The Contribution of Education, Experience, and Personal Characteristics on the Reflective Judgment of Students Preparing for School Administration

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Andrews University
School of Education

THE CONTRIBUTION OF EDUCATION, EXPERIENCE, AND PERSONAL CHARACTERISTICS ON THE REFLECTIVE JUDGMENT OF STUDENTS PREPARING FOR SCHOOL ADMINISTRATION

A Dissertation
Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Margaret Rae MacDonald
June 2003
THE CONTRIBUTION OF EDUCATION, EXPERIENCE, AND PERSONAL CHARACTERISTICS ON THE REFLECTIVE JUDGMENT OF STUDENTS PREPARING FOR SCHOOL ADMINISTRATION

A dissertation presented in partial fulfillment of the requirements for the degree Doctor of Philosophy

by

Margaret Rae MacDonald

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ABSTRACT

THE CONTRIBUTION OF EDUCATION, EXPERIENCE, AND PERSONAL CHARACTERISTICS ON THE REFLECTIVE JUDGMENT OF STUDENTS PREPARING FOR SCHOOL ADMINISTRATION

by

Margaret Rae MacDonald

Chair: Lyndon G. Furst
ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: THE CONTRIBUTION OF EDUCATION, EXPERIENCE, AND PERSONAL CHARACTERISTICS ON THE REFLECTIVE JUDGMENT OF STUDENTS PREPARING FOR SCHOOL ADMINISTRATION

Name of researcher: Margaret Rae MacDonald

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Date completed: June 2003

Problem

School administrators must use high levels of reasoning to deal with the complexities of today's educational system. Reflective thinking has proven to be an effective administrative tool in problem solving, staff supervision, and school improvement, yet preparation programs for school administrators have limited knowledge about what contributes to reflective judgment in their students, thus making it difficult to develop curriculum and pedagogy to enhance reflection.
Method

The Reflective Judgment Model provides the theoretical framework for this mixed methods research design that explores contributory variables that contribute to the reflective judgment of educational leadership students. The Reasoning about Current Issues Test measured reflective judgment, and the Experience and Background Inventory and Demographic Information Form measured experiential, educational, and personal characteristics of 128 educational leadership students. Two linear regression models determined the variables that contributed to the students’ reflective judgment. Data were analyzed for reflective judgment level, and contributory variables were determined using two linear regressions. A semi-structured focus group of five high-scoring reflective thinkers provided information on what they believed contributed to their reflective judgment.

Results

Reflective judgment levels ranged from pre-reflective to reflective with a mean level score of quasi-reflective. Six variables contributed to reflective judgment, accounting for 14% to 20% of the variability in reflective judgment. Internship and curriculum development class had a positive effect, while school achievement and number of educational leadership courses had a negative effect. Age positively effected reflective judgment, while aspiration level had a negative effect. Focus group students indicated that knowledge of multiple perspectives, influence of others, prior experiences, personal attributes, and social dynamics contributed to their reflective judgment.
Conclusions

In the preparation of school administrators, educational leadership programs can enhance students' reasoning by providing a combination of experiences throughout their course of studies that offer opportunities to develop multiple perspectives, deal with "real life" issues, and be exposed to reflective role models through activities such as curriculum development and mentor-supported internships. The wide range of reflective judgment levels and lack of reflective thinking in the majority of the students indicates that it is important for educational leadership faculty to know about the development, assessment, and instruction of reflective judgment in order to more effectively move students to the reflective thinking level.

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>vi</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>vii</td>
</tr>
</tbody>
</table>

## Chapter

1. INTRODUCTION ................................................................. 1

   - Background of the Problem .............................................. 1
   - Statement of the Problem ............................................ 4
   - Purpose of the Study .................................................. 7
   - Research Questions .................................................. 8
   - Theoretical Rationale ................................................ 9
   - Definition of Terms .................................................... 12
     - Reflection ............................................................. 12
     - Reflective Judgment ............................................. 13
     - Educational Leadership Program ............................. 14
   - Contribution of The Research ..................................... 14
   - Organization of The Study ......................................... 16

