores remained high on the PCM and DIT-2, making it difficult to measure change. Likewise, she had moderately high scores on the journals from the beginning and both tutorials received high ratings, again making it difficult to measure change. Nevertheless, there is evidence in the further analysis of Carolyn’s journals, interviews, metaphors, and her case study that there were positive changes in her thinking about tutoring and in her performance as a tutor.

Commenting at the end of the semester on her initial metaphor of being “a strong powerful woman” like Katherine Hepburn, Carolyn said: “I don’t feel like that anymore. So I must have changed. I think I felt more like an authority when I first started. ... Now
I see myself as a peer, which is what I am” (Interview 3). Her metaphor for tutoring at the end of the semester was “a paisley-printed, all-season wood nymph” which she chose “to describe the changing and intricate nature of tutoring.” Elaborating on the in-class metaphor survey at the end of the semester, Carolyn wrote:

I have experienced highs and lows in this process; it is certainly a mixed-bag of complexity which I did not expect. The tutoring role is much more a give and take relationship as opposed to my original view of myself (tutor) in the role of the strong women (Hepburn) who has awesome answers (scripted of course) (Metaphor Survey 2).

The change in metaphors for herself as a tutor is perhaps the most dramatic indicator of change in Carolyn, but there were other indicators. For example, she came to see that her role was “to help [her] tutees to learn how to learn as opposed to just telling them the answers” (Interview 3). There was an obvious shift in her concerns from a focus on herself as the insecure tutor to a focus on the impact of her tutoring and the needs of her tutees as people and as learners. Her journal provides evidence of her continued self-examination of beliefs and behaviors, which leads me to believe that Carolyn was continuing to develop through her tutoring. The characteristics Carolyn demonstrated as a tutor – attention to the interpersonal dimension of tutoring, use of effective tutoring strategies, flexibility and reflectivity – indicate that she usually functioned at a high level of complexity. She is an example of how developmental level affects the individual’s experience (Oja & Sprinthall, 1978), his/her ability to tutor effectively (Oja & Reiman, 1998), and his/her ability to analyze and reflect on the experience (Reiman, 2000).
In the next narrative, I describe the tutoring experience of a young male mathematics tutor. Although there are some similarities in the two tutors’ experiences, such as dealing with personal problems, the differences are more apparent than the similarities.

*Eric*

Assertion: Eric is an example of an individual whose development as a tutor – i.e. the changes in his thinking about tutoring and his performance – was impacted by his conception of his role as a tutor, the quality of his experience, his self-concerns, and the degree to which he engaged in the tutoring experience and fulfilled the conditions of the Teaching and Learning Framework.

Eric, Participant 8, was a 20 year old man who had been recently admitted to a degree program at the college and wanted to pursue an environmental biology major, so he was taking the pre-requisite mathematics courses. He did not perform well in a pre-calculus class the first time he took it, but he earned an A the second time, and his teacher recommended him to be a mathematics tutor. The teacher said she was impressed with the fact Eric recognized that he needed to re-take pre-calculus before taking calculus, and she felt he would understand the difficulties students had with the subject.

The pre-calculus class was not the first time Eric had stumbled in his academic pursuits. Although he did “very well” in elementary school, “did fine” in junior high school and into ninth grade, but high school “got really bumpy” and he “just barely graduated out of high school” (Interview 1). Despite his dissatisfaction with high school, Eric wanted to pursue higher education rather than “get right into the work force” and he
“wanted to keep learning” (Interview 1). By succeeding in college courses as a continuing education student while working at a pizza parlor, he proved to himself that he could become a degree student. When he became a tutor, he was a matriculated student with sophomore status.

At the beginning of the semester, Eric scored at the moderate stage in conceptual level and ethical reasoning. We could expect him to learn to function at a moderately complex level of tutoring because an individual’s cognitive-developmental stage has been found to predict performance in complex tasks, like in the field of teaching (Reiman & Thies-Sprinthall, 1998). The “moderately complex” category of tutoring that I developed based on the cognitive complexity theories discussed in Chapter 2 (See Tables 2.1, 2.2, 2.3, 2.4, and Appendix F) suggests the following tutoring behaviors: the tutor is able to be flexible and adapt his/her tutoring to the individual and the situation, employing non-directive and directive strategies as the situation demands (Reiman & Thies-Sprinthall, 1998); he is able to entertain more than one point of view, engage in abstract thinking about issues (Hunt et al, 1978), acknowledge there is more than one way to solve a problem (King & Kitchener, 1994), and encourage the tutee to ask questions. However, he may also be too quick to evaluate the tutorial or make judgments about the tutee (Mann, 1993). A tutor operating at a moderately complex stage might also be expected to acknowledge learning style and cultural differences and postpone beginning the tutorial until he has determined a tutee’s prior knowledge and understanding of the task/problem by asking questions or inviting the tutee to explain his/her understanding of the task or problem. He could be expected to promote a dialogue with the tutee and
attempt to practice active listening. A tutor operating at this stage would tend to overlook some trivial errors and later inquire why the tutee took a particular approach (Lepper et al., 1997), but at a moderate stage of development, it would not be unusual for the tutor to become frustrated when a tutee did not understand the task or the problem.

This account of Eric's experience as a tutor shows that it was “a bit rocky,” (Journal 6) and he did not demonstrate the characteristics of a moderately complex tutor for most of the semester. His development as a tutor, his thinking about tutoring and his performance in tutorials, was impacted by his conception of his role as a tutor, the quality of his experience, his self-concerns, and lack of engagement in the tutoring experience which included attending class, completing reflective journal entries on time, and meeting his obligations to his tutees.

Conceptualizing Teaching, Learning, and Tutoring

As a new tutor, Eric held a transmission model of teaching and learning. In response to the prompt “Define teaching, learning, and tutoring,” he wrote: “Teaching means that you impart or give knowledge of or skill in; to give instruction. Learning means that you are acquiring knowledge of or skill in by study, experience, or instruction” (Journal 1). In his first interview Eric added that learning occurred “through lecture, experience, or knowledge”. Tutoring, he wrote, was “identical to teaching but on a lesser scale. A tutor acts as a teacher or instructor who assists students to prepare for school, exams, training, or discipline” (Journal 1, bold was in the original journal). In commenting on his definition for tutoring, he said, “I put in the word assist because it
isn't exactly like you are a teacher teaching. You are there to help them out, but you are not the only person doing the teaching” (Interview 1).

Throughout the semester, Eric was reluctant to see himself in an instructional role or to provide structure for a tutorial or study group, particularly when he worked with non-traditional students. After his first month, he wrote, “It is hard for me not to feel overbearing or uncomfortable teaching someone who is twice my age and in a lower math class” (Journal 3). Instead, Eric preferred to see himself “as a buddy who can help you and does not grade your work” (Journal 12). He reaffirmed this notion of the tutor as buddy and his dislike of the idea of tutor as teacher in his exit interview when he said, “I try to be like a buddy instead of a teacher. I don’t like thinking of myself as a teacher” (Interview 3).

Eric’s desire to be a buddy was consistent with the way he described the main challenge he thought he faced as a tutor: “My greatest challenge as a tutor will probably be trying to meet my tutees on their level. This means being empathetic to their needs, discovering their learning styles, and finding the proper one for me to use to best suit their needs (Journal 1). Eric’s first journal entry suggested he was sensitive to differences in students’ needs and learning styles, but his experience shows that he had some difficulty adapting to the differences. He, like most tutors, had doubts about his tutoring abilities. He wrote, “I am excited to be tutoring. However, having no experience in it, I question my ability to do well” (Journal 1). His self-doubts persisted throughout the semester.
Eric was slowly immersed in the tutoring experience. At first he worked only with students in study groups for pre-calculus and for algebra 1, and after his first month as a tutor, he wrote:

Since the beginning of the school year I have slowly begun to help tutor people. I have not had a one on one tutorial nor am I class linked. However, I have had my series of study groups and drop in Math. I have seen several students regularly in study groups and have begun noticing certain aspects in their behavior. At times I get a rush of excitement when I know what to tell them, or think I know what to tell them to aid them in their problems. And at times I become frustrated when I don’t get thru [sic] to a tutee because our learning styles are different or I cannot understand why a person does not understand what I am saying. I feel like a tutee isn’t getting it but they say they do. I feel this way because their grades are not so good on their quizzes (Journal 3).

Despite his frustration with some tutorials, he was still happy in his new role. After a month he wrote: “At this point I am pleased with my progress as a tutor. I do know that I have a long way to go and I may be slower at picking tutoring up than others. It is definitely a positive experience for me that is very healthy. I want to be better at it but that takes time and experience” (Journal 3). Eric was right in his conclusion that becoming an effective tutor would take time.

Dealing with Personal Issues

In taking on the new role, Eric’s major concern was dealing with what he called “outside factors,” and time management, stress, and lack of structure in his life. When I first interviewed him, he told me, “I’ve always enjoyed learning and stuff like that, but I find that sometimes outside factors can really get me off track” (Interview 1). He defined outside factors as “parents, friends, just not understanding things or not being able to communicate. … Just outside factors that distract you from, you know, from doing your
work. Or like, if you worry too much about something” (Interview 1). Eric expressed his awareness of his problems with organizing his life, and his hopes that being a tutor would help him get more organized.

Usually I don’t have any structure. My lack of structure could definitely leak through in my tutoring. Like I’d be worrying about time. I don’t want to be late. Like my time management is a big thing. Like, I came to be a tutor because I wanted structure. I wanted, like, a set schedule. This is where I should be, and this is what I should do. I was hoping that being a tutor would help me gain structure. ....You know, like I didn’t sign up to be a tutor for the paycheck. I signed up for it to get more of an interaction with people, to get more structure and more time management, and keep my math skills a little more on edge instead of being rusty. So it was kind of a refresher to life. Like a refresher in math, refresher in people, refresher in relationships, in teaching, learning (Interview 1).

Eric’s concern with “outside factors,” time management, personal problems, his study habits, and his lack of structure became a theme in his journals, beginning with the first entry.

I am very concerned with my time-management. My skills in this area are in serious need of an overhaul. Also, off the subject of tutoring, I have a lot of stress at home that could affect my schoolwork just by worrying about it and such. Nothing serious, just lots of little things (Journal 1).

Eric’s supervisor — the co-instructor for the Tutor Development class who oversaw mathematics tutors — responded to his journal and offered to meet with him to work on time management. She also inquired what resources he had for handling the stress at home. It appears that he either was not reading the feedback or not taking the feedback seriously, given that two weeks later he wrote:

I am concerned at this time about transportation to school and my availability due to the fact that I lost my car to an accident and must rely on others to get me here and back. I am under a lot of stress and just trying to make do. This isn’t saying I am overwhelmed but in the past week I have noticed that I am falling behind in my schoolwork.
because I am trying to get my life at home on track and now I lost my car. I don’t want to burden anyone with my dilemmas but they are beginning to spill over into the rest of my life. Any suggestions would be helpful (Journal 3).

In responding to this journal entry, I asked Eric if he needed to adjust his tutoring schedule to reduce the pressure on him. I felt it would be better to make deliberate changes rather than to risk his showing up sporadically, or not at all, to study groups. I also suggested he try to get more school work done while he was at school rather than waiting until he got home. Again, it is unclear whether he read or heeded the feedback.

Around the same time, Eric missed some study groups and three Tutor Development classes due to his lack of transportation. His supervisor reprimanded him for missing classes and appointments and again asked if he needed to adjust his schedule. He decided he could make the necessary car arrangements in order to meet his study groups. For awhile, his attendance in class and study groups did improve, and he met for a short time with one of the tutors about his time management problems.

Struggling to Meet his Commitments as a Tutor

The tutoring experience could not give Eric what he couldn’t provide for himself in the way of structure and time management, and about mid-point in the semester, Eric missed two more classes and got behind in his work for the Tutor Development class; at the time he had turned in the first four of six journal assignments. He was enrolled in the class for four credits, so in addition to writing journal entries and a case study, he was facing the prospect of writing a research paper. When he met with the mathematics supervisor at the end of October to discuss his progress, he described the Tutor Development class as “very in depth. Sometimes I feel overwhelmed, like writing in the
journals. I’m falling behind.” The following excerpt from the mid-semester interview with the mathematics supervisor/co-instructor testifies to Eric’s struggle with time management and structure:

E: I need a homework buddy.

I: OK. That’s good. Who would be good?

E: I don’t know.

I: OK. Now I know you’ve been meeting a little with a tutor about time management.

E: Yeah.

I: Would that be helpful? Have you been doing that regularly, or just occasionally?

E: Occasionally. We started to do it pretty structured in the beginning, but then I kind of got bored.

I: Got bored with structure?

E: Sorry.

I: I know, however, the reality....

E: It’s helpful sometimes, but staying on it is tough.

I: I know. It’s very hard, but it [lack of structure] does create chaos.

E: I realize I really need to change something. I think one of the big things that would help me out is if I could prioritize.

I: I think so, because what I’ve noticed is that you’ll pick a subject. Like you say, “I’m going to really get this one down this week and then I’m going to get this one down next week, and then...
E. I haven’t thought about tutoring.

I. Right. And Tutor Development does not seem to get on that list.

E. Yeah. That’s true.

Although Eric knew that late assignments would be penalized and that he had to pass the Tutor Development course in order to keep tutoring, his other courses took priority over Tutor Development. A short time later in the interview when the supervisor asked him what his plans were for the next semester, Eric said he wanted to tutor again, but he was “not sure” he could make the time. When she pointed out to him that he could continue to tutor without enrolling in the second part of the Tutor Development class, Eric said, “As much as I hate the class, I like the class because it makes me think a lot about myself as much as I hate thinking about myself” (Interview 2).

Meanwhile, Eric continued to fall behind in his homework for the Tutor Development class, until the Thanksgiving break when he wrote several journal entries. One of the lessons I learned from my experience with Eric is that journal feedback that is intended to provide challenge and support needs to be followed up by conversation to ensure that the tutor has read and understood the feedback and has taken some action (or at least has a plan). I also learned that penalizing late journal entries did not have the same effect in a Pass/fail class as it might have if grades were awarded. Consequently, the course was changed to a graded course after the first year. Another lesson I learned from my experience with Eric is that I need to stress the time commitment of the course and the job when I interview prospective tutors. In the case of an individual like Eric who knew from the outset that time management was a problem for him but who was
otherwise qualified to be a tutor, I would now be inclined to limit the individual’s
tutoring responsibilities during the first semester until he or she had a better idea of the
demands that the Tutor Development class and the tutoring job placed in his or her time.

As he predicted in the first interview, Eric’s lack of structure “leaked into” his tutorials; it became evident in his first (mid-semester) taped tutorial which received
moderately low ratings in several categories. Since he had not yet had individual tutorials
with students, he chose to audiotape a drop-in session with two pre-calculus students;
both tutees were also in other classes with him. Eric began the session by asking one
tutee, Jackie, what she wanted to work on, but in the same breath, he changed the subject
to a chemistry class that they both attended.

E.  So, Jackie, what do you want to work on? We’re having a chemistry study group
tomorrow.
J.  Nine to eleven?
E.  Yeah, you should come.
J.  I’m meeting again Thursday with my lab partner. I figured out why I’m not doing
well, and that’s because I do all the experiments and all the lighting of the fire,
and the mixing, and the … you know. She does all the math in the reports. So, I
haven’t applied any of my knowledge. I copy hers down, and it’s so much easier
to copy hers down, because I’m doing the experiment.
E.  So now you know.

Eric later reported in his mid-semester interview that he interpreted Jackie’s statement to
mean she was looking to him for answers rather than trying to think through the problems
herself. The conversation about chemistry continued in a similar vein for a few more minutes, and then Eric tried to get back to talking about pre-calculus.

E. Okay. Homework?

J. I could do homework at home, but I have five dogs.

Jackie seemed reluctant to get down to business, but the second student (Dave) began to ask questions about the pre-calculus problems.

D. All right, so if I had 330 degrees, if I look at a reference angle, that's actually 30 degrees, right?

E. The x axis on the negative side is 180, right? And then the bottom of the y axis is 270.

D. All right.

E. Then, what is it? If you add 60 more, it would be 330. So your reference angle is negative 30.

Eric began by answering Dave's question, and when Dave did not seem to understand, Eric shifted to asking closed questions to clarify what Dave did understand. Jackie rejoined the conversation saying, "See that's what I'm confused at. That's what I asked him." Eric asked her, "What's your question?"

J: Do we go the 30 like this, or do we go minus like that?

E. Well, they're the same thing. Like it's the same reference angle.

D. If it's positive, aren't you supposed to go counterclockwise?

E. Yeah, If you're at a positive angle you go like this, counterclockwise. And if it's a negative angle you go... you start from the bottom. You start from the side of
the X axis right here. If it's negative you go this way. If it's positive you go counterclockwise.

Working with Jackie, Eric resorted to explanation, but she announced that she was taking a break and left. Dave and Eric continued to work on a problem together. Whereas Eric used the directive strategy of explaining procedures to Jackie, he switched to the non-directive strategy of asking clarifying questions when working with Dave.

E. Okay, so where would you start?
D. Right here. So we go 90, 180, 270.
E. All right. Is that... what 270? Is that negative 270?

When Dave finished working the problem, the conversation reverted again to chemistry until Jackie returned and asked to use a pre-calculus book. When Eric could not provide one, Jackie left, and Eric commented to Dave, “She’s all over the place. No wonder she doesn’t get stuff done.” Instead of returning to the math problem, Eric allowed the conversation to again drift toward a class he and Dave were both taking, so in a 30 minute tape, only about 15 minutes were actually devoted to math.

Although Eric received several low scores on this tutorial, he received a high rating from outside raters on “acceptance of tutee’s attitudes and feelings.” However, they commented that he was “too accepting”, and that the tutorial never got on track. This tutorial brought to light one of the limitations of the observation checklist of tutoring behaviors (Appendix G): it did not allow raters to indicate the extent to which a behavior was appropriate for the situation. Thus, Eric received a high score on acceptance because he totally accepted their attitudes and feelings when, in fact, the level of acceptance was
excessive for the situation. Instead of just accepting Jackie's off-task behaviors, Eric should have provided direction for the tutorial. I agreed with the outside raters, and I asked the mathematics supervisor to read the transcript and to discuss it with Eric.

When Eric met with the supervisor, she allowed him to give his view of the tutorial. Describing Jackie, Eric said:

She was all over the place and very disorganized. She couldn’t sit down and get things done. ....The situation was that she wanted me to give her all the information. Like give her... like teach her the unit circle. Like on the spot. It wasn’t like she was telling me she didn’t have that knowledge. She had it in her notes, but she didn’t know what it meant. She didn’t know how to read it (Interview 2).

In discussing the tutorial, Eric identified one of Jackie’s problems – that she could not make sense of her notes. If he had detected the problem and taken steps to address it during the tutorial, the session might have been more fruitful for both Eric and Jackie.

Pointing to the fact that part of the tutorial was not devoted to math, the mathematics supervisor told Eric that when tutees got off task, he needed to re-direct them to the problem. She also brought up the comment Eric made to the second tutee about Jackie.

I. Apparently at the end you said, “No wonder she doesn’t get stuff done.”
E. Well, she wasn’t there.
I. You shouldn’t have made the comment. When she’s gone, you really shouldn’t say anything about a tutee.

Eric’s experience and his conversation with the supervisor seem to have influenced his code of ethics because a few weeks later, as part of his code, he wrote, “Avoid gossip about other students and teachers” (Journal 7). Although Eric made mistakes, he seldom
made the same mistake twice. Once he was corrected, he usually integrated the "lesson learned" into his tutoring, which suggests that Eric benefited from direct intervention and leads me to think we should have intervened more often.

Another lesson I learned from Eric's experience is the importance of supervisors adapting the level of supervision to the individual, an idea that Reiman and Thies-Sprinthall (1998) stress in their book. Having found through their research that an individual's need for structure is related to and varies with his or her developmental stage, they call upon supervisors to adapt the level of supervision to the individual's stage. In this study, there was little differentiation in levels of supervision for the nine tutors. Eric seemed to respond well to more direct supervision when his supervisor challenged him to meet his responsibilities as a tutor and a student. In retrospect, I think that because Eric seemed somewhat insecure about meeting the challenges of being a tutor, we tended to offer more support than challenge, more leeway than structure. Knowing that Eric lacked structure, we should have provided more direct supervision.

Eric's own lack of structure became apparent later in the interview when he complained about the lack of participation in his study groups. At first he seemed particularly concerned with one student who came to the group, but it became clear that the lack of participation was not confined to one student.

E. He never asks questions. He just sits there. It's like right in the beginning of the class, so people trickle into the class. Then I'm like, "Hi, how you doing? Do you have any questions today? Anything you want to work on?" "No, I'm good,
I'm fine.” Then, so I'm just sitting there waiting for somebody to ask me something and nobody wants to do anything.

I. Would there be a way to say, “If no one has a question let’s look at one of the homework problems? Everyone open your books at where you did this homework problem.”

E. Yeah.

I. If they don’t have questions, that’s what I would do. Suggest that to everyone, and that way you’re going to find out whether people have done their homework. If they haven’t, say, “OK. Well let’s all have a go at it.” Get them to do it together or in groups.

E. Then I become like a teacher (Interview 2).

Eric seemed to avoid imposing structure on his tutorials out of fear that doing so would place him in the role of a teacher. The supervisor’s suggestion to structure the study group did not fit with his conception of the tutor as buddy. He wanted the students to set the direction for the study group, and he expected them to come with questions. He was reluctant to lead the group, to model problem solving, or demonstrate the process, or even to suggest that the group all work on a particular problem, and this reluctance seems to have been related to his perception of his role as a tutor – that of a buddy.

Besides talking about the taped tutorials, part of the purpose of the mid-semester interview was to explore with tutors their feelings about their new role. Eric said, “I enjoy being a tutor, but it’s a lot of worrying about how I am affecting this person.” Like many of the tutors, Eric’s feelings about being a tutor were mixed – he both enjoyed it

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and worried about it. During the interview, the supervisor complimented Eric on making “more headway” than other tutors with an algebra I student (Steve) who, in the mathematics supervisor’s words, had “really particular issues” (Interview 2). Asked to describe a tutorial in which some part of it made him uncomfortable, Eric described a tutorial with Steve.

E. I was trying a tougher approach with Steve. The first ones that we did, it might have even been a positive and negative integers. It wasn’t positive at all. It’s hard for me to explain how negative and positive are negative. The number line..., like repeatedly, repeatedly, repeatedly after, like a constant sample problems and examples. He’s telling me like this is what you have to do.... putting it in my face.

I. So repeatedly getting it wrong.

E. Yeah. My style of teaching it to him that time didn’t work.

I. Right. So?

E. It got uncomfortable talking…

I. So, it’s just you were frustrated.

E. Yeah.

I. So you said that. So what happened? How did it end up?

E. It ended up like we got through that section, we ran out of time. I suggested we set up an appointment. “Oh, I have to work. I can’t do it this day.” It sounded like exactly…. He came constantly for three weeks for thee make-up exams and
then after that he has seen me two or three times. But I myself was very uncomfortable not knowing if I helped (Interview 2)

At the close of the mid-semester interview, the supervisor asked if there was anything in particular that he wanted work on his tutoring and with which he would like our help. Eric complained that people did not take advantage of his study group, and the supervisor said, "'You can't make people come. You can't make them work, but you can provide a little structure" (Interview 2). As we will see in the second taped tutorial, which was an individual tutorial, Eric took the supervisor's advice and tried to provide more structure for the tutorial with Steve.

Resisting Reflection

One of the developmental conditions of the Teaching and Learning Framework is the balance of experience and reflection, and in our program, journal writing is a primary tool for encouraging reflective practice. By reflective practice, I mean tutors are encouraged to think about their tutoring experiences and the ways in which it relates to prior knowledge, the course readings, and class discussion, and to consider how they might adapt their tutorials to include the new strategies and ideas. Furthermore, weekly reflections are intended to provide tutors an opportunity to work through the disequilibrium created by the experience and/or the course. The weekly journal was also a primary tool for the co-instructors to provide feedback, support, and challenge. In order for the journal reflections to impact experience, the framework calls for the reflection to occur soon after the experience. In Eric's case, he was steadily gaining experience, but he was not reflecting in his journal. There was about a six week gap
between his fourth journal entry and subsequent entries. By not keeping up with journals, he was, in effect, denying himself the potential benefits of fully participating in the experience that was designed to promote cognitive-structural change and improvements in tutoring practice.

Just before he got behind in his journal entries, Eric’s fourth journal, written prior to mid-semester, showed he was beginning to apply the course readings to himself and to consider how he could incorporate some of the ideas into his tutoring. In response to the prompt, “Reflect on and respond to Weinstein and Mayer’s (1983) article “The Teaching of Learning Strategies” Eric wrote:

I had no idea that there were so many learning strategies. I have used them all at one time or another but never really knew I was doing it. I think that I don’t know much about my learning strategies or my ability to control them. I think the term was metacognition, which means a student’s knowledge of my own cognitive processes and my ability to control them by organization, monitoring, and modifying. In my own view I would say that I am a poor comprehender of such things (Journal 4).

This journal entry suggests that Eric had had little experience with attending to, monitoring, or reflecting on his own learning processes. Kuhn (1991, as cited by Hofer & Pintrich, 1997) found that “the metacognitive ability to be reflective about one’s own thinking”) was necessary for higher order “cognitive processes” like contemplation and evaluation (p. 105). Despite his moderate stage scores on the PCM and DIT-2 which would suggest the ability to reflect and evaluate, Eric seemed to lack the metacognitive skills he needed to take full advantage of the journal writing.

Six weeks elapsed between the time Eric wrote Journal 4 (dated October 8) and Journal 5 (dated November 22), and Eric’s feelings seemed to grow more negative. In
response to excerpts from the Lepper et al. (1997) chapter on scaffolding, Eric listed the ways in which he was not “an expert tutor”.

I really enjoyed the scaffolding article. I am definitely not an expert tutor. The article tried to give an example of a model tutor and as much as I would like to be an expert it’s hard for me to change overnight or even over the course of a semester. ....

The acronym INSPIRE left me with a lot to think about. Although I am intelligent and can come up with some pretty good analogies or subject specific pedagogical knowledge and try to be empathetic to a student’s needs, I think I lack the Socratic approach. It is frustrating to ask a question repeatedly and continue to get a wrong answer or to hear students put themselves down as in the case with a particular female pre-calculus student.

Also I do not try to be very progressive with my tutees as much as I think I should be doing, but I hardly have enough time for myself and it should be up to them to motivate themselves. This is hard I know. Maybe I am being selfish. I am also very direct when it comes to demanding my expectations.

I may not be as effective as a polite and unobtrusive like a good tutor. Also I hardly ever ask a tutee to reflect on a concept because we almost always run out of time. Finally it is extremely hard for me to be encouraging or motivational for a student. Don’t ask me why. I think it has to do with the fact that I myself have to work hard to motivate just myself to do something or that I don’t have enough practice doing it for it to come naturally.

These readings raised some key questions for me. Even though I do not have all the qualities to be an expert tutor do I have enough to be a remedial one for the moment? Can I be effective if I myself am having trouble in my own schoolwork? Is there ever enough time to get everything done? (Journal 5).

In my response to Eric, I described him as a novice tutor, not a remedial one, hoping that he would see novice as one first learning how to tutor rather than one who needed remediation, which is how I interpreted his use of the word remedial. I also acknowledged that time management is sometimes a problem for tutors, but reminded

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27 INSPIRE is an acronym standing for intelligent, nurturant, Socratic, progressive, indirect, reflective, encouraging. Progressive means the tutor makes “increasing demands on the student in each tutoring session” (Lepper et al., 1997, p. 134).
him of the long-term problems his lack of time management could present. Part of Eric's struggle seemed to be providing the structure in his tutorials that he himself disliked and motivating students when he was having difficulty motivating himself.

The sixth journal entry was intended to be a mid-term self-assessment, but since Eric wrote it November 24, his reflections covered about 75% of the semester. The writing prompt asked about his feelings, what was going well, and what was not. In this journal entry Eric continued the themes of time management and personal issues.

I cannot think of any strengths of note that I have which is discouraging but I figure if I stick at it they will pop up. If I wasn't such a chaotic person then they would be easier for me to notice. My Downing assessment showed that I could use a lot of improvement. I would definitely benefit from a permanent homework buddy and or a personal trainer to help me focus on organization and structure. But that seems like it will never happen because it would require too much time and energy from one person (Journal 6).

This self-assessment was written so late in the semester that when the mathematics supervisor read and responded to the journal entry, her response had little effect on Eric's feelings about himself or his ability to organize himself near the end of the semester. In responding to his journal entry, the mathematics supervisor/co-instructor assured him that other people saw his strengths as a tutor and that she felt he was being too hard on himself. She told Eric that she knew he was improving as a tutor, attending class, meeting with his study groups, keeping up with his other classes, and at this point, catching up on the journal assignments. Although she conceded a study buddy could not help him make many changes at one time, she encouraged him to take "little steps" and to meet once a week with a study buddy. Had Eric received such encouraging feedback and

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28 The tutors had completed a self-assessment found in Downing (2002), p. 8-9
more direct intervention earlier, he might have felt better about his experience, despite his “chaotic” life.

The seventh journal assignment, due October 29 but written November 24, was to write his personal ethical code as a tutor, and to offer reasons for encouraging or discouraging certain behaviors. At the top of the code, he wrote: “I would love to follow this code to the letter but often I do not. It is something that is an ideal.” Indeed, Eric incorporated into his code some of the ideals discussed in class that appealed to him. He also included several statements written in terms of negatives (“avoid,” “not”) which were direct references to lessons he had learned through experience or through observation of other tutors’ experiences. Although encouraged to write in the first person, Eric wrote most of his code as a series of imperative statements.

Try to motivate the student to study and learn independently and not rely on a tutor to aid them in their studies.
Encourage students to ask questions and seek help from other students.
Avoid gossip about other students and teachers.
Keep focused on the task at hand and not get distracted.
Try to find the right pace and style that best helps the student and not make the student keep up with my pace.
Be empathetic.
Be honest.
Do not involve yourself in cheating.
Do not put yourself in a position to put the institution’s credibility at risk.
Do not hit on tutees or make sexual remarks or any remarks that could be taken the wrong way.
Find at least one thing that can be said that will make the tutee see some success in their work.
I am not a teacher so I should not act like a teacher.
Try to give my total attention to the tutee, it is their time not mine.
Be open-minded and unbiased.
My personal life should not be brought into tutoring sessions.
I can learn as much about myself in a session as the tutee can be benefited.
There is always room for more. Be flexible.
I am basing this code on the handouts and also on how I feel as a person. It is very hard to live up to expectations. And there have been instances where I have broken this code, such as a side comment to another tutee about another. But overall I think that by encouraging tutees’ own independent growth and discouraging their own self-degradation29 I will follow this code. This journal reminds me of a quote from the movie Desperado. “It is always easier to destroy than to create. It is easier to pull the trigger than to pluck the strings”. This means that destruction is easier to do than it is to create a healthy situation. It is easier to rip up a song than it is to play it. Just like tutoring and learning. (Journal 7).

Eric’s code reveals some characteristics of a tutor thinking at a moderate level of complexity. For example, Eric favored non-directive strategies like asking questions and encouraging tutees to ask questions; he appeared to be sensitive to learning differences and the need to empathize with students, and he was attuned to ethical issues. These behaviors are focused on the good of others and emphasize the mutuality of the tutor/tutee relationship. According to Rest et al. (1999b), such behaviors are characteristic of individuals reasoning at higher stages of moral development.

At the same time, Eric’s ethical code reiterates some of his personal concerns with keeping his personal life separate from the tutorials, being focused, and avoiding behaviors that would endanger his position as a tutor. Most of these statements can be directly related to his tutoring experiences (e.g. the first taped tutorial) and to an incident early in the semester when a former tutor was dismissed for violating academic policy. These statements stem from concern for himself rather than for his tutees. Unlike Carolyn’s code of ethics which was focused almost exclusively on the tutee, Eric’s code is almost evenly divided between concern for himself and concern for his tutees. Eric’s

29 I do not know what Eric meant by the tutees’ own “self-degradation,” but I suspect it referred to some tutees’ tendencies to think and talk negatively about themselves as learners of mathematics.
mix of concerns illustrates Rest et al.'s (1999b) assertion that individuals are never in a stage of ethical development; rather, they exhibit characteristics of all levels, although one stage tends to dominate.

As in Carolyn's case, we asked Eric to revise his ethical code so it would be written in the first person. Eric addressed our request to revise in his thirteenth journal entry when he wrote, "Why can't I just state my code how I want to state it? I know what I mean and that is what counts right? I do not like the idea of having to put it all in one form of "I will" because I won't always do them all, and I don't like to make a promise I cannot keep" (Journal 13). Eric seems to have viewed his ethical code as a series of promises rather than a declaration of his ethical ideals that would guide his behaviors as a tutor.

The eighth and eleventh journal entries were written November 22 when Eric was catching up on his homework for the course. The writing prompt for the eighth entry asked tutors to comment on their own development in terms of Perry's (1970) developmental scheme, and the eleventh entry asked tutors to comment on themselves as critical thinkers and on their tutees' ways of thinking. Eric began the eighth journal by writing: "These journals give me so much trouble. Too much thinking about it gives me anxiety. I believe in my heart that every particular event is looked at differently and there is never one perfect way of solving every common solution (Journal 8).

Here Eric reveals thinking that Kegan (1982), among others, might see as evidence that no one is ever IN a stage, but rather exhibits elements of different stages at the same time, although one stage is considered to dominate. Eric's inability or unwillingness to reflect
in the journals might be seen as an indicator of a lower stage of development (Kegan, 1982). On the other hand, his comment about multiple ways of looking at a problem is an indicator of a disposition to critical thinking. Eric thought of himself as “a good critical thinker” who was “skeptical and open minded” (Journal 11).

In applying developmental theories to his tutees, he made some observations about his tutees: “In my tutees I notice that Jackie could use some help with her critical thinking skills. She needs black and white ideas. Quick to assume she cannot learn math. And not very flexible in her approach to math. Steve also is a rigid wall” (Journal 11). Eric was attempting to apply the readings to himself and his tutees, but he tended to make observations without elaborating on them. He could detect problems with his tutees’ ways of thinking and problem solving; however, he did not reflect deeper or elaborate on how the tutees’ developmental and skill levels should be taken into consideration in a tutorial.

Eric’s final three journal entries, which all required him to respond to comments and questions the instructors had raised on journal entries 1 – 11, continued the theme of personal issues that impacted his school work and his tutoring experience.

I do not want to bring my personal life into the LC because then I would do nothing else. I don’t have many people to share my issues with so an open door would be too inviting and that would overwhelm you all. I think I am slower at the tutoring class than others because I cannot write my journals, do my case study, or the paper on time. I think too much and that slows me down. I can do more at school but I get hungry so I go home for food and then do not want to drive again. I need to conserve gas and I also have no car insurance so I avoid the roads. I have had four accidents in the past year (Journal 12).
According to Eric, his personal stress also affected his tutoring. In the last entry, he wrote that the tutoring skills he used depended partly "on the task at hand. It also depends on how I slept the night before, what mini crises have popped up, stress, and life in general" (Journal 14).

Over the course of the semester, Eric wrote a total of 50 passages in the journal entries; however, the passages tended to be short, lacking reflection and elaboration. At the same time, he accumulated 28.4 hours and worked with 23 students, mostly in study groups and drop-in tutorials. For Eric, there appeared to be not only an imbalance between challenge and support, but also between experience and reflection.

Eric seemed to grow more ambivalent about his tutoring experience toward the end of the semester. His metaphor for tutoring at the end of the semester provided some insight into the quality of Eric’s tutor experience working with struggling students and his feelings about himself as a tutor. "Tutoring is like a boulder. It is a heavy load that must be picked at until a handhold is found and then a foothold and it is a great feeling to climb to the top" (Second in-class metaphor survey). At first, the simile suggests Eric sees tutoring as a burden, but then he shifts and sounds very upbeat. His explanation of the metaphor reveals another emotion: "My relationship with tutoring is tense. I am still afraid of my influence on others and some of my tutees really made me depressed" (In-class metaphor survey 2). The mixed feelings expressed in his metaphor and the explanation are similar to the excitement and worry he expressed early in the semester. Similarly, in the thirteenth journal entry, Eric expressed both the negative realities of his
first semester of tutoring and the possibilities for persisting in his role as tutor for a second semester.

I tend to continue not to make progress with students. I mean that Steve still struggles. I have no success story to prove I can tutor. I didn’t have anyone that I can say I saw a progression from struggling to mastery of math. I think that the tutoring program is a bit chaotic but also that it involves a lot of self-improvement before the actual implementation of tutoring another person. That takes more time than a semester holds which is one reason I would like to continue in the next (Journal 13).

The co-instructor (mathematics supervisor) and I encouraged Eric to continue tutoring the next semester because we observed him catching up on his homework, improving his study groups, and making changes in his tutoring practice. The mathematics supervisor felt he had great potential as a math tutor, and the second taped tutorial gave me reason to agree with her.

In this taped tutorial, Eric was trying to help Steve prepare for his final exam in algebra I. There were some similarities between the first and second tape, particularly in Eric’s approach as the student’s buddy. However, unlike the first tape where he never got the tutorial on track, Eric negotiated a goal for the tutorial (practicing for the exam) and kept the tutorial with Steve focused on the work at hand. After letting Steve choose the problem he wanted to work on, Eric provided the structure for the tutorial.

S. I have no trouble with that except for this and this [pointing]. That’s the one I have trouble figuring out.

E. So you can do number 16?

S. Yeah.

E. What would that be? Here you go [handing Steve a pencil].
Eric gave the student a specific task to do, and after watching the student work the problem, he said “OK,”, and directed him to work another problem. He listened to the tutee talk aloud about his problem solving, and did not interrupt until the student had finished the problem.

E. Now if you plug those points in, what would you get? And did it work?
S. Yeah, when you plug them back in… no [erases]. I think I screwed up.
E. Go back and double check it.
S. Yeah. So if I use $x = 0, y = 6$…
E. So now what would it look like? That changes things, doesn’t it?

Eric listened to Steve’s problem solving process so that he could address where Steve was going wrong. Eric had learned when he read Lepper et al. (1997) that it is sometimes better to ignore a tutee’s small mistakes, rather than to point out every error. In this tutorial, he did not intervene and provide corrective feedback until Steve chose incorrect points for checking the problem. When Steve re-checked the problem and did the problem correctly, Eric offered positive reinforcement. “Like you know what you’re doing. You really do, but it’s just that you sometimes get caught up with things. You’ve got to be cautious of what you know you like to do.”

Then Eric shifted the tutorial to a word problem that required him to use the formula for area of a square. In this part of the tutorial, Eric let Steve struggle with the problem for what seemed to me an inordinately long time before he intervened, and Steve seemed to get more confused as the tutorial progressed. When multiplication was called for, Steve added; when he should have taken the square root of a number, he tried to
divide the number by itself. Eric appeared frustrated, but he continued to sound patient.

When Steve finally agreed to take the square root of 400, he answered that 200 was the square root, so the next part of the tutorial was spent correcting that error.

In this tutorial, Eric provided more structure than he did in the first tutorial, but he did not choose to demonstrate or model the process, nor did he forestall errors. It appeared that Steve got so confused that he lost track of what he was doing. When he finally solved the problem with Eric’s coaching, Eric would have been well advised to have Steve do another word problem or to re-work the same problem to check what the student had understood; instead, he chose to move on to a different kind of problem.

Nevertheless, the outside raters, the mathematics supervisor, and I saw a lot of progress between the first tape and the second one. Eric’s ratings improved substantially especially in the categories of asking questions and using positive reinforcement, although he still seemed unable to adapt his tutoring strategies to the tutee’s skill level and learning style.

Eric saw the challenges inherent in his role as a tutor and for these he received the support of the mathematics supervisor. However, the major challenge for Eric was managing his personal life, and for that he did not seem to have outside support, nor was he open to accepting suggestions for changing his personal situation. It is hard to say how much of Eric’s lack of structure was a personality trait and how much was related to his developmental level.

Eric’s P% score on the DIT-2 score improved from 40 on the pre-test to 48 on the first post-test, while his PCM score declined. The major indicator of change for Eric was in his tutoring practice because in the second taped tutorial, he encouraged his tutee to
ask questions, worked at creating dialogue, and attempted to listen actively. He also attempted to determine the tutee’s prior knowledge by allowing him to explain his understanding of the task or problem, and he overlooked some errors at first in order to discern how the tutee was approaching the problem. However, he had difficulty changing his tutoring style from his preferred non-directive approach to a more directive approach even when he recognized the difference between his learning style and the tutee’s preferred style.

Eric is an example of an individual who scored at moderate stages of conceptual level, ethical reasoning, and reflective judgment. His development as a tutor was impacted by his conception of his role as a tutor as buddy, the ways in which he dealt with – or failed to deal with -- personal stressors, and a lack of reflection on his tutoring experience. His persistence in being a tutor, his desire to become a better tutor through experience, and the changes he made in his practice encouraged me to think that with support for his personal issues and deeper reflection, Eric could develop into a highly competent and more confident tutor of mathematics. During the next two semesters, we observed Eric gain confidence as a tutor, practice more self-discipline, perform well in his courses, and become flexible in his choice and application of tutoring strategies. Although his development as a tutor lagged behind that of other tutors, Eric, in his third semester as a tutor, became the students’ tutor of choice at drop-in tutorials.

The next narrative describes a tutor – Melinda -- who, like Eric, did not perform well on her first taped tutorial. Unlike Eric, she immersed herself in the all the components of the tutoring experience and demonstrated change in her thinking about
tutoring and her performance as well as improvements in the scores on the assessments.
Like Carolyn, Melinda was a classlink writing tutor who succeeded in developing a relationship with her tutees.

Melinda

Assertion: Melinda is an example of a tutor who was poised for growth and made positive changes in her thinking about tutoring and her tutoring performance by developing positive relationships with her tutees and engaging fully in a program modeled on the Teaching and Learning Framework. By poised for growth, I mean that she was open to new ideas, willingly engaged in reflection, and welcomed feedback on her ideas and her performance.

Melinda, Participant 6, was a 39 year old mother of two small children who was returning to college with hopes of earning her degree. At the time of the study, she had accumulated enough college credits to be a junior, but was not yet admitted to a degree program. She had majored in marine biology at another state university after graduating from high school, but she was suspended after her second year in college. She was taking literature and general education courses at our college in order to earn a degree in English. Having earned high grades, she was recommended to be a tutor by a literature professor because of her inter-personal skills and writing ability.