2. REVIEW OF RELATED LITERATURE ........................................... 18

   - Reflective Thinking .................................................. 19
     - Reflection and Experience ..................................... 23
     - Reflection and Teacher Education ........................... 25
     - Cognitive Reflection ............................................. 26
     - Critical Reflection ................................................ 26
     - Teachers' Narrative Reflection ................................. 30
   - Reflection and Responsibilities of Educational Leaders ... 34
     - Reflection and Problem-Solving of Educational Leaders 35
     - Reflection and Staff Supervision of Educational Leaders 39
   - Reflection and Preparation of Educational Leaders ........ 42
   - Reflective Judgment .................................................. 48
     - Measurement of Reflective Judgment ......................... 51
     - Development of Reflective Judgment ......................... 52
   - Reflective Judgment and Related Variables .................. 57
     - Educational Level and Reflective Judgment ............... 57
Educational Experiences and Reflective Judgment ....................61
Personal Characteristics and Reflective Judgment ..............................64
   Age .............................................................................................................64
   Gender .........................................................................................................65
   Critical thinking ........................................................................................66
   Psychosocial characteristics ..................................................................67
Summary .........................................................................................................70

3. METHODOLOGY ..................................................................................................72

   Procedure for Quantitative Methods..........................................................73
      Quantitative Sample ........................................................................74
      Quantitative Data Collection ................................................................74
      Quantitative Instruments ...................................................................75
         The Reasoning about Current Issues Test ........................................75
         Experience and Background Inventory ...................................... 77
         Demographic Information Form ....................................................78
      Quantitative Data Analysis ................................................................78
         Theoretically Based Independent Variables ................................79
         Number of Independent Variables ........................................... 81
         Empirical Contribution of Independent Variables ..................... 81
         Multicollinearity Among the Independent Variables ................. 81
   Procedure for Qualitative Methods .............................................................83
      Qualitative Sample .............................................................................84
      Focus Group Data Collection ..............................................................85
         Clarity of Purpose .........................................................................85
         Appropriate Environment ...........................................................86
         Sufficient Resources ...................................................................87
         Appropriate Participation ...........................................................87
         Skillful Moderator .........................................................................87
         Effective Questions .........................................................................87
      Focus Group Data Analysis ................................................................89
   Internal Validity of the Study .....................................................................91
   Limitations ..................................................................................................91

4. RESULTS .........................................................................................................95

   Descriptive Statistics of the Quantitative Sample ........................................96
      Gender and Age ..................................................................................96
      Educational Leadership Program Status and Courses ..........................97
      Work Experience ...............................................................................102
      Experience and Background Inventory ...........................................104
      Reflective Judgment .........................................................................106
         Essay Discrimination Scores .........................................................107
         Endorsement of Justification Scores .............................................109
   Research Question #1: Results of Regression Models ...............................113

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LIST OF TABLES

1. Gender ......................................................................................................... 97
2. Age of Respondents .......................................................................................... 97
3. Enrollment in Southern Connecticut State University
   Educational Leadership Program ......................................................................... 98
4. Beginning Coursework ...................................................................................... 99
5. Intermediate Coursework .................................................................................. 100
6. Advanced Coursework ...................................................................................... 101
7. Number of Courses Completed ........................................................................... 102
8. Present Occupation ............................................................................................ 103
9. Years Employed .................................................................................................. 104
10. Experience and Background Characteristics ....................................................... 105
11. Discrimination Scores ......................................................................................... 108
12. Means for Discrim Score .................................................................................. 109
13. Mean and Standard Deviation for Stage Most Often Endorsed ......................... 111
14. Stage Most Often Endorsed ............................................................................... 113
15. Model I, Regression Analysis With Endorse Score as Dependent Variable .......... 117
16. Model II, Regression Analysis With Discrim Score as Dependent Variable ........ 119
ACKNOWLEDGMENTS

I would like to thank the members of my dissertation committee, Dr. Jerry Furst, Dr. Shirley Freed, and Dr. Lester Horvath. Dr. Furst provided clear, supportive, and insightful guidance through the dissertation process. Dr. Freed inspired me to learn more about reflection and helped me to appreciate the importance of stories in our lives. Dr. Horvath unselfishly gave his time and expertise, and demonstrated incredible patience with my mathematical shortcomings.

This study would not have been possible were it not for the cooperation of the Southern Connecticut State University Educational Leadership Department. I would like to express my appreciation to Dr. Brian Perkins, Department Chair, and to the faculty who supported this study by allowing me to come into their classes and meet with their students. Thank you to the 128 educational leadership students who volunteered their time to participate in this study and to the five focus group participants who provided in-depth information on their reflective judgment.

I am fortunate to be surrounded at work and home by generous people, who make me laugh, learn, and love. Thank you to the Special Services Support Team staff that provides me with the opportunity to learn from the best. Thank you also to Ms. Linda Russell who provides an environment that encourages innovative learning and working. Special thanks also to Dr. Colin Vance, whose expertise in regression analysis helped me to understand the meaning of my results.
Thank you to my father, Fred Pease, for serving as a wonderful role model, and to my sister and friend, Penny Hazelton, for leading by example; and my daughter, Cassandra, who has provided me with a most satisfying 18-year learning and loving experience. A huge thank you goes to my husband Hugh for always being there, for making me laugh, and for exemplifying competency in all he does. In many ways this document would not have been possible were it not for my mother, Margaret McLeod Pease who always believed that anything was possible, and my daughter, Margaret Macy MacDonald who made me a more reflective person.
CHAPTER 1

INTRODUCTION

Background of the Problem

Educational leaders are faced with complex problems existing within the context of ever-changing and interconnected social and educational systems. Because of the complexity of problems today, there is an expectation that educational leaders are able to use high levels of reasoning in the performance of their jobs. They are expected to solve problems that are confounded with multiple interpretations and uncertainty. The National Association of Secondary School Principals (NASSP) in their publication entitled *Competencies of Effective Leaders* indicates that educational administrators should be competent at problem analysis and the subsequent activities of searching for information with a purpose, finding relevant data, analyzing it, and determining its importance in an effort to reach logical conclusions and high-quality decisions (NASSP, 1999).

The beliefs, knowledge, understandings, and values that an educational leader has will assist them in solving many of today's educational dilemmas. Leithwood, Begle, and Cousins (1994) point out that "what school leaders do is most directly a consequence of what they think. School leaders have been observed to engage in quite distinct patterns of practice shaped by how they think about work" (p. 12).
Caine and Caine (1997) argue that if school administrators are to deal effectively with the complexities of the educational system, it will require them to acquire new skills. Leithwood and Stager (1989) believe that administrators need to better understand how to handle unclear situations and the complexity of the educational systems of today.

Reflective thinking has proven to be an effective skill that allows administrators to reframe the issues and describe them, in order to better solve problems in education (Barnett & Brill, 1989; Leithwood, Jantzi, & Steinbach, 1999; Schon, 1983; Schwahn & Spady, 1998; Sergiovanni, 2001; Short & Rinehart, 1993). Osterman and Kottkamp (1993) found that when educational administrators were asked how reflection affected their professional practice, they indicated that it increased their self-understanding, while providing a useful guide for action. These principals indicated that reflection gave them greater awareness and openness to the ideas, views, and beliefs of others and that reflection improved their relationships with others. Reflection, according to these principals, led them to major shifts in their perspectives and to increased confidence and commitment. Leithwood et al. (1999) indicate that “leaders who are good problem solvers show strong reflective dispositions, that allow them to learn from experience, a factor that appears to contribute to their success” (p. 179).

State and national educational organizations have recognized the importance of reflection as evidenced by its inclusion into state standards for administrative certification and into activities for best practice (CSDE, 1999; NASSP, 1999). The Connecticut State Department of Education (CSDE) suggests that it is the responsibility of an administrator to enhance reflection in the members of the school community as a means to accomplish school improvement and staff supervision (CSDE, 1999). This standards based document

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explains that school improvement is accomplished when “the school leader values the participation and collaboration of members of the school community for the purpose of establishing a climate of reflection and learning for students” (p. 10). These standards suggest that school improvement is most likely to occur when there is a school culture that values and encourages individual and group reflection and learning. This publication recommends that reflection play an important role in the staff evaluation process and school leaders should be “committed to providing opportunities for ongoing teacher reflection and use the evaluation process to promote teacher reflection and growth” (p. 5). For reflection to occur in the school community, the educational leader will need to value and demonstrate its usefulness.

Educational leadership programs that have the responsibility to prepare school administrators are changing both the content and the process of their training in an effort to enhance the ability of their students to solve complex problems and move schools into improvement (Yee, 1997). According to Yee (1997), “recent efforts to align training and actual practice are reflected by an emphasis on the development of group processing skills, collaborative leadership styles and communications skills, participatory decision making, consensus building, reflective thinking and mentoring” (p. 2). These activities will be further strengthened if the training includes the practice of reflection (Barnett & Brill, 1989; Leithwood et al., 1999; Osterman & Kottkamp, 1993).