Melinda described herself as “a very interested learner,” in contrast to the first time she attended college when she “didn’t appreciate” it. She also described herself as being competitive, “persistent,” a “perfectionist,” and good at organization and time
management (Interview 1). The competitiveness showed up when she chose the game of golf as her initial metaphor for tutoring.

Golf can be challenging, as tutoring is – rewarding, as tutoring is – frustrating, as tutoring may be – but when you are done with your “round,” whether it has been good, bad or indifferent – you always come back for more, for that best round. You never know what the next round will be, and no matter how good you are, you always want to be better. I see it [tutoring] as a challenge and an accomplishment. I hope to do well. I am competitive and always strive to do my best (In-class metaphor survey 1).

Melinda competed with herself to be “the best tutor she could be” (Journal 5). “Part of my personality includes a very competitive edge and if I can’t do something well, then I get anxious. I am thinking that the perfectionist in me needs to be slightly repressed in order to succeed at tutoring….is this correct?” (Journal 5). As will be seen, in her effort to be “the best” she could be, Melinda sought feedback, reflected on it, and strived to improve her tutoring performance.

When she became a tutor, Melinda appeared to hold a transmission model of teaching and learning. In her first interview, she defined teaching as “passing along your knowledge of a subject to one person or a group of people, and trying to get them to absorb it and internalize it” (Interview 1). Later, when she described teaching, learning, and tutoring in her journal, she added another dimension:

Teaching is more than giving instruction. It requires personal connection and attention to the student. A teacher should be able to identify, to the best of his/her ability, how to reach the student and enable that student to succeed. The success of a teacher can be gauged by the success of his/her students. A good teacher is able to help the student have confidence in his/her ability to learn (Journal 1).
The interpersonal dimension and connections to her tutees were important to her, and her idea of a "good" or "successful" teacher influenced her idea of what a tutor should do. As a student, she preferred teachers who were personable, student centered, "enthusiastic, and willing to share their knowledge" (Interview 1). These characteristics were some of the qualities she wanted to bring to her tutoring.

Melinda’s definition of learning followed from her definition of teaching as "passing along knowledge;" if the teacher is passing along knowledge, the learner must be receiving it.

Learning is the ability to take information and utilize it. To internalize facts, figures and methods is part of the learning process. Learning is more than just memorization though; it is being able to take information and make it a part of who you are - to absorb and assimilate. If you take knowledge and make it part of you by learning it, you have that resource available throughout your lifetime to call upon (Journal 1).

She knew when she had learned something, Melinda said, when she felt like she knew enough about a subject “to talk to other people about it, or help other people write or develop a skill” (Interview 1).

*Conceptualizing the Tutor/tutee Relationship*

Helping people was one reason Melinda became interested in becoming a tutor. In addition, she was interested in becoming a teacher and thought that tutoring would be a “stepping stone or bridge to teaching” because “it exposes the tutor to different learning styles and situations” (Journal 1). Tutoring was different from teaching, she wrote, because it “probably allows more one on one time than professional teaching and therefore creates more of a personal connection between tutor and tutee” (Journal 1).
Melinda volunteered to be the class-link tutor for one section of a developmental English class comprised of students who received low scores on the reading and writing placement exams. When I asked her what she expected to do as a tutor, she said:

Ideally, I'd love to have a relationship with the class that I link with and have the kids come to me on a regular basis with writing assignments that they have to work on in class, or even other things that they just, as far as English goes – grammar or anything like that – they want to talk about (Interview 1).

More than any other participant, Melinda wrote and spoke frequently about her desire to develop a good relationship with her tutees, and it became a theme in her journal. In her first journal she wrote: “I am hoping it [the classlink] will establish a relationship between myself [sic] and the students so that they will be comfortable coming to me for help and I will be comfortable offering help” (Journal 1). Melinda discovered in her reading that experts also emphasized the importance of the relationship between the tutor and tutee. In her fifth journal, she wrote:

One of the other items I found particularly interesting in the reading was that successful tutors seem to establish a personal/friendly relationship with their tutees. I really liked seeing this in print because I, personally, think it is one of the most important aspects of tutoring. I have already noticed that some of the students I have seen more than once are more comfortable with me. Now they are able to relax and discuss their writing problems (Journal 5).

Being a class-link tutor enabled Melinda to establish relationships with the class-link instructor and the students. Reflecting in her last journal on her semester as a tutor, she wrote:

I think a class link situation is the ideal way to maximize the benefit to the tutee. The tutor and instructor establish a relationship in which the tutor is

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30 She is referring to Lepper et al. (1997).
made privy to information regarding expectations and requirements. Therefore, the tutor can make better use of time in a tutorial (Journal 14).

Besides a relationship, she was seeking “a sense of accomplishment and satisfaction that I’ve made a difference to somebody” (Interview 1). One of the risks in being a tutor in search of “a sense of accomplishment and satisfaction” is being frustrated or disappointed when that satisfaction is not found. When I cautioned her about the risks, Melinda said her first experience with college made her “want to help them [tutees] with their direction.” She added, “I think I have to be careful not to push too hard because they might not want that kind of advice” (Interview 1).

Defining Her Challenge

Giving advice was something that Melinda was tempted to do. Throughout the semester, I saw that part of Melinda’s challenge was to balance being directive and offering advice with being non-directive and allowing the tutees to figure some things out for themselves. By the end of the semester, she, too, saw this as her biggest challenge.

Responding to the instructors’ question on an earlier journal entry — Do you find resistance sometimes in tutees to your questioning? — she wrote:

I do find resistance in some of the students. This has been the hardest thing for me to master this semester, and I am still working on it. Sometimes when I don’t know how to ask a question that will bring the student to a point I would like them to see, I fall back to telling. I am really trying hard not to! (Journal 13).

However, Melinda did not see the challenge of using indirect strategies until she had tutored several weeks. At first, she felt that her “greatest challenge as a tutor” would be “overcoming [her] inexperience and lack of confidence” (Journal 1). In actuality, Melinda did not seem to have difficulty overcoming her lack of confidence, and a few
weeks later, she wrote that the “challenge of becoming a tutor [was] a real growing experience” (Journal 3). She wanted her tutees “to be more confident in their writing so that they will push to create something that is beyond the comfort zone -- to get to the next level in writing ability” (Journal 4). But the writing abilities of the students in the class varied greatly, and the challenge changed from student to student. “There are so many different abilities evident in the writing I have seen so far. Some of my tutees require reassurance and fine tuning while others need help developing the concept and direction of their papers” (Journal 6). She found herself simultaneously trying to move them out of their “comfort zone” and trying to build their confidence. In Melinda’s view, there was a connection between the tutees’ confidence level and their willingness to try new approaches to writing.

In her eagerness to help her tutees, especially the traditional aged students, Melinda was inclined to use mostly directive tutoring strategies, such as explaining, lecturing, and providing cues and directions. This inclination was consistent with the mental model of teaching -- basically a transmission model—that she had when she became a tutor. The emphasis in the Tutor Development class was on using non-directive strategies like questioning, offering positive reinforcement, and corrective feedback whenever possible; however, the need for flexibility was equally emphasized. She described her struggle to balance directive and non-directives strategies in her mid-semester interview:

With the younger students I struggle a little bit with the balance of direction versus questioning them because sometimes they don’t answer the questions to lead themselves to the next step. They kind of need more
direction, so that's the only frustrating part for me. I'm trying to figure out how to scale back on the direction with the younger kids” (Interview 2).

This tendency to be more directive with the younger students became evident in Melinda’s first taped tutorial with Greg. He was a traditional aged student who was writing a process analysis paper about strategic reconnaissance, and this was their second tutorial about the process paper.

M: My, you did a lot of work. Wow.
G: I did five pages on the computer.
M. It looks like you took some time to do all of this.
G. It’s a short story. It started off as a process paper, but I added the short story.
M. You added a short story in here because you felt like it added to what you were trying to say. Is that accurate?
G. Right. Since I was writing a process paper and the idea was strategic reconnaissance, I figured that there is a process of conducting strategic reconnaissance, so I explained what it was. But that was just the definition, and I didn’t want to go into a five page paper on a definition. I wanted to make it a process on how...
M. So you wanted to illustrate that process and the best way to do that was to tell how it would be in the field.
G. There’s cause and effect in it as to why this reconnaissance is happening, so I wrote about cause and effect, but I couldn’t write the whole paper on one topic.
M. Right. I know what you’re saying. So maybe what we can do is to sit and decide whether the paper needs a certain style and develop that.

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Melinda began the tutorial in a friendly, positive way, and suggested a direction for the tutorial, but the session took a slightly different turn. As she read the paper aloud, Greg sometimes interrupted to suggest changes, explain why he did something, or ask questions, and she wrote his suggestions on the paper. Often she allowed him time to talk about the topic, paraphrased the points she heard him making, and wrote on his paper without commenting on the notes. Sometimes she drew arrows and numbered passages to show how he should reorganize his paper. She stopped reading whenever she came across sentences or word choices that seemed awkward or incorrect and talked about them. Other times she stopped reading to ask for clarification and to make suggestions, as in the following example.

M. I’m curious. Why did you put that here? Did you think that should be a paragraph by itself? What do you think about taking this sentence and working it into the introductory paragraph?

G. I don’t know about working it into.... It needs to be...

M. Is it a point you’re trying to lead into? So, that’s your thesis?

After Melinda read further, Greg suggested a way he could tie in his thesis to the preceding paragraph. Melinda rewarded him with positive reinforcement and offered her own suggestions.

M. That’s a great way to tie it in. Up here you’re talking about strategic.... It’s important to have these definitions first, and now you’re telling them where the paper’s going so you could have some sort of lead-in like, “In reference to the above definitions, this...”
G. So you want this part of the paragraph to be up there?

M. I sort of do because you can’t have a paragraph be one sentence, unless you want to elaborate on that more.

G. It’s a lot easier to tie it in.

M. We can come back to that if you want. Do you want to go through the rest first?

G. [He nods yes.]

In an hour, Melinda and Greg managed to get about half way through the paper. The two outside raters gave her low to moderate ratings on several points in this mid-semester videotape because they felt that she took control of Greg’s paper, and they perceived the tutee as becoming defensive. While they gave her a moderately high rating on the indirect strategy of asking questions, they also rated her at a moderately high level of directiveness in providing cues and directions. Moreover, they viewed some of her feedback as being criticism. I agreed with the outside raters that Melinda failed to negotiate a manageable goal for the tutorial, that she controlled the tutorial by writing on the paper herself rather than allowing Greg to make the changes, and that she was overly directive considering Greg’s willingness and ability to suggest some changes for himself.

When I talked to Melinda about the first tape, she said she had felt good about the tutorial, but now she was concerned about the tutee’s reaction to her after his paper was returned with a grade of C+.

I got the sense that the gentleman, Greg, who I did the video with, that something has changed in his relationship towards me because he’s definitely cool to the idea of making appointments with me. They got their first essay back about a week and a half ago I guess. I had seen him before class, and he was telling me how good his next essay turned out
after our thing, and then they got their essays back, and he got a C+. ... I think that he reflects that on to me (Interview 2).

Melinda was concerned for herself as well as for the tutee’s response because she worried that the grade might be a reflection of her tutorial with him. She said:

I think he was disappointed, and I don’t know if... and that’s what I struggle with when the younger kids come because I don’t want them leaving here thinking ‘she didn’t do anything for me’. I want them to feel like we accomplished something, but I don’t want to be too directive (Interview 2).

Melinda did not yet understand that tutors can only help students be as good as they can be. Despite all her suggestions for improving the paper, Greg could only do what he was capable of doing to improve it. She worried that if she used non-directive strategies, the students would feel she was not helpful and perhaps they would not like her; however, she knew from her reading that non-directive strategies were generally more desirable. She eventually came to see that her challenge as a tutor was to use more non-directive strategies and to know what level of directiveness was appropriate for each tutorial.

About the same time as she taped her mid-semester tutorial, Melinda described her tutoring style in her journal as being “a combination of directive and non-directive.” Part of her struggle to be less directive was due to her belief that “most of the students” she tutored needed “a more directive approach.” She wrote: “They need help to organize their thoughts and ideas. There are some students in my class link that do not need as much direction though. For these students I try to be as non-directive as the situation calls for” (Journal 6).
Reflecting on Her Experience

For Melinda, reflecting in her journal led to her recognition that a gap sometimes existed between what she "knew" to be the preferred tutoring strategies and what she applied in some of her tutorials. She came to understand that being directive was sometimes appropriate but that she needed to wean students (and herself) from using directive approaches. She was beginning to self-correct by reflecting on practice.

After reading this article, I found myself reflecting on my own personality to decide whether or not I had what it takes to be successful in tutoring. I determined that I do possess some of these traits naturally, which may have been part of the reason I was recommended to tutor. But, I feel that I need to fine tune my skills in some of these categories. I, therefore, believe that a good tutor is also developed over time. He/She must have the necessary foundation and then build upon it through education over time. One of the things I need to pay special attention to is the development of a Socratic tutoring style and indirect teaching method. My current game plan to deal with this deficiency, on my part, is to develop some leading questions ahead of time for each tutorial. If I go in prepared and armed with questions, I will be less likely to revert back to a more directive approach while I am with the student. As far as becoming more indirect in my tutoring style, I think that goes hand in hand with prior preparedness (Journal 5).

As we will see, Melinda’s openness to feedback, her ability to connect the readings to her experience, and her reflections on her practice led to positive changes in her thinking about tutoring and in her practice.

Reflective journal writing led Melinda to identify tutoring approaches that did not work well for her.

I had a hard time in the first couple tutorials drawing the student’s ideas out and as a result, I tended to lead a bit too much. I think I made progress with this last week. I tried to let the student do most of the talking and asked them to explain their ideas to me, etc. It really seems to be working. I am sharpening my listening skills (Journal 4).

31 Lepper, et al. (1997).
Although the first taped tutorial showed that Melinda still tended to lead too much, she was becoming increasingly aware of tutoring practices that did work and those that did not. She learned to let the student take the lead, but she also learned to set parameters for each tutorial.

One of the things that did not work for me as a tutor was trying to give them as much as possible in their half hour. I thought that I had to squeeze as much help into a half hour as possible to really help them. I soon realized that this was not true. Sometimes it became overwhelming to the student. It seemed more effective to give them little pieces of what they needed to write rather than cram them with ideas and information. I could see a difference between the ways they discussed their first papers with me compared to the second. As I stopped trying to help them figure the whole thing out in a half hour, they began to take more of that responsibility on themselves (Journal 6).

Along with learning to negotiate a goal for each tutorial, Melinda was trying to see the assignment and the tutorial from the tutee’s perspective.

Some of the tutoring experiences that have gone well for me are those tutorials when I have stopped to think about what the student is looking for instead of plunging right into what I think they need. This past week, I had several tutorials involving a first draft of the current assignment in 301. Every single student who came to see me was in a different stage of preparedness. Two students who came to see me didn’t have a rough draft to look over because they couldn’t figure out how to organize their ideas and get some kind of outline started. One student came in with a three page rough draft that just needed some fine tuning. But all these students had their own expectations and needs. As a tutor, I had to put my expectations aside and deal with what they presented me with and where we could go from there. The students who came in with nothing and left with notes and ideas were just as happy at their accomplishment as the one who left with a fine tuned rough draft. I learned to stop thinking about what I would do in their situation to create a paper and start thinking about what THEY want to do to create their own paper (Journal 6).

Slowly Melinda began to see the tutorial and the task from the tutee’s perspective and to see the importance of encouraging each tutee “to seek the answers for him or
herself.” She incorporated into her personal code of ethics as a tutor her ideals for encouraging the development of her tutees as writers as well as guidelines for her tutoring behaviors.

1. Do not take ownership of a paper or writing assignment, always remember that the student is ultimately responsible for what he/she creates.
2. Always support the tutee’s ideas and encourage them to elaborate on them.
3. Develop an open rapport with your tutee so that they feel comfortable asking questions or sharing their concerns about their writing.
4. Admit when you cannot answer a question, be honest and up front that you are not an unlimited resource.
5. Structure your tutorial around the tutees learning style. If it helps the tutee absorb the information better, the tutor should scribe notes, tape record a session, read to the tutee, etc.
6. Help tutees brainstorm ideas for writing assignments. Listen!
7. Ask lots of questions relevant to the paper.
8. Help with grammatical errors by teaching the tutee how to identify and correct said errors.
9. Establish the tutees expectations for the tutorial and then meet them. Leave your own expectations at the door.
10. Always be on time and prepared for a tutorial (Journal 7).

Melinda’s code of ethics reiterated some of her ideas about tutoring, especially the importance of having a good relationship with the tutee and building a tutee’s confidence as a writers. Her reference to ownership of the paper was partly a response to the feedback she received on the first tape and partly due to her reflections on the reading. She had become more aware of the need to promote students’ independence as learners while she helped them. Like Carolyn and Eric, Melinda initially wrote her code in the imperative and later revised it in the first person. However, she wrote the addendum to her code of ethics in the first person plural. In this addendum, she indicated that she recognized the risk of enabling dependence in her tutees:
I think the most important behaviors to discourage are the ones that would cause the tutee to become too dependent on the tutor. Our goal as tutors is to help the student help themselves. If we do too much or help too much, the student may begin to think he/she cannot write without the help of a tutor. We need to encourage behaviors that enable the tutee to internalize ways to produce successful writing. We need to encourage the student to push their writing limits. We need to guide them to recognize their own mistakes and correct them. We need to give them confidence in their own abilities by praising their successes and acknowledging their ownership of that success, i.e. “You did it, great job!” or “It’s all you” (Journal 7).

In her ethical code, Melinda continued to develop her conception of what it meant to be a good, effective tutor who promoted the tutee’s development of skills and self-confidence. In some later journal entries Melinda elaborated upon ways she felt she could work with students. For example, after reading about Bloom’s (1956) taxonomy and techniques for encouraging high order thinking in her tutees, she wrote:

I found the information on critical thinking very helpful. It really reinforces everything we have learned to this point regarding tutoring. As tutors, we have to try not to give the answers so easily but instead encourage the tutee to seek the answers for himself/herself. The more I read about the importance of asking the tutee questions, the more it focuses my own skills to that end. In the beginning of the semester I had trouble with leading the tutee too much during a tutorial. But now I am more cognizant of the importance of questioning and therefore less likely to provide answers in a tutorial without first trying to get the tutee to discover his/her own answer. In other words, I completely “get it” now (Journal 9).

For Melinda the journal fulfilled its purpose of assisting the tutor to wrestle with and reflect on the challenges of being a tutor. She took advantage of opportunities in conferences with the supervisors and in her journals to engage in refining her conception of tutoring, to reflect on what was working and what was not, to elaborate on ways she could apply the readings and class discussions to herself and her tutoring.
Melinda was immersed in the tutor development program and all of the components of the Teaching and Learning Framework – skills building through theory, demonstration, practice, and coaching, as well as the developmental conditions. She attended class regularly, participated enthusiastically in discussions, demonstrations, and role-playing; she kept up with her reading and writing assignments, including the journal entries, case study, and a research paper. She tutored an average number of hours (26.25) working with individual tutees, and reflected in her journals and her written reports of tutorials. Her lengthy reflections (over 100 paragraphs) in the journals helped her to learn from her experiences and to keep the challenges from becoming overwhelming or frustrating. She also sought and received support from her peers and the classlink instructor, as well as the co-instructors for the Tutor Development course. For Melinda, there was a balance of experience and reflection, support and challenge, and she chose to continue tutoring.

Changes in Melinda

As the journal entries illustrate, Melinda exhibited positive changes in her thinking about tutoring over the course of the semester and demonstrated improvements in her tutoring performance, although it took several weeks for the changes in Melinda’s thinking about tutoring to find their way into her practice. Putnam’s (1991) research on reflective practice showed that it takes time for anyone to learn how to apply new techniques that are not consistent with the individual’s mental model of teaching and learning. At first, the learner may focus on applying the techniques rather than on understanding the rationale for them. Then, when confronted with challenging situations,
the learner is likely to use techniques consistent with her mental model. Since Melinda's initial model of teaching was a transmission model, directive approaches were consistent with that model, it is not surprising that she reverted to telling when her questioning did not get the result she was seeking. As her mental model of teaching changed, she became more "comfortable" using non-directive strategies because they were consistent with the new model she was developing.

Over the course of the semester, Melinda revised her conception of teaching and tutoring. After reading about Constructivism, tutors were asked to express their current understanding of it. Melinda wrote:

Constructivism is a teaching method that consists of two way communication. It includes discussion between tutor and tutee. The tutor should encourage the tutee to build knowledge on what he/she already if familiar with, i.e. to make connections whenever possible to prior knowledge. The tutor should also encourage the tutee to come up with new connections. Basically, constructivism seems to be the title for what we have been talking about all along in tutor development (Journal 8).

The change in her conception of teaching enabled her to consider making changes in her tutoring. As she began to see teaching and learning as reciprocal processes of constructing knowledge rather than the transmission and acquisition of knowledge, she could be more collaborative, less directive, in her tutorials.

By the end of the semester when Melinda made her second taped tutorial, she had begun to incorporate in her tutorials some of her new beliefs about tutoring. The tutee in the second tutorial (Doreen) was a non-traditional student who was seeking help with editing a short persuasive paper she had written on the topic of euthanasia. The second tape provides evidence of Melinda's earlier statement that she found it easier to adopt a
non-directive approach with a non-traditional student who could see how the tutor’s questions were leading her to make changes.

M. Thanks for consenting to be recorded.

D. No problem. After we worked together, a lot of thoughts came together. I’m curious to hear what you think of it. If you want to thumb through it, it’s not very long.

M. Would you like to read it out loud, or would you rather have me do it?

D. Why don’t you do it. I’ve read it so many times.

As Melinda read aloud, she made only one mark on the paper, in contrast to the frequent marks she had made in the first tutorial. She read the whole introduction before making any comments and then engaged Doreen in making the changes. Melinda made suggestions, like she did in the first tutorial, but this time they consisted of general statements rather than specific suggestions for change. Moreover, the tutee was in control of the paper, writing on her paper, marking places where editorial changes were necessary. The following excerpt from the tape illustrates how Melinda and Doreen worked together.

M. Oh, that’s good. There are a couple things in the first paragraph. When you make the shift from him to me, it’s a little bit abrupt. All of a sudden you change perspective there, so I’m not sure how to work that in. [Doreen makes notes on the paper.] And the other thing that I noticed in the first part was that maybe you could vary the sentence structure a little bit. It’s very descriptive, but it’s all in simple sentences.
D. Maybe put it all together?
M. Yeah, maybe use some complex sentences or something. You stop and start. Do you see what I mean?
D. Yes, I do. I think it’s because it’s just thoughts I’m throwing down. I need to change it.
M. It’s very descriptive, though. I like it a lot.

Although Melinda still offered some specific changes, this tutorial was more collaborative than the first taped tutorial. The entire tutorial was devoted to sentence and word level changes because this was the student’s next-to-last draft. While Melinda pointed to places in the paper that needed to be re-worded, Doreen wrote down the changes. Sometimes Doreen asked specific questions, such as, “Would a period be better there?” or “Is there anything missing?” and in these cases Melinda gave direct answers. Other times Doreen just made changes on the paper. Throughout the tutorial, the rapport between Melinda and Doreen was evident, and the tutorial closed with a friendly discussion of how Doreen liked the developmental English class.

Judging from the two taped tutorials, interviews with Melinda, and her journal entries, I felt Melinda made significant changes in her tutoring practice. She received high ratings on acceptance of the tutee’s attitudes and feelings, and moderately high ratings on negotiating a goal for the tutorial and listening. Melinda’s balance of directive strategies like giving cues and directions and non-directive strategies like questioning was appropriate for this tutorial with its focus on grammar and sentence level errors.
Perhaps some of the improvements observed in the second tutorial were due to the fact that Melinda and Doreen had already established a good working relationship and Melinda found it easier to collaborate and be less directive with non-traditional students like Doreen. Nevertheless, the second taped tutorial provides evidence that Melinda had incorporated into her practice some of the preferred tutoring practices like offering positive feedback, and encouraging the tutee to make the changes on her paper.

Melinda’s metaphor for tutoring also changed during the semester, although it continued to be a sports metaphor. Whereas in September she had said tutoring was like a game of golf; in December, she saw it as a marathon.

I feel that there is so much distance to cover in tutoring, that slow and steady is best. You cannot learn everything at once. Keep being persistent and you will eventually cross the finish line. Now, having some experience, I see that tutoring is not filled with spectacular shots (golf) but requires persistence and stamina to be successful. Yes it is still a challenge, but it relies less on chance and more on focus (In-class metaphor survey 2).

Melinda competed with herself to be the best tutor she could be. Throughout the semester, she expressed positive feelings for her tutees, confidence in their abilities to succeed, and patience with herself as she attempted to improve her tutoring practice.

By analyzing Melinda’s journals, interviews, and tutorials, I was able to see changes in Melinda’s thinking about tutoring that were not evident in the seven coded journals. The journals and interviews indicate that the complexity of her thinking about tutoring increased, especially in terms of her conceptions of teaching, learning and tutoring. The videotapes show that Melinda’s tutoring practice improved in several ways, particularly in accepting the tutee’s attitudes and feelings, negotiating a goal for the
tutorial, providing positive reinforcement, and offering corrective feedback. These changes are consistent with the increases in Melinda's P% scores on the DIT-2 (from 32 to 48) and the PCM (from 2.33 to 2.5). By all indicators, Melinda is a good example of a tutor who was poised for growth and made appropriate changes in her thinking about tutoring and in her tutoring performance by participating fully in the Tutor Development program.

Discussion of Narratives

Each narrative describes an individual's development as a tutor and highlights the ways in which the three tutors conceived of teaching, learning, and tutoring and their roles as tutors, an idea which emerged only through writing the narratives. Each narrative also highlights the tutors' phases of concern, their feelings about tutoring, their thinking about tutoring, and their ability to reflect on theory and experience and apply it to their practice. In this section, I discuss the differences I observed in their experiences and propose some reasons for those differences.

Carolyn, Eric, and Melinda brought their preconceived ideas of teaching, learning, and tutoring to their role-taking experience. Although they all saw teaching as imparting knowledge (a transmission model), Carolyn and Melinda's views of teaching went beyond imparting knowledge to include the interpersonal dimension, the connection between the teacher/tutor and the learner. For them, learning was more than acquiring knowledge; it was integrating new information to "make it part of who you are" (Melinda), which in turn makes it possible "to see things in a new way" (Carolyn). Their
broader views of teaching and learning and their sensitivity to the interpersonal
dimension disposed them to be flexible and adapt to their tutees.

Eric saw the tutor as one who assists students to acquire skills; preferring to see
himself as the tutee’s buddy, he rejected the idea of the tutor playing an instructional role.
Eric’s conceptualization of his role limited his choices of tutoring strategies and his
ability to adapt to different situations. Furthermore, despite his desire to be a buddy, Eric
did not attend to the interpersonal dimensions of the tutor/tutee relationship. As Mann
(1993, 1994) and Reiman and Thies-Sprinthall (1998) have noted, individuals at higher
stages of development are more likely to attend to the interpersonal dimensions; both
Carolyn and Melinda had higher scores on the PCM, an instrument that is a measure of
interpersonal maturity. Eric, on the other hand, scored at the moderate stage on the PCM,
and he did not concern himself with the interpersonal dimensions of tutoring.

In a similar vein, an individual’s concern with personal issues, rather than the
impact of their actions on others, is related to Fuller’s (1969, as cited by Reiman & Thies-
Sprinthall, 1998) phases of concerns and to developmental stage as described by Rest et
al., 1994). Carolyn and Eric both wrestled with personal issues, but Carolyn managed to
meet her tutoring obligations, to remain focused on the impact of her tutoring upon her
tutees, and to complete the course work before the end of the semester. Eric, on the other
hand, missed five classes and opportunities to gain from class discussion of theories, in-
class demonstrations, practice and feedback; he also failed to meet some tutoring
obligations, and he took an “Incomplete” in the course.
Evidence of Carolyn and Melinda’s shift from concern for themselves to concern for their tutees and of Eric’s failure to make the shift can be found in the journal entries. At first, Carolyn was concerned with how her tutees perceived her and how credible she was as a tutor. By mid-semester, she was no longer worried about herself but rather, she was focused on outcomes for her writing-anxious tutee. Melinda, intent upon developing relationships with her tutees, worried that they might blame her if they did not get the grades they wanted. Like Carolyn, Melinda became more interested in her tutees’ progress over the course of the semester and less concerned with their perceptions of her. Eric, on the other hand, worried mostly about himself and complained about his tutees.

In terms of Fuller’s (1969) phases of concern, Carolyn and Melinda moved through the three phases while Eric seemed to be stuck in the first phase, perhaps moving at times into the second phase. Along the same lines, Carolyn and Melinda moved from feelings of anxiety to feelings of success whereas Eric continued to be anxious and sometimes frustrated.

Perhaps one reason for Eric’s lack of movement through the phases of concern was the quality of his experience which differed from that of Carolyn or Melinda. They were both class-link tutors and conducted only individual tutorials with tutees; thus, they had opportunities to develop relationships with the students. Eric, on the other hand, was not class-linked, and he met tutees mostly through study groups and drop-in tutorials where several students might be seeking help at the same time, often on different problems. Consequently, he had less opportunity to know his tutees on a personal level.

32 The reader is reminded that quality of experience was defined as the number and types of tutorials and the types of students, the tutor’s relationship with the tutees, and the tutor’s feelings about the experience.
The three tutors also worked with different kinds of students and held different expectations for their tutees. Carolyn worked with students in a Freshman Composition class, none of whom had learning disabilities; she believed her tutees to be passionate about learning, and she expected them to be successful in the course. Melinda worked with underprepared students in a developmental English class, and although she saw the gaps in their preparation for college, she remained optimistic about the outcomes for her tutees. Eric worked with elementary algebra students and pre-calculus students, most of whom were struggling with the subject; at least one had a learning disability that impacted his processing and his performance. Eric was frustrated by some of his experiences, and the poor test grades reported by some of his tutees fed his pessimistic views of their chances to succeed in the course. So while Carolyn and Melinda were finding their experiences challenging but satisfying, Eric was finding many of his experiences excessively challenging and less than satisfying, even frustrating, further evidence that he probably did not receive sufficient support for the challenges he met.

The tutors' feelings about tutoring may have affected their thinking about tutoring as it was revealed in the journals. In Carolyn's early journal entries, we saw her insecurities about tutoring, but as she became more confident, the changes in her thinking about tutoring were evident in the ways she incorporated theories of development into her thinking about her tutees, and made the connections between tutoring strategies described in the readings to her experiences in tutorials. Likewise, in Melinda's journals, she initially saw her biggest challenge as overcoming her insecurities, but later she realized that learning to apply more non-directive strategies was her real challenge. Following
Joyce and Showers (1988) repertoire, the Tutor Development course provided her opportunities to practice this new skill, as well as the coaching and support she needed to meet this challenge. Another change in her thinking was in her understanding of teaching and learning. After reading about Constructivism, Melinda began to see teaching and learning as reciprocal processes, and this change in her thinking facilitated the change in her tutoring practice.

In Eric’s case, his feelings about tutoring appeared to get more negative toward the end of the semester. However, it is harder to trace the changes in Eric’s thinking about tutoring because of the six week time lapse between Journals 4 and 5. His negative feelings about himself, which dominated Journal 5 and his self-assessment in Journal 6, continued through most of the journal entries. When he applied the readings to himself, he criticized himself for not meeting the ideals expressed in the articles. Often the negative feelings appeared to be related to the type of tutorials he was conducting (mostly groups) and the students with whom he was working.

Despite the negative thinking Eric expressed in his journals, he made progress in his performance in tutorials. The changes he made appear to be related to feedback he received from the mathematics supervisor on his first tape. In the second tape, after offering the tutee an opportunity to set the direction for the tutorial, Eric selected the problems to work on, and he kept the tutorial focused on preparation for the tutee’s final exam. Although he did not use modeling or explanation when they seemed to be called for, he added structure to the tutorial, used visual cues, and listened actively to the tutee’s
problem solving process. He also offered positive feedback and encouraged the tutee to think positively.

Changes in tutoring performance were not as observable in Carolyn's case because both of her taped tutorials were well done. Since developmental stage has been found to predict performance in complex tasks (Reiman, 2000), Carolyn's abilities to detect problems and choose appropriate strategies to resolve problems appear related to her high developmental stage. She was flexible, sensitive to the tutee's needs, built a relationship with the tutee, and adapted her tutoring to the situation at hand.

Changes in tutoring performance were more evident in Melinda who received several low scores on her first tutorial. Whereas Melinda took control of the student's paper in the first tutorial, she collaborated with the tutee in the second tutorial to set a goal. She allowed the tutee to write notes and make corrections on the paper herself, and used more non-directive strategies like positive reinforcement, questioning, and corrective feedback. Several changes in performance appear to be the consequence of Melinda's journal reflections on readings and her tutorials. Changes in her performance paralleled her movement through the phases of concern and her growth in ethical reasoning as indicated by the DIT-2.

In terms of Lepper et al.'s (1997) acronym INSPIRE (Intelligent, Nurturant, Socratic, Progressive, Indirect, Reflective, Encouraging), Carolyn and Melinda displayed intelligence and nurturance; they often utilized the Socratic method, and they expected their tutees to progress. Eric was intelligent and knew his subject. He preferred using the Socratic method over other tutoring strategies, but he did not recognize when his
questions were causing the tutee to become confused. Although he saw himself as the tutees’ buddy, he did not work on building relationships with his tutees, and he had low expectations for some of this tutees. By his own admission, he was not “progressive.” On the other hand, Eric was probably most inclined to be indirect. Carolyn moved comfortably between direct and indirect tutoring strategies, while Melinda struggled to be more indirect with some of her tutees. Being reflective themselves, Carolyn and Melinda encouraged their tutees to reflect on their writing, whereas Eric – again by his own admission – usually did not allow enough time for reflection in his tutorials. All three tutors encouraged their tutees and tried to promote the tutees’ growth toward learning independently. Using Lepper et al’s (1997) acronym INSPIRE, I judged Carolyn to be the most expert among the three tutors and Melissa to be making progress toward being an expert tutor. Eric was slower to make progress, although his second taped tutorial is evidence he was attempting to integrate new theories and skills into his tutoring performance.

The Role of the Teaching and Learning Framework

Of the three tutors described in the narratives, Melinda demonstrated the most changes: in her conceptions of teaching, learning, and tutoring, in her thinking about tutoring, and in her tutoring performance. Of the three examples, Melinda was also the most immersed in the Tutor Development class and the tutoring experience that was designed to meet the conditions of both parts of the Teaching and Learning Framework: skills building and developmental growth. Although she missed two classes, Melinda completed all of her assignments on time and met with the instructor to catch up on
missed activities. In class, she volunteered to participate in demonstrations; outside of class, she took advantage of opportunities to observe instructors and experienced tutors as they modeled tutoring skills in a real setting. She brought up her questions about tutoring for discussion in the class and consequently received more coaching on the skills or situations in question. All of the instructional components of the framework were present for Melinda. (See Table 6.1 and Appendix C, Design of the Tutor Development Course).

All five conditions for growth specified by the Teaching and Learning Framework were also evident in Melinda’s experience. As a classlink tutor, she worked mostly with students in the class, but occasionally she also accepted the challenge of assisting students in a literature class. She used her journals to reflect on and discuss the theories along with her experiences, and it was obvious that she was reading the responses to her journal because she made reference to our responses in subsequent journals. Of all nine tutors, Melinda wrote the most pages and made the best use of the journal. For her, there was a balance of experience and reflection. She tutored 26.25 hours and wrote over 100 paragraphs, exceeding the minimum I defined as necessary for a balance. There appears to have been a balance of support and challenge for Melinda. The journal responses were one way that the co-instructor and I offered our support and encouraged her to try new strategies. According to Melinda, she also got support from her fellow peer tutors and the classlink instructor, she enjoyed her first semester experience, and she chose to continue tutoring.

The instructional components of the Teaching and Learning Framework were less evident in Carolyn’s experience. Although she participated fully in the course for most
of the semester and completed all but one of the assignments, she missed three classes and opportunities to discuss theories, see demonstrations, practice new strategies, and get feedback. For Carolyn all of the developmental conditions were met. Although she did not continue to tutor the following semester because of her family problems, Carolyn, like Melinda, appreciated the quality of her tutoring experiences. She worked mostly with the students in her classlink, so she conducted individual and classlink tutorials. Carolyn reflected at length in her journals, and she tutored 28.5 hours, so there was a reasonable balance of reflection and experience. For the challenges she faced as a tutor, Carolyn said she had the support of Learning Center staff and her fellow tutors, but for the personal challenges in her life, she had little support. In hindsight, I believe I should have been more proactive in helping her get that support.

The components of the Teaching and Learning Framework were least present in Eric’s experience. Since Eric missed five classes, he missed several opportunities for discussion, demonstration, practice, and feedback. Some of the developmental conditions were not met for Eric, either. As a mathematics tutor who was not class-linked, Eric played several tutoring roles mainly with study groups and drop-in tutorials, but also conducting individual tutorials with a few underprepared students. These multiple roles posed several challenges for Eric, and in hindsight, it appears he did not have the support he needed to meet those challenges. He had not been sufficiently trained to conduct study groups, nor had he had sufficient time to observe experienced tutors facilitate drop-in sessions prior to doing it. The fact that Eric’s performance improved noticeably after
conferencing with the mathematics supervisor at mid-semester suggested that he would have benefited from more intervention and support.

Reluctant to write and reflect, Eric wrote short responses to journal prompts. He tended to write longer entries when he wrote about himself, often in negative terms, rather than writing about theory or his tutorials. In addition, the majority of Eric's journal entries were written during the last month of the course. The time gap between the experience, the readings, and the reflection meant that for weeks Eric was tutoring without reflecting. In the end, he logged a total of 28.4 hours and wrote 50 (usually short) passages.

In spite of Eric's negative feelings about himself as a tutor at the end of the semester, he continued to tutor the following semester. He was encouraged by the feedback on his second tape and the fact that he was caught up on his journal entries. Had all the conditions of the Teaching and Learning Framework been present for Eric, I suspect he would have demonstrated change in practice earlier in the semester, and perhaps there would have been more positive changes in his thinking about tutoring.

Conclusion of Qualitative Study

To explore what happens in tutors' experience to impact growth and fulfill the second purpose of the study, I had to answer the fourth research question regarding the mechanisms of change. Obviously influenced by the Teaching and Learning Framework and developmental stage theory, I was nevertheless open to finding other factors that might impact the tutors' growth. However, I found that each idea that emerged from the
qualitative analysis and the in-depth inquiry into three tutors' experiences was in some way related to the Teaching and Learning Framework. Therefore, I concluded that the mechanisms of change were the two components of the Teaching and Learning Framework – the instructional repertoire of the Tutor Development course and the developmental conditions specified by the Framework.

However, the mechanisms of change were moderated by other factors, namely the three factors that came to light in the qualitative analysis of the data: the tutors' developmental levels when they took on the role as tutor, the quality of the tutors' experiences, and the extent to which they were engaged in the all the components of the Teaching and Learning Framework. The narratives show that the components of the framework were not equally present for each of the participants, thus suggesting that each participant's growth as a tutor was impacted by moderating factors. The implications of these findings will be discussed in the final chapter.
I began this descriptive study because there was scant research available on undergraduate peer tutors who work in comprehensive learning centers, and few studies involving tutors had focused on their cognitive-structural development. As one who had taught and supervised tutors for several years, I believed there were practical and ethical reasons to care about the impact of taking on the role of tutor, and in particular, to be concerned about tutors’ cognitive and ethical development.

On the practical side, post-secondary institutions have high expectations for tutors and have come to rely on undergraduate peer tutors for promoting students’ academic success and increasing retention rates. The research reviewed in Chapter 2 suggests that in order to meet those high expectations, individuals need to be functioning at moderate to moderately high levels of cognitive complexity. People at higher levels of cognitive development tend to be flexible and tolerant of uncertainty (Hunt & Sullivan, 1974), reflective and empathic (Kegan, 1982, 1994; Oja & Reiman, 1998). They are able to examine situations from multiple perspectives (King & Kitchener, 1994) and detect and solve problems (Mann, 1993).

Comprehensive learning centers are those who offer multiple services across the curriculum, such as tutoring in mathematics and foreign languages, assistance with writing, services for students with disabilities, and support for English Language Learners (ELL).
From an ethical perspective, institutions that do not attend to the impact of taking on the tutorial role, but focus only on the tutors’ service to the college, run the risk of exploiting the tutors (Bruffee, 1978). Furthermore, tutoring, like teaching, is an ethical activity that requires knowledge and understanding of the ethical requirements and boundaries. Those boundaries include maintaining students’ confidentiality, knowing when to make referrals or what to disclose to supervisors, and knowing how much help is appropriate.

As a director of a learning center, instructor, and supervisor of undergraduate peer tutors, I have several goals for tutor training: to develop their thinking about tutoring so they can adapt to new situations, identify problems and take steps to resolve them, to choose appropriate tutoring strategies for the particular situation, and to work within ethical boundaries. All of these goals assume that tutors are functioning at least at moderate levels of cognitive complexity and interpersonal maturity. However, until I conducted this study, I had only personal observations and anecdotal evidence about tutors’ levels of cognitive-structural development or the effects of the tutoring experience on tutors.

There were two purposes for this study. The first purpose was to investigate how undergraduate peer tutors change during their first semester of taking on the tutoring role and participating in a program of reflective practice. The second purpose was to investigate what happens in tutors’ experiences to impact growth. In addition, this study served the practical purpose of assessing the Tutor Development Program modeled on the

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34 From this point forward, undergraduate peer tutors will simply be referred to as tutors.
Teaching and Learning Framework (Reiman & Thies-Sprinthall, 1998). In undertaking this study, I aimed to make a contribution to the research on undergraduate peer tutors; it was also my hope that an effective model for tutor training would emerge from my study.

Tutoring and cognitive-structural development are both complex processes that require a complex investigation. In an effort to address the complexities, I focused on four research questions: (1) Are there cognitive structural changes? (2) Are there changes in the complexity of their thinking about tutoring? (3) Are there changes in tutoring practice? (4) What are the mechanisms of change? The results of the study -- while not conclusive -- provide some insights into the ways nine tutors changed during their first semester as tutors and some of the factors that influenced change. In this chapter, I briefly summarize the results, acknowledge the limitations, and discuss the lessons learned and the implications of the study. This discussion is followed by a list of possibilities for future research.