If educational leadership programs are to enhance and support the development of reflective thinking, it is important that they know what factors contribute to the development of reflection in their students. Educational experiences can become more effective learning tools with this knowledge. Research on reflective thinking has found a
variety of factors such as educational and non-educational experiences, and personal characteristics that contribute to the reflective thinking in students. However, when one looks at the ability to reason about complex problems and the skills necessary for educational leaders, it is necessary to find research that speaks more directly to solving ill-structured complex problems. The Reflective Judgment Model provides a framework to look at the development of reflective thinking with regard to ill-structured problems (King & Kitchener, 1994). The literature on reflective judgment and adult learners provides information on its development (King & Kitchener, 1994; Kitchener, Lynch, Fischer, & Wood, 1993). This model provides a good theoretical framework in which to study the reasoning abilities of educational leadership students and the contributory factors to their reflective judgment.

Statement of the Problem

For educational leaders to be effective problem-solvers, supervisors, and to be able to move schools into continuous improvement, they need to use and demonstrate the ability to reason about complex issues. Reflection is a skill that assists in the reasoning of the very complex problems that an educational leader faces on a daily basis. Davies and Ellison (1997) believe that as our society becomes more complex, educational leaders need to be able to reason in areas of ethical complexity and manage complex ethical responsibilities and value conflicts. If educational leadership programs are to adequately prepare their students for all the responsibilities associated with school administration and leadership, these programs need to foster the development of high-level reasoning skills. They need to know what contributes to reflective judgment in their students. There is limited research on the factors that contribute to reflective judgment in educational leadership students.
leadership students, making it difficult for educational leadership programs to determine appropriate program content, process, and pedagogy. Three problems that educational leadership programs face when attempting to accomplish this goal are discussed below.

*Issue 1: Lack of reflective judgment in graduate-level students.* Consider the statement by the Association of American Colleges (1991) that the foundation for educational reform depends on treating increasingly complex matters from multiple points of view. “Students must discover that nothing is self-evident, that nothing is simply there, that questions and answers are chosen and created, not given and that they always are framed by context, for that reason, they are contingent” (p. 13). This quote is particularly disturbing when the research of King and Kitchener (1994) indicates that half of the beginning graduate-level students in the first 3 years of their program uniformly did not demonstrate reflective judgment.

*Issue 2: The complex problems educational administrators must deal with in their jobs.* The preparation of educational administrators has become more difficult because of the nature of the problems they will face and the context in which they deal with these problems. Churchman (1971) terms these complex problems ill structured because they are not easily described and the outcome is unknown or not known with a high degree of certainty. He argues that these ill-structured problems are a reflection of the real-world problem solving of adults. Leithwood and Stager (1989) found that problem-solving strategies between expert and typical principals were different when they were faced with ill-structured problems. Expert principals were better able to define the specific nature of the problem by using more basic principles. It is important that educational leadership programs for school administrators provide future leaders with some of the "new tools"
that Caine and Caine (1997) refer to as keys to successful leadership. The research and literature on reflection indicates that it is a useful tool for administrators in the field of education, yet there is little known about the factors that may predict high levels of reflective judgment in educational leadership students. What effect do experience, education, and personal characteristics have on the reflective judgment of educational leadership students?

**Issue 3: Lack of research on the reflective judgment of educational leadership students.** The literature on reflective thinking in education focuses primarily on student and teacher reflection and on teacher preparation programs (Pasch, 1990; Ross, 1989; Schon, 1987; Sparks-Langer & Colton, 1991; Van Manen, 1977). Teacher education programs at universities use this research to justify the teaching of reflective thinking and to provide guidance in what strategies to teach and how to teach them (Loughran, 1996; Reagan, Case, & Brubacher, 2000). Although reflective thinking has become a valued outcome in both administrative practice and in higher education preparation programs for administrators, few studies have examined reflective thinking in graduate-level administrative leadership students. The issue of solving ill-structured problems and reasoning at high levels continues to be paramount to the role of an educational leader, but unfortunately, the reflective research does not apply only to reasoning of ill-structured problems. When looking for research on how one reasons when dealing with complex problems, the research on reflective judgment provides us with some information on how this reasoning develops, ways to assess it, and to a limited degree some factors that may contribute to its development. Kitchener et al. (1993) state, “In contrast to skill theory, research on the reflective judgment model has generally ignored
the role of environment and has focused on documenting the existence of developmental changes” (p. 894). The need to look at factors such as experience, education, and personal characteristics and their effect on reflective judgment in educational leadership students continues to be an area that requires more research (Bowen, 1989; Mann, 1999; Wood, Kitchener, & Jensen, 2001). Curriculum development and pedagogy for Educational Leadership programs will be enhanced by this information.

Questions that the literature still has not addressed include, What work experiences contribute to reflective judgment? Are there particular curricular offerings that promote reflection? Are there life experiences that predict reflection? What personal characteristics contribute to the development of reflective judgment in educational leadership students?

**Purpose of the Study**

As the culture of societal and educational reform continues to develop, school administrators will be called upon to deal with many complex issues and problems within the context of changing systems. Leithwood and Stager (1989) assert that “the core of administration is problem solving” (p. 127). The ability for educational leaders to use sophisticated reasoning skills to help solve these problems is primary to success in their job. In addition, educational administrators have the responsibility to promote reflection in the learning environment by modeling reflection and encouraging it through the professional development and supervision process. Preparation of educational leaders to operate within a reflective framework requires that colleges and universities have knowledge of the factors that contribute to the development of reflective judgment in these students. In this study, my purpose was to determine if factors such as education,
experience, and personal characteristics contributed to the reflective judgment of educational leadership students. Two regression models determined whether there was a statistically significant combined contributory effect of personal characteristics such as age and aspiration level; non-educational experiences such as years employed; and educational variables, such as educational leadership courses completed on the reflective judgment of educational leadership students. Comments from educational leadership students who scored high in reflective judgment served to add depth to the discussion. The information from this study can be utilized in educational leadership programs in conjunction with other reflective research to determine good candidates for the program, development of program curriculum, and implementation of pedagogy towards the goal of enhancement of reflective judgment skills in educational leadership students.

The Research Questions

This study investigates the combined effect of experiential, educational, and personal characteristics on reflective judgment in educational leadership students.

Research Question 1: What are the experiential, educational, and personal characteristic that contribute to the development of reflective judgment in educational leadership students?

Hypothesis 1: A combination of experiential, educational, and personal characteristic contribute to the development of reflective judgment in educational leadership students.

Research Question 2: What do educational leadership students who have high-scoring reflective judgment believe contributed to their reflective judgment?
Theoretical Rationale

The theoretical framework chosen for this study is the Reflective Judgment Model by King and Kitchener (1994). The Reflective Judgment Model is based upon the epistemological theories and stage development research of Piaget (1967), Perry (1970), and King and Kitchener (1994). Basic to this model are three criteria that King and Kitchener (1994) have embraced for dealing with open-ended controversies: (a) acknowledgment that information, by its very nature, is uncertain and incomplete; (b) awareness that competing or conflicting claims may be based on different information or different criteria for organizing and evaluating that information; and (c) an openness to new information that may become available and the ability to state, at least in principle, what would have to occur to change the individual’s viewpoint. These three statements are very much related to the kinds of issues that a school administrator faces on a daily basis.

The Reflective Judgment Model looks at the ability of individuals to reason regarding ill-structured problems and it describes changes that people hold about assumptions of knowledge. Specifically, the model focuses on people’s assumptions about the certainty of a knowledge claim, how knowledge is acquired, and how beliefs or knowledge claims can be justified. This model provides for seven stages of reflective judgment based on a person’s epistemological beliefs. Each of the seven stages is associated with a different strategy for solving ill-structured problems based on how the individual views knowledge and justifies their beliefs. Each stage is built upon the cognitive skills of the previous stage. The model advocates that in normal development most people pass through the same stages in the same sequence, but not all people attain
all stages. Wood et al. (2001) provide an abbreviated description of the Reflective
Judgment Model stages below.

Pre-Reflective Thinking (Stages 1, 2 & 3)

Stages 1 & 2
View of knowledge: Knowledge is assumed to be absolutely certain or certain but
not immediately available. Knowledge can be obtained directly through the senses
(as in direct observation) or via authority figures.
Concept of justification: Beliefs are unexamined and unjustified or justified by their
correspondence with beliefs of an authority figure (such as a teacher or parent). Most
issues are assumed to have a right answer, so no actual controversy exists and there
is little or no conflict in making decisions about disputed issues.