To address the first purpose and answer the first research question, three instruments were used to assess changes in the tutors' cognitive-structural levels: the Paragraph Completion Method (Hunt, 1971), the Reflective Judgment Interview (King & Kitchener, 1994), and version two of the Defining Issues Test (Rest & Narvaez, 1998). The PCM and DIT-2 were administered three times, while the RJI was administered twice. Question two regarding the changes in the complexity of the participants' thinking about tutoring was addressed by training two outside professionals to code seven journal entries for each tutor for four pre-defined categories drawn from the theories on which the three instruments were based: flexibility, tolerance of uncertainty, disposition to
critical thinking, and the ability to detect problems. Changes in performance were measured by two trained outside professionals who used a checklist of tutoring behaviors based on theories about tutoring to rate video or audio-tapes of tutorials at mid-semester and the end of the semester.

The results reported in Chapter 4 were mixed, with some assessments showing gain while others showed no gain. The results suggest that the answer to questions 1, 2, and 3 is that certain individuals who take on the role as tutors and participate in a supportive class benefit cognitively and ethically from the experience. For most participants, the change process initiated by taking on the tutor’s role had only begun at the end of the first semester of the tutoring experience. The mean scores on the DIT-2 indicated there were changes in moral reasoning, but there was no group change in conceptual level or in reflective judgment. The group mean P% score (46) on the DIT-2, representing post-conventional thinking, increased by 14.67 points to 60.67 on the first post-test taken at the end of the four-month intervention. The increase was significant (p<.05) and represents a change that can be likened to the change from undergraduate level moral thinking to graduate student level. On the PCM, all nine tutors scored at a moderately high to high conceptual level on the PCM pre-test, and the group means on both post-tests showed no significant change. The group mean PCM scores on all three administrations were at the high conceptual level (2.35, 2.28, 2.25). The group means on the RJI pre- and post-tests showed that tutors most often used level 4 (quasi-reflective) thinking; level three (pre-reflective) was the second most frequent level. There was no significant difference between pre- and post-test scores on the RJI.
The seven journal entries coded for each tutor indicated no group change in the complexity of participants' thinking about tutoring. The group means in all four categories in the coded journals indicate that most tutors were thinking at a moderate level (3 on a 5 point scale) of complexity. Coded journals might have been more useful in assessing changes in tutors' thinking if all 14 journal entries had been coded for all participants and if coders had been better trained. Coders found the four categories (flexibility, tolerance of uncertainty, disposition to critical thinking/reflective judgment, and ability to detect a problem) were insufficiently delineated, and some statements in journal entries could be construed as belonging to more than one category. The problem of overlapping categories might have become evident had a pilot study been conducted. Training of the coders should have included training in the theories underlying the PCM, the RJI, and the DIT-2 because the four pre-defined categories were drawn from those theories.

As a group, tutors displayed change in only three behaviors by the end of the semester. Because the study was only one semester long, a gain of .5 (on a 5 point scale) in any tutoring behavior was defined as showing improvement in that category, and a gain of .5 in three or more behaviors was defined as showing overall improvement. Ratings of tutors' video and audio-tapes showed that tutors showed an improvement of 0.6 points or more in three of the seven non-directive behaviors: negotiating a goal (+.6), asking questions (+.6), providing corrective feedback (+1.5). No relationship could be detected between scores on coded journals and ratings on tutors' tapes or between changes in scores on the instruments and changes in tutoring practice.
To sum up, the results of the quantitative measures suggest that taking on the role of tutor for one (four-month) semester and participating in the Tutor Development course based on the Teaching and Learning Framework positively impacted moral reasoning and tutoring practice, but no other relationships were detected.

The second purpose of the study was to investigate what happens in tutors’ experience to impact growth. Two approaches were taken to address the fourth research question regarding the mechanisms of change. First, coders did a content analysis of tutors’ journals which indicated that the act of tutoring itself was probably most responsible for any changes. Second, since simply counting references to tutorials, the journals, and the course readings did not adequately address the question, I did a qualitative analysis of all the data including the results of the quantitative measures, Learning Center records of tutorials, attendance records, and all journal entries. Three themes emerged from that analysis: the tutors’ developmental level at the outset of the study, the quality of the tutors’ experience, and the degree to which the tutors experienced all the components of the Teaching and Learning Framework. In order to better understand what happened in tutors’ experience to impact growth, I analyzed additional data for three tutors who appeared to have different experiences and to change in different ways or to different degrees. The additional data included transcripts of three personal interviews for each tutor, additional class assignments, and transcripts of the taped tutorials. Using all the data on these three tutors, I wrote narratives of their experiences.
The narratives suggest that the mechanisms of change were the two components of the Teaching and Learning Framework -- the four part instructional repertoire described by Joyce and Showers (1988) and the five conditions for growth specified by Reiman and Thies-Sprinthall (1998). Furthermore, the mechanisms of change were moderated by three factors: the tutors’ developmental levels at the outset of the study, the quality of the tutoring experience, and the extent to which tutors engaged in the components of the Teaching and Learning Framework. The first moderating factor -- the participants’ developmental level at the outset of the study as measured by the PCM and DIT-2 -- affected the tutors’ perceptions of their experiences, their abilities to reflect on the experience and to apply new learning to their tutoring practice, and the pace with which they moved through the phases of concern.

The second moderating factor -- the quality of the tutors’ experience -- was defined as the tutors’ feelings about their experiences (i.e. their degree of satisfaction or frustration), the relationships they formed with tutees, the types of tutorials they conducted, and the degree of challenge presented by the tutees. The two class-linked tutors, who worked with a limited number of students and developed relationships with their tutees, drew satisfaction from their tutoring experiences, developed confidence in their skills, and showed growth in their thinking about tutoring. On the other hand, the tutor who worked with many under-prepared mathematics students, mostly in group settings, felt unsuccessful, and expressed frustration throughout the semester.

The third moderating factor was the extent to which tutors engaged in the instructional repertoire and experienced the conditions for growth specified by the
Teaching and Learning Framework. The two tutors who were immersed in the instructional component and experienced the developmental conditions showed positive changes in their conceptions of their role as tutors, their thinking about tutoring, and their tutoring performance. The tutor who missed several classes and thus did not participate fully in the instructional repertoire did not show changes in the way he conceived of his role or in his thinking about tutoring. Among the developmental conditions that were missing in his experience were a balance of experience and reflection and a balance of support and challenge. He showed change only in some aspects of his tutoring performance.

The three narratives of tutors’ experiences testified to the research of Kegan (1982), King and Kitchener (1994), and Rest et al. (1999b) that individuals are never truly IN a stage or phase; rather, they exhibit some characteristics of several stages or phases, and they might exhibit different stages in different domains. For instance, Eric’s scores on the pre-tests placed him in a moderate stage of development. In practice, he usually focused on himself and personal concerns (Fuller’s phase 1), but he also worried about his effect on tutees (phase 3). In an effort to avoid placing an individual in a stage, King and Kitchener (1994) use the terms functional and optimal to describe the range of an individual’s development. Applied to tutoring, the functional level might be what a tutor can do by himself without support, instruction, and coaching to adapt skills to the situation. The optimal level, then, would be what a tutor can do with support, instruction in tutoring strategies, opportunities to practice in a comfortable environment, and coaching. Eric is an example of a tutor whose functional level was a novice tutor lacking
skills and flexibility, but he improved with guidance and support from his supervisor. In seeking to promote tutor’s development as practitioners, supervisors aim to increase the functional level by providing the best possible conditions, including support and coaching.

When I chose to include both quantitative and qualitative research in my study, I hoped that the results of each part of the study would inform the other, and to some extent, that is the case. Connections between the two parts of the study occurred in four areas: (1) tutors’ interactions with the Teaching and Learning Framework; (2) the pre-test scores on the PCM and DIT-2; (3) the participants’ thinking about tutoring; (4) changes in tutoring performance. While the findings in the qualitative study cannot be generalized, they do provide a context for the findings of the quantitative study.

First, the quantitative study treated the Teaching and Learning Framework as a constant, assuming that all tutors would engage in the program to a similar degree. However, as I pointed out in Chapter 5, ensuring that the treatment was standardized for all participants is difficult when the study is conducted in a naturalistic setting. The qualitative analysis revealed differences in the degree to which tutors participated in the instructional repertoire and differences in the extent to which developmental conditions were present for each tutor. This finding of the qualitative study helped to explain some of the differences in tutors’ experiences and subsequent development.

Second, although the cognitive-structural instruments were shown to have limitations, the pre-test scores on the PCM, RJI, and DIT-2 did provide an estimate of the tutors’ developmental level at the outset of the study. The narratives illustrate how
developmental level affected tutors' perceptions of their experience, their abilities to conceptualize their role, to reflect on experience, and to integrate new learning with prior knowledge. One of the insights gained from writing the narratives was that tutors' conceptions of teaching, learning and their role as tutors influenced how they behaved and the rate at which they adapted to their new role.

Third, the qualitative study extended the investigation into tutors' thinking by including all 14 journals and looking for emergent categories, whereas the quantitative study included only seven journals per tutor and ended with the eleventh journal entry. During the additional three weeks of the semester, some tutors demonstrated more changes in their thinking. In addition, the qualitative inquiry drew upon class assignments and interviews to further probe tutors' thinking and examined the context in which statements were made or written. The qualitative study provided a broader picture of tutors' thinking and suggested that some tutors' thinking changed more than was evident in the quantitative study.

Fourth, to determine changes in performance, the quantitative study relied upon observation checklists completed by outside raters and only the numbers were used, not raters' comments. While the numbers were important, their usefulness was limited because the instrument itself had limitations. The checklist included both positive and negative behaviors but there was no way to distinguish positive from negative behaviors; thus scores could be misleading. The qualitative study, which included the transcripts as well as raters' comments, clarified areas in which tutors improved and where they did
not. For example, from the transcripts, I could discern instances of active listening, a skill that the checklist addressed only minimally.

In sum, the quantitative and qualitative parts of the study did complement each other, informing each other and allowing me to gain a more detailed picture of the tutors’ development. The combined results emphasize the importance of ensuring that all components of the Teaching and Learning Framework are present in the tutoring experience. Development requires instruction in skills, demonstrations of how to apply theories and new strategies, opportunities to practice new skills, actual tutoring experience, coaching, as well as guided reflection, a balance of tutoring experience and reflection, support and challenge, and continuity over time.

Limitations of the Study

There were several limitations to this descriptive study, beginning with the threats to internal validity noted in Chapter 3 and the limitations of the instruments described in Chapter 5. The two major limitations were the short period of time during which the study was conducted and the small number of participants. Since development takes time, most researchers who investigate cognitive-structural development recommend a year between pre- and post tests. This study followed the example of other short studies of programs designed to promote cognitive-structural development, but it was unrealistic to expect large changes in one four-month semester. In addition, the small sample prevented any generalizations to be made about the results of the study. Nevertheless, the changes in moral reasoning indicated by the DIT-2 and changes in performance over a
short period of time are worth noting and suggest that research into tutors’ cognitive-structural development merits further investigation.

Implementation threats related to the Teaching and Learning Framework that became evident only in the qualitative part of the study posed other limitations to the study. Many factors, such as students’ demand for tutoring services, could not be controlled because the study was conducted in a naturalistic setting. In addition, guided reflection – a component of the Teaching and Learning Framework – was not implemented in the way Reiman (1999, 2000) recommends. Our responses to tutors’ journal entries were not sufficiently differentiated according to the tutors’ developmental levels nor were they sufficiently differentiated according to the challenges and disequilibrium tutors experienced. We tended to respond to all tutors’ journal entries in similar ways – often with questions, sometimes with suggestions, sometimes with positive reinforcement.

Another problem that arose in implementing the Teaching and Learning Framework was providing a balance of support and challenge for all tutors. The number of hours tutors worked and the degree of challenge in those tutorials varied considerably, with the main differences being between mathematics and writing tutors. The qualitative part of the study indicated that support was not differentiated according to individual tutors’ developmental level and need for structure. Therefore, some components of the Teaching and Learning Framework differed from tutor to tutor.

This investigation into tutors’ cognitive and ethical development may also have been limited by the particular theoretical framework I used. If the same developmental
processes were examined from a different theoretical perspective, the results might look
different. However, no theory allows a researcher to tell the whole story. As noted in the
human being is more complex than all the theories about human development” (S. N.
Oja, personal communication, May, 2001). Regardless of what theoretical framework is
used in a study of tutors’ development, it will provide only a limited perspective. By
using multiple theories and many data sources, I hoped to capture some of the complexity
of their experiences and their development.

Some researchers may regard my dual role as researcher and participant observer
as a limitation. I believe the risk of researcher bias in the quantitative part of the study
was significantly reduced by sending journal responses and videotapes to outsiders for
coding and rating. In addition, using multiple forms of data in both the quantitative and
qualitative parts of the study protected against the risk that my dual role affected some
forms of data (Creswell, 1998; Frankel & Wallen, 2000). However, I acknowledge that
some tension arose between my two roles because, as the person who taught the weekly
tutor seminar, responded to journals, and mentored tutors on their practice, I made
decisions that favored the course rather than the study. For example, I selected readings
and designed journal prompts that would tell me what the tutors thought about the
theories and suggestions for practice. While I hoped the prompts would stimulate
reflective practice, they did not always lend themselves to coding for the four pre-defined
categories. Another tension I felt between the two roles was that sometimes I was
reluctant to “push” a tutor to reflect more because I worried that it might appear I was
trying to influence results. I realize that, in fact, I was supposed to be trying to promote change, but it is possible I did less mentoring for some tutors for fear of prejudicing the outcomes. In addition, in my role as instructor and supervisor, I usually develop close relationships with the tutors. As a researcher, I felt compelled to maintain some distance and consequently may not have developed the close relationships with tutors that I usually have. Viewed from the perspective of the Teaching and Learning Framework, this distance is unfortunate because the nature of the relationship between supervisor/teacher and the student contributes to the supervisor’s understanding of the student’s strong areas and areas that need more support.

The main limitation of the qualitative part of this study -- as in all qualitative research -- was that the findings cannot be generalized; nevertheless, there were lessons to be learned from each of the examples. Another limitation of the qualitative part of the study in particular, but indeed of the study as a whole, was the proportion of females to males and the proportion of non-traditional aged tutors to traditional-aged tutors. The convenience sample of tutors included only two males, and non-traditional aged tutors outnumbered traditional-aged tutors. Although the three selected examples used in the qualitative part of the study are proportionate to the sample and to the study body in general at our college, they may not be illustrative of the gender and ages of students or tutors at other colleges.

Significance of the Study

In spite of its limitations, this study broke new ground on the topic of undergraduate peer tutors and took a step toward better understanding how taking on the
role of a tutor and participating in a program of reflective practice can influence tutors’
cognitive-structural development and tutoring performance. Few studies have examined
the tutors in comprehensive learning centers, and those that have done so have offered a
limited perspective because they used only one instrument, did only a qualitative study,
did not address the mechanisms of change, or did not otherwise probe the complexities of
tutor development. This study brought multiple perspectives to the study and shed light
on factors that might affect tutors’ cognitive-structural development when an
undergraduate takes on the role as tutor.

Lessons Learned and Implications of the Study

This study provided me an opportunity to critique the Tutor Development course
and tutoring program under my direction. The outcomes suggest ways in which the Tutor
Development course and the overall training program might be improved.

First, I was reminded that tutoring is characterized by uncertainty and instability,
so not surprisingly, tolerance of uncertainty, according to tutors’ journals, was a quality
that they struggled to achieve all semester. In fact, for some tutors, it appeared that
tolerance of uncertainty decreased over the semester, and this raised the question: What is
it about the program that contributes to tutors’ fear of uncertainty? Mathematics tutors,
in particular, grew more anxious about not having the “right” answer while writing
tutors’ need for specific answers increased with their confidence and knowledge that, in
writing, there are seldom “right” answers. The mathematics tutors’ fear of uncertainty
may have been related to their belief that in mathematics there IS only one answer and
their concern that they might lead tutees to make errors.
Most likely, some uncertainty was due to tutors’ lack of practice with specific types of problems and applying the tutoring strategies they were learning. The Tutor Development program should be revised to allow tutors more opportunities and time to practice the tutoring skills we advocate. All tutors would also benefit from additional practice with using non-directive tutoring strategies, such as asking questions, providing positive reinforcement and corrective feedback. The experiences of mathematics tutors like Eric who were anxious about conducting study groups suggests that most mathematics tutors would also benefit from having more time to observe experienced tutors or professional staff conduct study groups and conduct drop-in tutorials before being asked to do it on their own. Tutors who are expected to facilitate groups and/or drop-in tutorials need specific training in these skills before they are asked to work with groups without support. However, it is important that the tutoring experience and the training course run concurrently because the two parts of the program are interdependent; experience is required so there is a context in which to apply the theory, and theory is required to provide a rationale for the skills being taught and applied.

The narratives called attention to the impact of tutors’ feelings upon the quality of their experience, and ultimately upon their development as tutors. Lofland and Lofland (1992) observe that many roles, like tutoring, “generate emotional problems or experiences that are unique to or uniquely configured in them” (p. 117). Addressing those problems and managing unsettling experiences is part of the challenge of taking on the role as tutor, but supervisors can assist tutors with addressing the emotional problems generated by the new experiences. As supervisors, we need to find ways to
“acknowledge the dissonance” (Reiman, 1999, p. 610) of tutors and foster the self-regulation that will help them deal with the dissonance. For emotional issues outside of the tutoring experience, supervisors may need to turn to outside resources. Carolyn’s and Eric’s experiences implied that supervisors need to be more pro-active in helping tutors experiencing personal problems to identify and contact support services, even if they are resources outside the institution.

From Eric’s experience I also learned that tutors develop at different rates, and that it is worth the supervisors’ time and effort to help tutors over the “rocky” parts, as Eric called them, because most tutors will eventually develop the skills they need to be effective. Eric’s experience calls attention to the importance of continuity in the role-taking experience as called for by the Teaching and Learning Framework. Some individuals need more time to learn the skills and gain the confidence they need to be effective tutors. Given more time and practice, tutors who hold a transmission model of teaching and learning may learn when to apply non-directive strategies and when to be flexible and apply directive strategies if appropriate for the situation.

Another lesson I learned was that deliberate education in tutoring ethics should be on-going, not confined to the first semester of tutoring. During the second semester of the Tutor Development course, we did not include discussions of ethical issues and we did not ask tutors to revisit their ethical codes. The DIT-2 scores in April show that for most tutors there was little positive change, if any, between the first post-test in December and the second post-test in April. Because ethical issues are an ever-present concern for tutors and Learning Center personnel, and because research suggests that
ethical education requires deliberate attention to the issues (Narvaez, 1999), it seems logical to include an on-going discussion of ethical issues in tutoring. Such discussions allow the supervisor to continue directing tutors' attention to the impact of their tutoring upon others and the boundaries for ethical conduct.

On a very practical level, the study suggests that the Tutor Development course should be a graded course rather than a credit/no credit course. Although tutors are motivated students who usually excel in college, they are often competitive as well, and many of them plan to attend graduate school. The tutors in this study wanted to be graded, and they said they needed the additional motivation of a grade in the course to keep up with the assignments. The course curriculum needs to be rigorous, but reasonable. Sometimes, indeed, more is less. I found that when tutors had more time to process a concept, practice a skill, or reflect on a reading, they appeared to learn and retain more. On occasions when they felt there was “too much reading” — which we assigned because we felt there was so much more they needed to know — tutors tended to dedicate less time to reflecting on the ideas.

The narratives called attention to the importance of relationships tutors develop with the tutees, as well as with their fellow tutors, the supervisors, and instructors. Based on Carolyn’s and Melinda’s experiences, it would seem advantageous to the tutors’ development to expand the classlink program and help classlink faculty learn how to use tutors in the classroom. Tutors who have a good relationship with the instructor get additional support, and working in the classroom allows tutors the opportunity to build relationships with tutees. Tutors who valued relationships with their tutees had more
satisfying experiences. A classlink assignment has the added advantage of limiting the number of tutees with whom each tutor works.

Finally, I learned the importance of attending to all the components contained in the instructional repertoire and developmental conditions of the Teaching and Learning Framework. Without adequate skills, practice, feedback, and coaching, tutors remain uncertain and ineffective in their new role. Tutors must be held accountable for attending all the classes, participating in demonstrations, observing experienced tutors, completing assignments, and conferencing with supervisors. Likewise the developmental conditions must be present if we are to expect cognitive and ethical growth, changes in tutors’ thinking about tutoring, and changes performance. From Eric, I learned that if reflection is to be useful, it needs to follow the experience in a relatively short time. Furthermore, the supervisor’s feedback needs to be timely, and supervisors should follow up journal entries with conversation if tutors appear to need additional support. Support should be differentiated according to the tutor’s developmental level, skill level, and confidence level. As noted above, supervisors may need to limit the amount of time first semester tutors spend tutoring in order to ensure there is a balance of experience and reflection and support and challenge. When each component of the Teaching and Learning Framework receives sufficient attention, the Framework is an effective model for a tutor development program because it incorporates the instructional repertoire required to train tutors and the developmental conditions to promote the tutor’s growth.
Future research

To address the limitations of this study, future research might involve several participants in a similar study which takes the same cognitive-structural approach to tutors' development. Using a larger sample would allow the researcher to generalize the results of the study. In addition, conducting a similar study with a larger group might allow researchers to examine whether there are gender or age differences in tutors' development, issues that my study did not address.

A longitudinal study of tutors spanning the full period of time they tutor would address the problem of the short period of time and provide more information about the effects of taking on the tutoring role. Most tutors at my college continue in their role for one and a half to two years, and a few continue three years, depending on the point in their college career when they are hired and the pace at which they are pursuing their degree. A study of tutors over time would provide more insights into the effects of taking on the role of tutor.

Researchers concerned with the limitations of stage theories might take a different theoretical approach to investigating tutors' development. For example, conducting a grounded theory investigation that included journals, interview transcripts, and tapes, would enable a researcher to develop a theory about the nature of the relationship between tutor and tutees, the connections among the types of tutorials, diversity of tutees, and the tutors' feelings about their experience.
Conclusion

Several methods were used in this study to gather different perspectives on tutors' development. By viewing the combined results of the quantitative and qualitative parts of this study, I gained a better understanding of how tutors construe their experiences as tutors. I also gained insights into ways we as educators, supervisors, and mentors of undergraduate peer tutors might shape our programs to enhance the tutors’ experiences. The Teaching and Learning Framework provides us an effective model for creating tutor development programs. The study strengthened my belief that there are practical and ethical reasons to attend to tutors’ cognitive-structural development, their thinking about tutoring and their tutoring practice. To do so is to fulfill an aim of higher education and enhance the education of advanced learners, while meeting institutional needs to provide academic support to students across the curriculum.
References


College Reading and Learning Association (2002). The international tutor certification program. Retrieved February 23, 2002 from [http://www.crla.net/tutorcert.htm](http://www.crla.net/tutorcert.htm)


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PROJECT
An investigation into the cognitive-structural development of peer tutors

TITLE

The Institutional Review Board (IRB) for the Protection of Human Subjects in Research has reviewed and approved the protocol for your study as Exempt as described in Federal Regulations 45 CFR 46, Subsection 101 (b), category 2 with the following contingencies. You must respond to the stated contingencies to the IRB's satisfaction before involving human subjects in your study.

In the letter of informed consent, the investigator needs to address the following:
* Add contact information for the investigator, the Associate Dean, and the Assistant Director.
* Add the following statement, "If you have any questions about your rights as a research subject, you may contact Julie Simpson in the UNH Office of Sponsored Research at 603-862-2003 or julie.simpson@unh.edu to discuss them."

Please forward a copy of the revised letter to the IRB for the file.

Approval is granted to conduct the study as described in your protocol once you have fulfilled the contingencies. Prior to implementing any changes in your protocol, you must submit them to the IRB for review, and receive written, unconditional approval. If you experience any unusual or unanticipated results with regard to the participation of human subjects, report such events to this office within one working day of occurrence. Upon completion of your study, please complete the enclosed pink Exempt Study Final Report form and return it to this office, along with a report of your findings.

The protection of human subjects in your study is an ongoing process for which you hold primary responsibility. In receiving IRB approval for your protocol, you agree to conduct the study in accordance with the ethical principles and guidelines for the protection of human subjects in research, as described in the following three reports: Belmont Report, Title 45, Code of Federal Regulations, Part 46; and UNH's Multiple Project Assurance of Compliance. The full text of these documents is available on the Office of Sponsored Research (OSR) website at http://www.unh.edu/osr/compliance/Regulatory_Compliance.html and by request from OSR.

If you have questions or concerns about your study or this approval, please feel free to contact me at 862-2003. Please refer to the IRB # above in all correspondence related to this study. The IRB wishes you success with your research.

For the IRB:
Julie F. Simpson
Regulatory Compliance Manager

cc: File
Sharon Nodie Oja, Faculty Advisor

APPENDIX A

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Dear tutors:

You are being asked to participate in a study of the experiences of undergraduate peer tutors. Although volumes of research exist about the effects of tutoring upon students, very little research has been done on the effects of the tutoring experience on tutors. I am interested in the ways in which tutors change during their first semester as tutors. For example, I am curious whether you experience changes in your thinking, particularly your reflective judgment, and in your abilities to define and solve problems that arise in tutoring situations. Some of those problems are ethical while others involve tutoring strategies and critical thinking. It is my goal to gain an understanding of the tutoring experience from the tutors' point of view.

Participation in this study is voluntary; it is not a requirement for being a tutor or for enrolling in the tutor development course. It does involve a time commitment over and above your tutoring responsibilities and requirements for the course; I estimate that you will need to plan on six hours for interviews over the course of the semester plus an additional hour at the end of April, and you will not be paid for those additional hours. However, as an incentive to participate, I will create a small lottery of $100 and each participant’s name will be entered into the lottery.

As part of the tutor development course, you will complete the Hunt Paragraph Completion Test of Teaching and Learning Styles and the Defining Issues Test (2) in September and December. You will also be asked to videotape or audiotape at least two tutorials and to have those tutorials evaluated. In addition, all tutors will keep weekly journals in which they respond to specific writing prompts, write about their tutoring experiences, and submit the journals to me and the co-teacher for feedback. However, only participants in the study will have copies of their surveys, interview transcripts, and journals analyzed by me and two faculty members of two other institutions as we search for a better understanding of the tutors’ experience. This analysis will not be done until the study ends in December. I will make the results of the study available to you to check my understanding and perceptions against your own prior to including the results in my study. You have the right to drop out of the study without penalty at any time.

You will be assigned a number so your identity will be kept confidential; if any part of the study is published, neither the institution nor the participants will be identified. All efforts will be made to protect your confidentiality, and I do not anticipate any risks to you. There is an exception to the confidentiality clause, however. By law, I am required to go to the appropriate authorities if students disclose that they are being (or have been) sexually harassed by a faculty or staff member of the institution. I am also required to report to authorities any threats a student makes against him/herself or others. I do not anticipate that any of the surveys or interviews will lead to such disclosures, but
should you choose to disclose such information, I am obligated to go report the disclosures.

Should you have any concerns about the study that you do not want to bring to me, you can talk to the Associate Dean or to the Assistant Director/co-teacher. The Associate Dean can be reached in his office in the faculty office, by calling his office or by email. The Assistant Director can be reached in the Learning Center, Room 104, by calling her office or by emailing her. If you have questions about your rights as a research subject, you may contact the UNH Office of Sponsored Research at 862-2003 to discuss your rights or concerns.

To indicate that you have read and understand this letter, please check the appropriate statement below and initial it, whether or not you agree to participate. If you are willing to participate in my study of tutors' development during their first semester as tutors, please sign below.

___ I have read this letter and understand the purpose of the study.

___ I have read this letter and understand the purpose of the study. I agree to participate.

By signing below, you agree to participate in this four month study of how undergraduate peer tutors' change over the course of their first semester.

________________________  ______________________
Signature of participant    Date

________________________  ______________________
Signature of researcher     Date

35 The names phone numbers and email addresses have been deleted on the dissertation copy, but they were included on the actual letter to the students.
Appendix B: CRLA Certification Guidelines

The College Reading and Learning Association, the international organization that certifies tutoring training programs in higher education, has published the most generic list of topics for tutor training. CRLA relied upon experience and descriptive research to produce a list of suggested tutor training topics (Costa, 1997)\(^\text{36}\). According to CRLA (2002), over 300 tutor training programs in higher education have been certified since 1989\(^\text{37}\). CRLA claims that the “certification process sets a standard of skills and training for tutors” (p. 1).

To be certified at Level 1 (regular certification), tutor training programs must offer a minimum of 10 hours of training that includes at least 8 of 14 topics:
1. Definition of tutoring and tutor responsibilities.
2. Basic tutoring guidelines
3. Techniques for successfully beginning and ending a tutor session.
4. Some basic tutoring do’s.
5. Some basic tutoring don’ts.
6. Role modeling.
7. Setting goals and planning
8. Communication skills.
9. Active listening and paraphrasing.
10. Referral skills.
11. Study skills.
12. Critical thinking skills.
13. Compliance with the ethics and philosophy of the tutor program

In addition to the training, tutors must complete 25 hours of tutoring before they can be certified at Level 1. Certification at Level 2 (advanced) requires an additional ten hours of training and another 25 hours of tutoring experience (a total of 20 hours of training and 50 hours of tutoring). Certification at Level 3 (Master) requires 10 more hours of training and another 25 hours of tutoring experience (a total of 30 hours of training and 75 hours of tutoring experience).

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\(^{36}\) Costa (1997) pointed out that there is little evidence in support of including most of the topics CRLA suggests because there has been so little research on tutor training. CRLA only proposes topics; the organization does not make provisions for learning or practicing the concepts.

\(^{37}\) CRLA certifies tutor training programs, not individual tutors. The programs determine which tutors meet the certification requirements and issue the certificates.
Appendix C: Design of the Tutor Development Course to Meet the Specifications of the Teaching and Learning Framework (Reiman & Thies-Sprinthall, 1998)

The first part of this outline consists of the four parts of Instructional Repertoire described by Joyce & Showers (1988) and the ways in which the Tutor Development course was designed to meet the specifications of the Teaching and Learning Framework.

I. Rationale & theory
In designing the course, I asked myself, “What theories inform tutors’ learning and growth during the seminar and as they tutor?”
* the tutors’ theories in use
* Constructivism (selected readings)
* Developmental theory (selected readings)
* Critical thinking/Higher Order thinking? (handouts & selected readings)
* Ethical reasoning (scenarios, DIT-2, personal code)

II. Demonstrations
* In-class demonstrations & role-playing
  * Tutoring techniques (selected readings)
  * Active listening and reflective feedback (handouts).
  * Non-directive tutoring strategies like asking appropriate questions, being a transparent reader, modeling the thinking process/problem solving (selected readings and handouts)
  * Giving directions.
* New tutors will observe experienced tutors.

III. Practice with feedback
* Tutors will practice tutoring strategies in tutor development sessions and receive feedback from each other, experienced tutors, and co-teachers.
* Tutors will tutor while enrolled in the class.
* Tutors will be taped 2 times during the semester. Taping and observations will be followed by conferences with supervisor.
* Tutors will write in their journals about their practice and receive feedback from supervisors/instructors.

IV. Adapt and generalize through coaching
* Supervisors will assist tutors with adapting the tutoring techniques, theories, and strategies to different situations.
* Coach tutors in class as well as in conferences following taped tutorials.
* Encourage tutors to try new behaviors and new models of instruction.
* The amount of coaching will depend on tutors’ need for structure and interest in getting feedback on their performance.
The second part of this outline names the five conditions for growth listed by Sprinthall, Reiman & Thies-Sprinthall (1998) and summarizes ways in which the Tutor Development class and tutoring program meets the specifications of the Teaching and Learning Framework.

I. Significant new role
   * Becoming a peer tutor
   * Working in one or more tutoring roles: one-on-one tutoring, linking with a class, conducting study groups, or assisting with drop-in tutoring.

II. Guided reflection
   * Tutor journal assignments will require tutors to reflect on selected readings and their tutoring experiences.
   * Instructors will respond to weekly journal entries, aiming to provide both challenge and support according to tutor’s need.
   * Tutors will write a case history reflecting on tutoring experiences with one tutee and receive feedback from instructors.
   * Tutors will confer with supervisor to review tapes and reflect on their experiences.
   * Tutors will do self-assessments at the end of the semester and reflect on their tutoring experiences.

III. Balance between experience & reflection
   * Amount of time a tutor works will vary, but most tutors average about 6 hours per week.
   * Goal is to keep hours reasonable at the same time tutors reflect in journals.

IV. Support and Challenge
   * There are challenges inherent in the task, but supervisors will encourage new behaviors as tutors gain comfort with some techniques and strategies.
   * Tutors provide support for each other.
   * Supervisors provide support.
   * Tutors are held accountable for meeting their tutoring and class obligations.
   * As tutors gain experience, they are encouraged to take on other roles.

V. Continuity
   * Tutors will participate in the tutor development seminar at least one semester, preferably two.
   * Most tutors complete at least two semesters of tutoring, and many continue until they graduate.
Appendix D: Examples of Problems and Dilemmas

*Standard Question from the Reflective Judgment Interview*

There have been frequent reports about the relationship between chemicals that are added to foods and the safety of these foods. Some studies indicate that such chemicals can cause cancer, making these foods unsafe to eat. Other studies, however, show that chemical additives are not harmful, and actually make the foods containing them safer to eat.

Standard probe questions (King & Kitchener, 1994, p. 102).

1. What do you think about these statements?
2. How did you come to hold that point of view?
3. On what do you base that point of view?
4. Can you ever know for sure that your position on this issue is correct? How or why not?
5. When two people differ about matters such as this, is it the case that one opinion is right and one is wrong? If yes, what do you mean by “right”? If no, can you say that one opinion is in some way better than the other?
6. How is it possible that people have much different points of view about this subject? How is it possible that experts in the field disagree about this subject?

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38 This is one of first four problems developed by King (1977) and Kitchener (1977-78). See p. 259 King & Kitchener, 1994.
In Europe a woman was near death from a special kind of cancer. There was one drug that doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost to make. He paid $200 for the radium and charged $2,000 for a small dose of the drug. The sick woman’s husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about $1,000, which is half of what it cost. He told the druggist that his wife was dying, and asked him to sell it cheaper or let him pay later. But the druggist said, “No, I discovered the drug and I’m going to make money on it.” So Heinz got desperate and began to think about breaking into the man’s store to steal the drug for his wife. Should Heinz steal the drug for his wife?

Please rate the following statements in terms of their importance in making a decision about what to do in the dilemma. (1 = Great Importance, 2 = Much importance, 3 = Some importance, 4 = Little importance, 5 = No importance)

1. Whether a community’s laws are going to be upheld.
2. Isn’t it only natural for a loving husband to care so much for his wife that he’d steal?
3. Is Heinz willing to risk getting shot as a burglar or going to jail for the chance that stealing the drug might help?
4. Whether Heinz is a professional wrestler, or had considerable influence with professional wrestlers.
5. Whether Heinz is stealing for himself or doing this solely to help someone else.
6. Whether the druggist’s rights to his invention have to be respected.
7. Whether the essence of living is more encompassing than the termination of dying, socially and individually.
8. What values are going to be the basis for governing how people act towards each other.

Taken with permission of M. Bebeau from the website for the Center for the Study of Ethical Development.
9. Whether the druggist is going to be allowed to hide behind a worthless law which only protects the rich anyhow.
10. Whether the law in the case is getting in the way of the most basic claim of any member of society.
11. Whether the druggist deserves to be robbed for being so greedy and cruel.
12. Would stealing in such a case bring about more total good for the whole society or not.

Now please rank the top four most important statements. Put the number of the statement in the blank:

____ Most important item
____ Second most important item
____ Third most important item
____ Fourth most important item
Appendix E: Journal Prompts

The tutor journal is required for all tutors enrolled in UMST 521. Each week you will respond to the readings and reflect on your tutoring experiences. We encourage you to make as many connections as possible among the seminar discussions, the readings, and your experiences. You are also encouraged to use the journal as a means of raising questions and concerns. Research on journals has shown that they are an effective means of promoting reflective practice and higher order thinking.

Some of your journal assignments will be structured, especially early in the semester. That is, we will specify the questions to be addressed. Other assignments will be unstructured where you can choose the topic and format for the journal entry. Regardless of whether the assignment is structured or not, you are free to add your own thoughts and questions. Our hope is that the journal will be a dialogue journal in which we can respond to your thoughts and feelings about the tutoring experience.

Journals are due every Tuesday beginning the third week of class.  

* Week #1
1. Define teaching, learning, and tutoring.

2. After completing the learning styles inventories, reading Downing's chapter on learning styles, and completing Downing’s self-assessment, how would you describe yourself as a learner, writer, or math student? Please comment as to whether the characteristics you describe are an advantage or disadvantage to you as a tutor.

3. What do you expect to be your greatest challenges as a tutor?

4. What questions or concerns do you have at this point?

* Week 2
1. What is your current understanding of learning disabilities?

2. The following is a dilemma often brought up by politicians. Read the problem and respond to the questions following the dilemma.

There is disagreement among college instructors and professional staff, as well as among politicians, about students with learning disabilities being accepted to college and placed in regular classrooms. Some people, including some instructors, do not feel students with significant learning disabilities should be in regular colleges. They suggest,

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40 Journal entries that were coded for the study are marked with an asterisk.

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for example, that the students would be better served at institutions that have programs
dedicated to students with learning disabilities (e.g. Landmark College in Vermont).
Some question whether giving the students accommodations in a regular college
classroom is fair to other students. They claim it is both unfair and inconvenient to
teachers and classmates. Some people question whether accommodations are in the
students’ best interest because they fear the students will not learn to be independent
learners. Some feel it is unethical to accept these students into universities because they
believe the students are likely to fail and to disrupt teaching and learning.

Other people, including some instructors, feel students with significant learning
disabilities belong in regular colleges. They hold that participating in regular college
classes with accommodations improves the students’ opportunities to become
independent learners and prepares them for life in the real world. Some feel it is
unethical not to accept students with learning disabilities into the universities despite the
obstacles the students face.

A. What do you think about these two positions regarding students with learning
disabilities in college?
B. On what do you base your opinion?
C. Do you think it is possible to decide whether or not your opinion is correct?
D. How is it possible that professionals disagree about learning disabled students
attending college?
E. When people disagree about this issue, is one opinion right while the others are
wrong?
F. If yes, how do you know which opinion is correct? OR If no, is one opinion better
than the others? Why or why not?

* Week 3
1. Reflect on and describe your tutoring experiences to date. Please include your
observations about learning differences, cultural or gender differences.
2. What ethical questions, if any, do the topics we have discussed this month raise for
you?
3. How do you feel about being a tutor at this point?
4. What questions and/or concerns do you have?

* Week 4
1. Reflect on and respond to the articles and chapters you have read for last week and
this week. If possible, focus on group work, although not exclusively.
2. Select at least two strategies/techniques described in the readings that you plan to
apply in your tutoring and explain how you might implement the strategies.

* Week 5

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1. Reflect on and respond to the articles you read for today. What tutoring/teaching techniques or strategies appeal to you? Describe how you might apply them to your tutorials. If possible, focus on individual tutorials.

2. What questions or concerns about tutoring do the readings raise for you?

*Week 6*
1. Mid-term self-assessment. How do you feel about the way your tutoring experience is going? What aspects of the tutoring experience and class do you think are going well? Please explain why. What aspects of the tutoring and course do you think are not going well? Again, please explain.

2. Looking at your learning style inventories, your session reports or tutoring notes, what are your strengths as a learner and as a tutor? On what areas do you think you would benefit from more attention?

*Week 7*
Write your personal ethical code as a tutor. Following the code, write your reasons, i.e. the principles on which you are basing your code.

*Week 8*
1. What is your understanding of constructivism?

2. Using the handouts and the articles on student development, try to place yourself in the developmental scheme, first in general, as you live your life, and second, in the discipline in which you tutor. Explain your reasons.

3. Have you observed any of the student development profiles in your tutees? Please describe at least one.

*Week 9 (last coded journal due mid-November)*
Respond to the readings on critical thinking. (a) Assess yourself as a critical thinker. (b) What kinds of thinking are you seeing in your tutees? (c) What kinds of thinking are called for in the requirements for courses you are taking?

Week 10
Draw a diagram of the tutor's relationship with the course instructor, the tutee, and the task. Describe/explain how your tutorial behavior might be influenced by the instructor's approach and expectations.

Week 11
Respond to the readings. How can you link these readings to your tutoring practice? How can you link your beliefs about learning to your achievements in math and English?
Last 3 journal entries:

For your last 3 journal entries, your assignment is to re-read our feedback on all the entries you have written to date and answer the questions we raised and respond to our comments.

Week 12 – Respond to journal entries 1 – 4.
Week 13 – Respond to journal entries 5 – 8
Week 14 – Respond to journal entries 9 – 11.
Appendix F: Coding guide and Examples

Coding Guide: Four Categories Described by Level of Complexity

Category 1: Flexibility and adaptability

Rating of 0 = no awareness of need to be flexible or adapt. Focused on self, not tutee.

Rating 1 (low Level of complexity) Pre-reflective (RJI); dominated by personal interests. (DIT-2)
- S/he is a rigid and concrete thinker, indicated by her/his preference for doing things only one way. S/he may show the tutee only one way to approach the problem or task.
- S/he is unable to be flexible and adapt to differences among tutees’ needs, feelings, and preferred styles of learning, as indicated by her/his use of only one strategy or approach.
- S/he is likely to be very structured and overly directive; the tutorial is tutor-centered. S/he may take ownership of the tutee’s work.
- S/he sees and accepts only one point of view, as indicated by her/his insistence that there is a right answer; s/he may refer to a teacher’s authority.
- S/he follows the rules, and may have a procedural approach to the task.
- S/he may put her/his own interests before the tutee’s goal; might tend to blame the tutee for “not getting it”. S/he might give up and refer the tutee to someone else.
- S/he does not attempt to explain reasons for her/his answers.
- S/he may discourage or deflect questions that are not in line with his/her way of doing things.
- S/he may offer more help than is ethical or helpful to the tutee, thus encouraging dependency.

Rating 2 (moderately low) - transitional level
- The tutor has many characteristics of (1) low complexity, but s/he begins to show some characteristics of level 3.
- For example, s/he indicates awareness of more than 1 way to approach a problem or task, but shows a strong preference for one way.
- S/he recognizes the tutee’s preferred style is different from hers/his.
- S/he indicates that there is more than one point of view, but s/he has a strong preference for one.
- S/he may attempt to explain the reasons for his/her answers.
- S/he is more open to questions than a person is at level 1.
- S/he may indicate some concerns about offering too much help.

42 Examples appear after the list of categories and descriptive behaviors.
Category 1 Flexibility continued

Moderate level of complexity (Rating = 3): Quasi-reflective (RJI) and maintaining norms (DIT-2)

- Since s/he is aware of a variety of problem solving strategies, s/he may attempt to use more than one approach.
- S/he is aware of tutee’s feelings and might be able to flex and adapt according to the tutee’s feelings; might inquire about tutee’s preferences and/or feelings. S/he might make choices/decisions based on his/her relationship with the tutee or with the instructor.
- S/he still prefers structure and may be somewhat directive. The tutorial may alternate between being tutor-centered and being student-centered. S/he is likely to be more concerned with the tutee and less with her/himself. S/he is less likely to give too much help and encourage dependency.
- S/he entertains more than one point of view, and may be able to play the devil’s advocate or raise other possibilities.
- S/he observes the conventions of law/duty rather than adapting to particular situations. Might speak in terms of rules or policies
- S/he can provide evidence or explanations for answers.
- S/he encourages questions and offers to assist tutee with finding answers.
- S/he models or demonstrates various strategies and approaches.
- She may be too quick to evaluate the tutorial or make judgments about the tutee.

Rating 4 (moderately high) – Transitional level

- The tutor has many characteristics of level 3, but begins to show some characteristics of level 5.
- S/he uses more than one strategy or approach.
- S/he is aware of the tutee’s understanding or confusion and shows some ability to adapt to the tutee.
- S/he is more inclined to make choices/decisions based on principles than on his/her relationship with the tutee or teacher.
- S/he shows an awareness of how much help is appropriate and is likely to emphasize the student’s role in learning.
- S/he is able to put rules into a context and examine problems in context.
- S/he inquires about tutee’s feelings and learning preferences. Invites tutee to set the agenda for the tutorial. (Student-centered tutorial).
- While s/he is able to put the tutee’s interests ahead of his/hers, s/he keeps the tutee’s requests in perspective and maintains a balance.
Category 1 – Flexibility continued

Rating 5 (high level of complexity): Reflective (RJI) and Post-conventional (DIT-2)
- S/he is able to change her/his approach or strategy if s/he detects a lack of understanding or confusion in the tutee. S/he is able to “read and flex” and try several strategies that best match tutee’s level of knowledge and development. Might take a collaborative approach to setting goals for the tutorial.
- S/he tends to be non-directive, but s/he is able to move into a more directive mode if the tutee does not respond to the non-directive approach. The degree of directiveness is appropriate for the tutee’s developmental level. S/he promotes the tutee’s independence as a learner.
- S/he is able to adjust to tutee’s way of knowing and sees it as the way the student constructs meaning. S/he attempts to help the student construct his/her own understanding of the task/problem.
- S/he does not tolerate unethical practice (cheating, plagiarism) and can judge when s/he is allowing herself or being led to offer more assistance than is ethical or helpful.
- She describes the tutorial before evaluating it.

Category 2: Tolerance for uncertainty and ambiguity

0 = no awareness of ambiguity; does not see possibility for uncertainty.

Rating 1 (low level of complexity). Pre-reflective; dominated by personal interests
- Ignores tutee’s prior knowledge; may not know where to begin the tutorial.
- Exhibits low level of tolerance of uncertainty, indicated by his/her insistence there must be a correct answer or that an authority exists who does know the answer or at least that the answer is knowable at some point.
- Is uncomfortable NOT having the right answer; might rely on answer key if one is available or may deliberately give an incorrect answer in order to appear “right”.
- Offers explanations or answers that suggest s/he does not see how anyone can disagree with the right answer or his/her value system. Might judge the person who disagrees with her/him to be wrong.
- Might establish his/her authority over the tutee to control tutorial. Tutorial might become a monologue rather than a dialogue.
- Gives answers instead of asking questions.
- Is quick to point out every error.
- Might become easily frustrated by tutee’s lack of understanding.
- Tends to listen selectively or passively.
- Follows policies and procedures; might be unable to decide how to behave in situations where ethical choice is not clear.
- Concrete thinker resistant to studying theory.
- Lacks confidence and worries what tutees might think of her/him. May sound pessimistic.
- Ethical choices tend to be guided by benefits to her/himself.

Rating 2 (moderately low complexity) Transitional level
- Has many characteristics of level 1, but shows signs of moving toward moderate level.
- May try to determine what tutee already knows.
- May recognize more than one answer exists but insists that one answer is right.
- Can admit s/he does not know the “right” answer.
- Acknowledges different value systems, but is not tolerant of them.
- Attempts to engage students in dialogue and learning.
- Gives answers to questions but also asks questions.
- Is more tolerant of small errors; may wait until the problem is solved or the topic has been explored before pointing out errors.
- Listens better than does a person at level 1.

Rating 3 (moderate level of complexity) Quasi-reflective; maintaining norms.
- Attempts to determine tutee’s prior knowledge by asking questions or inviting tutee to explain his/her understanding of the task/problem.
- Recognizes that knowledge is uncertain, and this might be evident in his/her feedback to tutee. S/he sees the possibility of more than one answer or one way of doing things.
- Offers reasons and evidence for his/her explanation.
- Demonstrates sensitivity to tutee’s feelings. Might be influenced by his/her feelings for the tutee or instructor, and this might be evident in the suggestions s/he makes to the tutee.
- Abides by rules in problem solving, conventions in writing; tends to be prescriptive/directive, although less so than tutor at low level.
- Models questions a tutee might ask him/herself.
- Works at creating dialogue.
- Might overlook some errors and later ask why the tutee did something.
- May be somewhat frustrated by tutee’s lack of understanding or assume full responsibility for tutee’s lack of understanding.
- Attempts to practice active listening and clarify ideas.
- S/he is developing confidence as a tutor; may be cautiously optimistic.
- Is more open to studying theory and making connections to experience.

Rating 4 (moderately high complexity) Transitional level
- Has many characteristics of level 3, but shows signs of moving toward higher level of complexity.
- Asks tutee to provide reasons and evidence.
• May be less likely to be influenced by feelings for tutee but remains interested in student’s understanding and well-being.
• Practices active listening and seeks to clarify ideas.
• Able to connect theory to experience.

Rating 5 (high level of complexity) Reflective; post-conventional
• Determines tutee’s prior knowledge before proceeding.
• Is comfortable with uncertainty and ambiguity (as suggested by feedback to tutee or comments in journal or transcript). Might explain there’s no one way to get the answer or to write the paper.
• Encourages tutee to examine his/her reasons and evidence and clarify ideas.
• Uses reasons and evidence in his/her explanations and feedback. Explanations are particular to the context and allow for more than one possibility.
• Appreciates multiple perspectives which is evident in the way s/he models more than one way of looking at a task/problem.
• Models ways of looking for alternative answers and evidence.
• Asks probing questions to develop the tutee’s understanding.
• Encourages students to persist at a task even when answers/solutions are not immediately apparent.
• Is likely to overlook errors in process until tutee’s thinking becomes clearer.
• Encourages tutee to find new ways of looking at things.
• Tends to answer questions without giving direct/concrete answers; puts his/her answers into a particular context.
• Is confident as a tutor and generally optimistic.
• Practices reflective listening.
• Engages in abstract thinking; responds to theory and connects it to experience.

Category 3: Ability to detect conflict, define problem, & propose solutions
0 = totally unaware any ethical conflict or other problem exists. (e.g. may do the tutee’s work for her/him)

Rating 1 (low level of complexity) Pre-reflective; personal interests dominate.
• Does not recognize differences in learning styles or cultural differences.
• May be oblivious to conflict between his/her approach (where s/he chooses to begin the tutorial) and the tutee’s readiness to begin there;
• Does not bother to determine tutee’s prior knowledge.
• Can not diagnose the problem to be addressed. Takes the tutee’s word for what is the problem (or accepts teacher’s word in case of a referral).
• Might not see that tutee’s understanding of task is different from what is the book or assignment sheet/syllabus.
• Might be overwhelmed by the tutee’s lack of understanding and have no idea where to begin; can’t define the problem.
• Might be oblivious to conflict between tutee’s goals for the tutorial and their own.

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• Might be oblivious to conflict between tutee’s values and their own.
• Might not be able to read tutee’s attitude or may attribute an attitude to the tutee that is incorrect. Might fail to take responsibility for role in the tutorial and blame the student, or, conversely, might assume all the responsibility for the tutorial.
• Avoids conflict by not seeing it. (e.g. may not recognize cheating or plagiarism.)
• Might resort to teacher or tutee bashing.
• Fails to see significance in the assigned readings, teachers’ comments, events.
• Might reveal confidential information.
• Does not use the available resources.

Category 3 – Ability to detect problems continued
Rating 2 (moderately low) Transitional level
• Has many characteristics of level 1 but shows signs of moving toward level 3.
• Recognizes differences between self and tutee re: learning styles or cultural styles.
• Attempts through questioning to determine prior knowledge.
• Recognizes gap in his/her starting point and tutee’s understanding, but cannot correct the problem.
• Is able to diagnose surface problems (e.g. tutee’s lack of knowledge re: fractions)
• Can detect difference between tutee’s understanding of the task or problem and what is written (in book or on assignment sheet).
• Finds a reasonable starting point for the tutorial.
• Is aware of difference between tutee’s goals and his/hers, but does not know how to correct the problem.
• Sees conflict but does not know what to do and may ignore the problem.

Rating 3 (moderate level of complexity) Quasi-reflective; maintaining norms
Recognizes conflict between his/her approach or his/her starting point and the tutee’s readiness due to level of understanding or learning style.
• Attempts to determine the students’ prior knowledge by asking questions or getting the tutee to tell/show his understanding.
• Able to determine the immediate problem (e.g. tutee’s understanding of the task) and does not necessarily take tutee or instructor’s word for it.
• Asks for clarification and elaboration.
• Sets a reasonable goal for the tutorial that serves both tutee and tutor.
• Is sensitive to tutee’s attitude, motivation, and values (as indicated by feedback and questions).
• Helps the tutee identify what resources are available.
• Recognizes shared responsibility for successful or unsuccessful tutorial.
• Wrestles with how to handle confidential information when there are conflicting interests.
Category 3 – Ability to detect problems continued

Rating 4 (moderately high) Transitional level
- Has many characteristics of level 3 but shows signs of moving toward level 5.
- Able to see and determine students’ prior knowledge by asking questions or by getting him/her to tell/show his understanding.
- Able to determine immediate problem and can take steps to resolve the problem.
- Able to help tutee understand the learning problem (especially if tutor’s perception of the problem differs from tutee’s perception).
- Negotiates goal for tutorial with tutee.

Rating 5 (high level of complexity) Reflective and post-conventional
- Recognizes conflict (reads student) and adapts approach to student’s readiness or level of understanding or learning style.
- Is able to determine immediate problem and probe for causes (e.g. poor reading comprehension). Able to resolve most problems.
- Recognizes obstacles (e.g. distractibility) and names them. May propose one or more solutions.
- Negotiates appropriate goals based on his/her understanding of the problem.
- Is sensitive to tutee’s attention level, attitude, motivation, level of development, understanding of task, learning styles or cultural differences.
- Takes collaborative approach to problem solving.
- Maintains confidentiality except where s/he is bound to report an incident.
- Uses resources well and refers tutees to resources.
- Encourages tutee to be sensitive and accepting of feedback.
- Delivers appropriate feedback to tutee.
- Helps the tutee name the problem and to take steps to resolve it.

Category 4: Disposition to critical thinking and reflective judgment

0 = not at all disposed to critical thinking. Unaware of what is critical thinking.

Rating 1 (low level of complexity) Pre-reflective; personal issues dominate.
- Holds rigid views and acknowledges only one point of view or one way to do things.
- Believes authorities hold the right answer.
- Exhibits concrete thinking and views knowledge as concrete; believes all things are knowable eventually.
- Asks lower level questions (comprehension) rather than questions requiring interpretation or analysis.
- Ignores learning, cultural, or value differences.
- Makes no attempt to help tutee become more aware of her/his own thinking.
- Does not understand how reasonable people can disagree about some issues.
• Does not provide evidence, but asserts beliefs and opinions.
• Does not encourage tutee to develop thought, but looks only for the "right" answer.
• Might judge others negatively for disagreeing with him/her.
• Might be over-confident about his/her knowledge and might personalize criticism; on the other hand, may lack confidence in his/her knowledge and personalize criticism.
• Is not forthcoming about her/his feelings, motives, purposes.

Rating 2 (moderately low) Transitional level
• Has many characteristics of level one, but shows signs of moving toward level 3.
• Acknowledges more than one point of view but holds firmly to one.
• Believes authorities will ultimately have the answers. Knowledge is certain.
• Asks some questions requiring interpretation as well as knowledge and understanding.
• Acknowledges some learning differences and cultural values.
• Understands that people can disagree, but holds that one person must be right and the other wrong.
• May cite general reasons for beliefs and opinions.
• Is less likely to judge negatively those who disagree with him/her.

Rating 3 (moderate level of complexity) Quasi-reflective; maintaining norms
• Acknowledges there is more than one way to do things or that more than one view may be right.
• Can engage in abstract thinking about issues, but still provide concrete examples.
• Asks both lower and higher level questions to check understanding, interpretation, and analysis. Encourages students to think more deeply about issues/problems. Encourages tutee to be clear and accurate.
• Acknowledges learning or cultural or value differences.
• Offers reasons and evidence to support assertions. May give only one side, however, or use rules s/he has constructed for the task (based on his/her understanding of the assignment).
• Asks questions requiring some analysis and interpretation as well as knowledge and understanding.
• Encourages tutee to become aware of her/his own thinking.
• Can recognize disagreement without judging the other person negatively.
• Able to handle constructive criticism without taking it personally.
• May be tempted to take ownership of the problem or paper.
• Might have difficulty turning down friends’ requests for help even when help is inappropriate (e.g. giving help on quiz).
• Discusses feelings, motives, purposes.
Category 4 – disposition to critical thinking continued

Rating 4 (moderately high) Transitional level
- Has many characteristics of level 3, but shows signs of moving toward level 5.
- Asks higher level questions requiring analysis and synthesis, but questions are not always appropriate to tutee’s developmental level.
- Can provide principles, reasons, evidence to support thinking and actions.
- Models how to find and compare evidence.

Rating 5 (high level of complexity) Reflective, post-conventional
- Acknowledges multiple ways of doing or viewing things.
- Engages in abstract thinking.
- Engages tutee in setting goals for the tutorial and mutual understanding of the task.
- Helps tutee become aware of her or his own thinking.
- Can cite principles that guide his or her action or give reasons for behaviors/beliefs.
- Encourages tutee to construct his or her own meaning of the task/problem.
- Engages student in finding and comparing evidence. Encourages clarity and accuracy in thinking.
- Asks higher level questions requiring analysis and synthesis. Can adjust questions to tutee’s level of development and learning. Assists tutee with moving beyond memorizing or following rules to understanding of the task or concept.
- Models ways of constructing an argument that acknowledge differences of opinion.
- Encourages tutee to find new ways of viewing things.
- Acknowledges and expresses feelings, motives, purposes.
Examples of Ratings on Journal Responses

This part of Appendix F contains examples of passages coded at each level of complexity that occurred in the journals and in all categories.

Category 1: Flexibility and Adaptability

Passage rated 1 in category 1:

A lot of the time, I will ask her why she's doing something, but she hardly ever knows, or has all of her rules jumbled up so that we have to go through and untangle them each time so that she can decipher what she really needs to do.

This passage was rated at level 1 because it suggests that the tutor usually takes the same approach in each tutorial and is unable to adapt to the tutee's needs or feelings.

Passage rated 2

She makes the same mistakes over and over, no matter how many times I correct her or how many different ways I explain to her why she needs to perform (or not perform) an operation. ....So we worked together for two solid hours... I didn't feel comfortable just ending the session since I did feel that we were making some progress.

This passage was rated at level 2, a transitional level, because the participant exhibits some of the characteristics of low complexity, but also shows some movement toward a moderate level.

Passage rated 3 (moderately complex)

Since I am not good at working things out this way, I find it hard to assess how the student is working through the problem. This presents a challenge. Although it is tempting to say "That's not the right way" or "Do it like this instead," I realize that I have to allow the students to use methods that are comfortable for them. This can be difficult, but overall I think it is more effective than re-teaching the student the information in a new way.

In this passage the tutor demonstrates her awareness of differences in learning styles and various ways of doing a problem. She appears willing to at least allow her tutees to use alternative ways of solving the problem, if she herself is unable to do the problem that way.
Passage rated 4 in category 1, flexibility

It is very important to give positive feedback, not as empty flattery but as genuine encouragement. Just the fact that the tutee is coming for help deserves praise; the progress they make is theirs, not ours, and empowerment comes through recognition of this fact. Our goal is to help our tutees develop a love for learning that will continue for a lifetime.

A score of 4 indicates a transitional level between a moderate level of complexity and a high level. In the above passage, a writing tutor recognizes the need to promote the tutee’s growth as an independent learner and does so by helping the tutee build confidence in her writing skills.

Category 2: Tolerance of uncertainty.

Passage rated 1: Responding to an article in which expert tutors were described as being able to ignore some errors, one participant wrote:

I feel as though I really can’t let any mistake go, because looking back at the problem, she always thinks she’s done it right, even if she takes out a new paper and starts over again.

The tutor feels the need to control the tutorial and to intervene often in the tutee’s problem-solving process. She lacks confidence in herself and in the tutee.

Passage rated 2:

I have found myself without the answers to questions, which was actually my worst fear. I tried to work it through with the tutee, and had to resort to a manual...

This passage indicates a lack of confidence and reluctance to engage in abstract thinking.

Raters also assigned a score of 2 to the following passage reacting to the reading and journal assignments:

In the developmental scheme of things it is really hard to define myself and it is one of the reasons that these journals give me so much trouble. Too much thinking about it gives me anxiety.

Different prompts tapped into different kinds of uncertainty. In the above entry, the participant is responding to a prompt asking him to comment on the theory and to
apply it to himself and his tutees. Resistance to considering and applying the theories was viewed as a lack of tolerance of uncertainty.

Passage rated 3 based on increased confidence:

At this point I am pleased with my progress as a tutor. I do know that I have a long way to go and I may be slower at picking tutoring up than others. It is definitely a positive experience for me that is very healthy.

Passage rated 4, also based on a growth in confidence:

I will give them my full attention and will let them see me for who I am, faults and all, [sic] that way they can see what I do to figure out a problem I can't solve.

This statement was taken from a participant's ethical code.

Category 3 - Detecting the conflict or problem.

This category included the following behaviors or attitudes: recognition of cultural or learning style differences between the tutor and tutee, detection and diagnosis of problems for the tutee or themselves, conflict between a tutee's understanding of the task and the task as defined by the teacher, suggestions for solutions to the problem, and appropriate feedback to the tutee.

Passage rated level 2:

My homework and punctuality are not going well at all. This has to do with my time management and how my personal life always seems to overload my head into paralysis.

The participant identifies his problem with time management, but he does not seem ready or able to correct the problem.

Passage rated 3:

During her conference with Professor X, she received some constructive criticism and was devastated. She admits to getting so anxious around her papers that she loses all focus. We worked this week on writing strategies, including taping herself as she tells a story and then putting it down on paper or typing into a darkened monitor.
The tutor is sensitive to the tutee’s attitude and motivation. Here the tutor/participant is able not only to detect the problem, but being sensitive to the writer’s anxiety, she also takes steps to address the student’s case of writer’s block.

One participant who received a rating of 4 (moderately high complexity) applied developmental theory to her diagnosis of the problem.

One particular student that I have been working with appears to be operating at the multiplicity/subjective level of developmental learning. Although this student realizes that there are areas in which there are no definitive answers, she does not feel that it is necessary to justify her conclusions. In many of her essay questions on the tests, she loses a lot of points. Although she answers the problems correctly, she does not take the next step in justifying her response. In the case of this student, I have been working with her to probe why she answers the question in a certain way.

Here the tutor/participant offers reasons and evidence to support her assertions.

She asks the tutee for clarification, and helps the tutee to name the problem and take steps to resolve it.

Category 4: Disposition to critical thinking and reflective judgment. Scores in this category ranged from 2 to 4. This category included self-reflection, openness to different views, abstract thinking, evidence to support assertions or judgments, self-awareness and the ability to handle criticism, as well as evidence of promoting the tutee’s critical thinking.

The following example was given a rating of 2:

As a writer I am extremely meticulous; in other words I am a perfectionist. I tend to have a great deal of trouble coming up with an initial idea, since I never feel that any of my ideas are good enough.... Each sentence that I write has to be carefully crafted from the get-go, making it a challenge to complete any writing assignment in a timely fashion.

While this passage illustrates self-reflection, it does not show a willingness on the participant’s part to question herself.
The example of a level 3 complexity was written in response to a prompt asking participants to explain their understanding of constructivism. At a level 3, the individual is able to engage in abstract thinking about issues and provide concrete examples.

My current understanding of constructivism is probably weak and full of holes, but here it goes. I believe I understand the definition given in the text—“knowledge is actively constructed...not passively received from the environment.” This makes sense to me as I have always found I learn things better if I can manipulate or work with the ideas rather than sit and listen. Similarly I do not memorize the rules of logic by simply seeing them on a board, and I did not come to this understanding of constructivism by placing the text on my head and absorbing the material physically—I had to think about it.

At a level 4, a moderately high level of complexity, an individual exhibits many characteristics of level 3, but shows signs of moving toward level 5. The following level 4 example is a passage written in response to a prompt about higher order thinking; unlike the level 3, the participant acknowledges multiple factors that influence her decision making. She appears to be more disposed to examining her own thinking.

In my personal life, I understand the complexities and diverse perspectives that exist in all areas of life. In making decisions I combine factual, rational, and academic considerations while maintaining the personal and experiential components that influence the choices that I make. This approach contends that all areas of life are open to interpretation and that nothing can be “viewed as black or white.”

Her response falls short of a rating of 5 because she does not cite principles that guide her decision making or follow up with examples.
Appendix G: Observation Checklist of Tutoring Behaviors

Rate the behaviors observed during the tutorial on a scale of 1 – 5. (1 = behavior never occurred; 5 = behavior occurred often.)

- Accepting tutee’s attitudes/feelings
- Opening the tutorial & establishing rapport
- Assessing prior knowledge
- Setting a goal for the tutorial
- Asking questions
- Types of questions asked (keep a tally)
  - Open
  - Closed
  - Clarifying
  - Probing
  - Leading
- Active listening/Reflective feedback
- Positive reinforcement
- Providing corrective feedback
- Giving lecture or explanations
- Giving cues or directions
- Criticizing

To what modalities (visual, auditory, kinesthetic/tactile) did the tutoring strategies appeal? (Keep a tally).
- Visual
- Auditory
- Kinesthetic

Was the tutee prepared for the tutorial?

How was the rapport between tutor and tutee?

Was the level of directiveness appropriate for the tutorial?

List specific tutoring strategies that the tutor used.
Appendix H: Interview Protocols

Guide for Interview 1
1. If you were to draw a road map or some other visual representation of your past educational experiences, what would it look like? For example, what experiences are memorable from your years in elementary school?
2. How would you describe your favorite teacher?
3. What are the qualities you value in a college teacher?
4. How do you describe yourself as a learner (e.g. modality preferences, social or independent learner?) What do you consider your strengths as a learner?
5. How do you define teaching? Learning?
6. How did you come to be interested in being a tutor?
7. What do you expect to do as a tutor?
8. What do you hope to get out of being a tutor?
9. Is there anything else you would like me to know about your previous experiences or how you’re feeling about becoming a tutor?

Guide for Interview 2
1. How satisfying has your experience as a tutor been up to this point?
2. Describe a tutorial experience where you felt the session went well.
3. Describe a tutorial experience where you felt some discomfort.
4. During what kinds of tutor development seminar activities are you most comfortable?
5. What kinds of activities in tutor development seminars make you uncomfortable?
6. In what ways is your tutoring experience meeting your expectations? In what ways is it different from your expectations?
7. What changes, if any, have you noticed in yourself since you started tutoring?
8. What do you see as being the major challenges of tutoring?

Guide for Interview 3
1. Given the past four months’ experience as a tutor, how do you now understand tutoring?
2. In September, when asked to define teaching, you said........ How would you define it now? How are teaching and tutoring similar or different?
3. In September you defined learning as...........How would you define it now?
4. What metaphor might you use for being a tutor? The metaphor you wrote in September for a tutor was ........ How are these images similar/different?
5. What have been the highlights of your tutoring experience? What have been the low points?
6. What would you have liked to do differently as a tutor?
7. What, if any, changes have you noticed in yourself?
8. What are your plans for next semester/next year?
9. What additional roles as a tutor (if any) would you like to take on?
APPENDIX I

Letter from Laura Jensen

Laura L. Jensen, Ph.D.
4900 Cherry Creek South Drive, Suite #5
Denver, CO 80246  303-777-4627

August 27, 2003

Ms. Margaret Pobywajlo
56 Back River Road
Bedford, NH 03110-6614

Dear Ms. Pobywajlo,

When you first explained to me your decision to administer the Reflective Judgment Interview (RJI) in your study, you indicated that you would like to discuss the pre/post interview results in one-on-one sessions with your subjects. It is important to note that the RJI has not been standardized for use with individuals. Results of studies with this measure have been group results. Hence, the validity and the reliability of the RJI cannot be verified when used as an individual measure of reflective judgment. Therefore, I strongly advise against your using the RJI as a measure of an individual's reflective judgment, especially when time between the pre/post measurements was less than one year. Even with large group results, pre/post measures of reflective judgment are rarely detected in such a short time. To this end, I ask that you include this letter in your report of final results.

I appreciate your willingness to discuss this particular part of your study. This in no way affects your using the results of your pre/post interviews in calculating group results, which will contribute to the literature on reflective judgment.

I look forward to the results of your study. Thank you.

Sincerely,

Laura L. Jensen, Ph.D.

Cc.  Patricia M. King, Ph.D.
     Karen S. Kitchener, Ph.D.
     Phillip K. Wood, Ph.D.

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Table J1: Participants' Average Scores in Each Category for each Journal Entry

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| Partic 9   | flexibility | - | - | 3 | 3 | 4 | - | - |
| tolerance | 2          | 2.75 | 3 | 3 | 4 | 3 | - |
| Detect    | -          | 1.75 | 3 | 2.75 | - | - | - |
| CT/RJ     | -          | 2.75 | 3 | 2.5 | - | 3 | 4 |

* A (-) indicates no passage was scored for that category in that journal entry.
Appendix K: Tables of Individual Performance Ratings

Table K.1: Individual Performance Ratings on Non-directive Behaviors

<table>
<thead>
<tr>
<th>Category</th>
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<tbody>
<tr>
<td>Acceptance of tutee attitudes</td>
<td>Pre 5 Post 5</td>
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<td>Pre 3 Post 2</td>
<td>Pre 3 Post 2</td>
<td>Pre 2 Post 5</td>
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<td>Assess prior knowledge</td>
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<td>Pre 4.5 Post 5</td>
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<td>Negotiate goal</td>
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<td>Pre 5 Post 4.5</td>
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<td>Pre 3 Post 2</td>
<td>Pre 3.5 Post 2</td>
<td>Pre 4 Post 2</td>
<td>Pre 3 Post 5</td>
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<td>Positive Reinforcement</td>
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<td>Pre 1 Post 1</td>
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<td>Corrective Feedback</td>
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Table K2: Individual Performance Ratings on Multi-Modal Strategies

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<tr>
<td>Visual</td>
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<td>Pre 5 Post 5</td>
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<td>Kinesthetic</td>
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Table K3: *Individual Performance Ratings on Directive Behaviors*

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<th>#9</th>
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<tbody>
<tr>
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<td>Pre 1 Post 2</td>
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<td><strong>Cues &amp; direction</strong></td>
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<td>Pre 4 Post 2</td>
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### Appendix L: Journal Topics and Frequency (Grouped by Category)

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<th>Topics grouped by category</th>
<th>Participant #</th>
<th>Total frequency</th>
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<tr>
<td><strong>FEELINGS ABOUT TUTORING EXPERIENCE</strong></td>
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<tr>
<td>Tutoring as an “honor”</td>
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<tr>
<td>Tutoring as “opportunity for growth”</td>
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<tr>
<td>Positive feelings about tutoring: “excited about,” “satisfying,” “feel great,” “happy,” “excellent experience,” “doing well,” “pleased with my progress,” “enjoy”</td>
<td>2, 3, 5, 6, 7, 8, 9</td>
<td>27</td>
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<tr>
<td>Negative feelings about tutoring: “frustrated,” “hopeless,” “failure,” “disappointed”</td>
<td>3, 5, 6, 8</td>
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<td>Mixed feelings about tutoring: “some fulfilling, great experiences, some not so great”</td>
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<tr>
<td>Feeling “hopeless” about tutees</td>
<td>3, 8</td>
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<tr>
<td>Tutor feels s/he’s “not helpful”; a “failure”</td>
<td>3, 4, 9</td>
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<tr>
<td>Tutoring as a “positive” experience</td>
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<tr>
<td>“Disappointed” in lack of individual tutees</td>
<td>5, 8</td>
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<td><strong>CHALLENGE &amp; SUPPORT</strong></td>
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<tr>
<td>Challenge: tutoring “more complicated than expected”</td>
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<td>Worked with no remedial or LD students</td>
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<tr>
<td>LC staff support</td>
<td>1, 3, 4, 5, 6, 9</td>
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<td>Support from CL teacher</td>
<td>2, 6, 9</td>
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<td>Sees a problem but does know what to do</td>
<td>3, 8</td>
<td>4</td>
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<tr>
<td>Struggle to be non-directive &amp; concern that tutee leaves tutorial feeling s/he learned nothing</td>
<td>1, 2, 3, 4, 6, 7, 9</td>
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<td>Challenge: “not to feel responsible for tutee’s failure”</td>
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<td>Challenge: “overwhelmed by students’ errors”</td>
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<td>Challenge: “to overcome lack of confidence &amp; inexperience”</td>
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<td>Challenge: “tutoring a person with different learning style”</td>
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<td>Challenge: “Find new ways to explain &amp; accept different levels of motivation”</td>
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<tr>
<td>Challenge: “to meet tutees on their level”</td>
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<td><strong>NEED FOR COMFORT/CONFIDENCE</strong></td>
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<td>Importance of tutor’s confidence</td>
<td>1, 2, 4, 5, 6, 7, 8, 9</td>
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<td>Tutor’s need to be “comfortable”</td>
<td>1, 2, 3, 4, 5, 6, 8, 9</td>
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<td>Need to know the “right” answers</td>
<td>2, 3, 8</td>
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<td>Need for “comfort” with information &amp; situation to engage in Higher Order Thinking</td>
<td>2, 6</td>
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<tr>
<td>Need to know “proper way” to tutor</td>
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<table>
<thead>
<tr>
<th>APPLICATION OF READINGS</th>
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<tr>
<td>Tutor applies theories from readings &amp; class discussion</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9</td>
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<tr>
<td>Ethics</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9</td>
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<tr>
<td>Tutor relates readings to him/herself personally</td>
<td>1, 4, 5, 7, 8, 9</td>
</tr>
<tr>
<td>Perceives self as a critical thinker</td>
<td>1, 2, 3, 4, 5, 6, 8, 9</td>
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<tr>
<td>Tutor relates readings to his/her practice</td>
<td>1, 2, 3, 4, 6, 7, 8, 9</td>
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<tr>
<td>Tutor recognized student’s developmental level</td>
<td>1, 6</td>
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<tr>
<td>Tutor encourages multiple perspectives</td>
<td>2, 5, 7</td>
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<tr>
<td>Tutor describes problem &amp; steps s/he took</td>
<td>1, 2, 4, 6</td>
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<tr>
<td>Sees relevance of readings</td>
<td>1, 2, 3, 4, 6, 9</td>
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<td>Complaint about readings</td>
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<tr>
<td>Concern with creating “dependency”</td>
<td>1, 3, 6</td>
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<tr>
<td>Need to “be flexible”, “accommodate differences”</td>
<td>1, 2, 3, 4, 5, 6, 7, 8</td>
</tr>
<tr>
<td>Tuttee as center of tutorial</td>
<td>1, 2, 3, 4, 6, 8</td>
</tr>
<tr>
<td>Concern for tuttee’s feelings, anxiety, comfort</td>
<td>1, 2, 4, 5, 6, 7, 8, 9</td>
</tr>
<tr>
<td>Tutor’s goal (“to become unnecessary”, “empower tuttee”, “make a difference”, “teach tuttee how to learn”)</td>
<td>1, 4, 6, 7, 8</td>
</tr>
<tr>
<td>“Empathizes” with students</td>
<td>2, 4, 8</td>
</tr>
<tr>
<td>Tuttees’ need for safe &amp; “comfortable” environment</td>
<td>2, 5, 9</td>
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<tr>
<td>Need to instill confidence in tutee</td>
<td>3, 7</td>
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<tr>
<td>“I don’t care attitude” masks how much she cares</td>
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<tr>
<td>Tuttees’ lack of interest &amp; motivation</td>
<td>5, 6, 8</td>
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<tr>
<td>Encourage tutee to “make new connections” &amp; “figure things out for themselves”</td>
<td>6, 9</td>
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<tr>
<td>“Encourage self-motivation”</td>
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<table>
<thead>
<tr>
<th>PERSONAL; CONCERN FOR SELF</th>
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<td>Tutor’s motivation</td>
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<tr>
<td>Dislike of group work</td>
<td>1, 3, 6</td>
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<tr>
<td>Need for tutor to “gain control” of an assignment</td>
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</table>

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| Has “command” over tutoring environment but “not over personal life” | 9 | 1 |
| “Reluctant to ask for help” | 3, 6 | 2 |
| Tutor questions his/her own actions | 4, 8 | 2 |
| Personal issues interfere with his/her tutoring | 5, 8 | 3 |
| Concerned with personal life, own time management & study habits | 8, 9 | 11 |
| Tutor cannot identify his own strengths | 8 | 1 |
| Sees himself as “chaotic” person, his own worst critic | 8 | 1 |

**RELATIONSHIP WITH TUTEE**

| Respect for and trust in tutee to do work | 1, 4, 5, 6 | 5 |
| Tutoring as a reciprocal process | 1, 6, 8 | 3 |
| “I get as much out of tutoring as they do” | 1, 6, 8 | 3 |
| “Honor the tutor/tutee relationship” | 1, 9 | 2 |
| Fears that “tutees might manipulate” her | 9 | 1 |
| “No one was forced to” see her | 1 | 1 |
| “No need to be tutee’s friend” | 3 | 1 |
| Tutor’s role “to make suggestions & boost confidence” | 4, 5, 9 | 4 |
| Relationship with & rapport “built on trust” | 1, 4, 5, 6, 9 | 12 |

7 categories (66 topics included from original 75) 330 codings
### Appendix M: Table M1: Themes and Examples Drawn from Journals and Interviews

<table>
<thead>
<tr>
<th>Themes</th>
<th>Definition</th>
<th>Evidence: Scores or examples of quotations from journals/interviews</th>
</tr>
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<tr>
<td>Tutor’s level of development at outset</td>
<td>Developmental level at the outset was determined by scores on the PCM and the DIT-2. The RJI was administered at mid-semester, so it was not included here.</td>
<td>PCM is a measure of conceptual level. High conceptual level = 2.2 – 3.0; Moderate = 1.8 – 2.19; Low = 0 – 1.79. DIT-2 is a measure of ethical reasoning. High N-2 score = 50’s and over. Moderate = 40’s; Low = &lt; 40. RJI is a measure of one kind of critical thinking, reflective judgment. High = 6 &amp; 7; Moderate = 3.6 - 5; Low = &lt; 3.6</td>
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<td>Characteristics of different developmental levels were drawn from the literature, particularly Hunt et al., (1978), Kitchener &amp; King (1994), and Rest et al (1994, 1998).</td>
<td>Characteristics of individuals’ thinking at different levels are detailed in Tables 2.1, 2.2, 2.3, 2.4.</td>
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<tr>
<td>Focus of coded journals on 4 characteristics: flexibility, tolerance of uncertainty, disposition to critical thinking &amp; reflective judgment, and ability to detect and solve problems.</td>
<td>Literature suggests presence and level of these characteristics varies with developmental level. See Appendix F.</td>
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<td>In addition, the literature describes differences in individuals’ abilities to manage stress &amp; to empathize, sensitivity to others’ feelings, openness to new experiences, &amp; phases of concern. At higher levels of development, individuals are more open to new experiences and ideas.</td>
<td>See Hunt et al. (1978); Kegan (1982, 1994); Rest et al (1994, 1999b), fuller, 1969, as cited by Reiman &amp; Thies-Sprinthall, 1998. Oja (1980) sees flexibility as openness to changing behaviors. Example of high level of openness: “To me, it (tutoring) is just another experience in my life that’s broadening my life. ...It’s another interesting road to go on.” (Participant 1 I-1). Example of low level of flexibility: “It [coaching the student to rework problems] would take too long, but I think it would be futile.” (Participant 3, I-2 responding to supervisor’s suggestion).</td>
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<td>Hunt describes one characteristic of development in terms of the individual’s acceptance of authority or preference for structure and rules</td>
<td>Need for structure: “I don’t have any structure. ..... I came to be a tutor because I wanted structure. I wanted like a set schedule. ..... I was hoping that being a tutor would help me gain structure” (Participant 8, I-1). This is an example of moderately low level of development.</td>
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<tr>
<td>Quality of the Tutoring experience</td>
<td>Includes types and frequency of tutorials, number of tutees, outcomes for tutees, tutor’s relationships with tutees, and the tutor’s feelings about the tutoring experience.</td>
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<td>Types of tutorials were individual, class-link contacts, study groups, or drop-in tutoring.</td>
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<td>Outcomes refer to tutees’ grades on papers, quizzes, tests. Tutors’ relationships were inferred from descriptions of tutees and where tutor placed his/her own interests first or the tutee’s interests.</td>
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<td>Tutee-centered. Sensitive to tutee’s needs.</td>
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<td>“What [student] really needed was someone to say he’s doing a good job.... Not empty flattery..., but helping someone get their thoughts out and onto paper” (Partic 1, I-1). This is an example of being tutee-centered, rather than being mostly centered on the tutor’s own needs.</td>
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<td>Affective response. The tutor’s feelings about his or her experiences in tutorials.</td>
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<td>“Satisfying” (Participant 1, I-1). “I enjoy being a tutor, but it’s a lot of worrying about how am I affecting this person” (Participant 8, I-1). “He never asks questions. He just sits there.....Then so I’m just sitting there waiting for somebody to ask me something and nobody wants to do anything” (Participant 8, I-1 describing his study group). “I myself was very uncomfortable, frustrated” (Participant 8, I-2). “I feel really good about it [tutoring]. I’m enjoying it” (Participant 6, I-1). “I really like class-linking. I thought that was the key really for me this year” (Participant 6, I-3).</td>
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<td>Relationship with tutee.</td>
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<td>“I try to be like a buddy instead of a teacher. I don’t like thinking of myself as a teacher” (Participant 8, I-3). “Ideally, I’d love to have a relationship with the class I link with and have the kids come to me on</td>
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<td>Outcomes for tutees</td>
<td>“His quizzes and tests are kind of disappointing. I’m getting stuck on why does he struggle...” (Participant 8, I-3).</td>
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<tr>
<td>Engagement in Tutoring Experience.</td>
<td>Engagement was measured by attendance in class, commitment to meeting his/her tutoring obligations, completion of assignments, and written or verbal responses to the class.</td>
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<td>“I don’t like it when I have to write a paper. Like that is the worst thing for me, is writing a paper. .... I have very big writer’s block and personal writing deficiency” (Participant 8, I-1). This is an example of lack of engagement in the class.</td>
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<td>“The Tutor Development class is very instructive. I like the fact that everybody shares their experiences and I have input into the class. I’ve been able to apply a lot of what we’ve studied” (Participant 1, I-3). This example attests to her engagement in the class.</td>
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<td>Developmental Condition of T/LF: Balance of experience with reflection</td>
<td>Experience measured by counting number of hours participant tutored. Amount of reflection measured in 3 ways: (1) by counting the number of paragraphs the participant wrote in the journal; (2) by counting the number of times the tutor’s journal was coded for critical think &amp; reflective judgment;</td>
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<td>“As I’ve been meeting with [my supervisor], I’ve been able to recognize myself more in my tutees. There are times when I just don’t get it and I know I’m sometimes just as childish as they are, and I seem to be unable to stop myself.” (Participant 3, Journal 14). In this reflection she shows empathy &amp; insight into her own behaviors.</td>
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<td>“With younger students I struggle a little bit with the balance of direction versus questioning them because sometimes they don’t answer the questions to lead themselves to the next step. They need more direction. .... I’m trying to figure out how to scale back on the direction with the younger kids. ... I don’t want them leaving here thinking, ‘She didn’t do anything for me.’ I want them to feel like we accomplished something, but I don’t want to be...”</td>
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(3) by evaluating the content of the journal entry for depth of reflection and elaboration.

| Balance of support and challenge. | Support defined as verbal (oral or written) encouragement from supervisors, classlink instructors, and peers; Support from supervisors also included advice, counseling, strategies, additional practice, modeling, and demonstrating. Support could be solicited by the tutor or unsolicited. Some tutors found support in the readings as well as from people. | too directive” (Participant 6, I-2).

Here the tutor describes the challenges her tutees present and indicates that she is working on strategies for being less directive. She does not merely report a problem (tutees’ lack of questioning) but asks herself what she can do to address the problem.

“My greatest challenge is insecurity about the level of skill I really have (Participant 1, Jml 1). Tutoring is “so time intensive” (Participant 1, I-2). “If it were not for the ongoing TD classes and the support of the LC staff, I would not be doing this at all.” (Participant 1, Journal 6.)

“You can’t make people participate, but you can provide some structure.” (Mathematics supervisor’s advice to Participant 8, I-2).

“I really enjoyed the camaraderie between the whole tutoring group and the Learning Center environment. I really enjoy that, and it seems like we’re all here to support each other. You have a support group” (Participant 6, I-2).