Stage 3
View of knowledge: Knowledge is assumed to be absolutely certain or temporarily
uncertain. In areas of temporary uncertainty, only personal beliefs can be known
until absolute knowledge is obtained. In areas of absolute certainty, knowledge is
obtained from authorities.
Concept of justification: In areas in which certain answers exist, beliefs are justified
by reference to authorities’ views. In areas in which answers do not exist, beliefs are
defended as personal opinion because the link between evidence and beliefs is
unclear.

Quasi-Reflective Thinking (Stages 4 and 5)

Stage 4
View of knowledge: Knowledge is uncertain and knowledge claims are idiosyncratic
to the individual because situational variables (such as incorrect reporting of data,
loss of data over time, or disparities in access to information) dictate that knowing
always involves an element of ambiguity.
Concept of justification: Beliefs are justified by giving reasons and using evidence,
but the arguments and choice of evidence are idiosyncratic (for example, evidence
may be chosen or sought out in order to fit an already established belief).

Stage 5
View of knowledge: Knowledge is contextual and subjective because it is filtered
through a person’s perceptions and criteria for judgment. Only interpretations of
evidence, events, or issues may be known.
Concept of justification: Beliefs are justified within a particular context by means of
the rules of inquiry for the context and by context-specific interpretations of
evidence. Specific beliefs are assumed to be context specific or are balanced against
other interpretations, which complicates (and sometimes delays) conclusions.
Reflective Thinking (Stages 6 and 7)

Stage 6
View of knowledge: Knowledge is constructed into individual conclusions about ill-structured problems based on information from a variety of sources. Interpretations can be known based on evaluations of evidence across different contexts and the evaluated opinions of reputable others.
Concept of justification: Beliefs are justified by comparing evidence and opinions from different perspectives on an issue or across different contexts and by constructing solutions that are evaluated by criteria such as the weight of the evidence, utility of the solution, or pragmatic need for action.

Stage 7
View of knowledge: Knowledge is the outcome of a process of reasonable inquiry by which solutions to ill-structured problems are constructed. The adequacy of those solutions is evaluated in terms of what is most reasonable or probable according to current evidence, and is reevaluated when relevant new evidence, perspectives, or tools of inquiry become available.
Concept of justification: Beliefs are justified probabilistically based on a variety of interpretive considerations such as: weight of the evidence, explanatory value of the interpretations, risk of erroneous conclusions, consequences of alternative judgments, and interrelationships of these factors. Conclusions are defended as representing the more complete, plausible, or compelling understanding of an issue based on the available evidence. (Wood et al., pp. 59-61)

The Reflective Judgment Model specifically focuses on controversial problems where real doubt exists about correct or best solutions. Since many of the problems educational leaders face are complex and controversial, this particular theoretical model provides a useful theoretical base and means of assessment for further research into factors that contribute to reflective judgment in educational leadership students.

Another characteristic of the Reflective Judgment Model is the emphasis on the person's assumptions about knowledge (King & Kitchener, 1994). In this model, epistemological assumptions are implicit in the individuals' decisions to look for or ignore the facts of a situation, in the strategies they use to gain information about a problem, in their attempts to understand divergent interpretations, and in the degree of certainty they feel about whether a problem has been solved (King, 1992). The Reflective Judgment Model attempts to make these assumptions explicit and to show how
they evolve over time to help document the gains in complex reasoning that undergraduate and graduate students demonstrate during their college years.

King and Kitchener (1994) have operationalized the Reflective Judgment Model by designing a semi-structured interview, the Reflective Judgment Interview, and a paper-and-pencil measure, The Reasoning about Current Issues Test, to assess reflective judgment and its development in adults. Several studies have employed the use of these two instruments with undergraduate and graduate students. These studies found substantial differences in the sophistication of reasoning across educational levels with a gradual increase in reflective judgment level as students progress through college (King & Kitchener, 1994; Wood, et al., 2001). They also discovered that there is minimal change in reflective judgment levels when the test/retest is short term (Kitchener et al., 1993). Pascarella and Terenzini (1991) characterize the Reflective Judgment Model as the “best known and most extensively studied model of adult cognitive development” (p. 123).

**Definition of Terms**

**Reflection**

At the present time, there is no consensus regarding a definition and description of reflective thinking, although most definitions incorporate the three elements described by Stones (1994) as practical experience, meaningful knowledge, and interaction with others. Dewey (1933) described reflection as “involving (1) a state of doubt, hesitation, perplexity, mental difficulty, in which thinking originates, and (2) an act of searching, hunting, inquiring, to find material that will resolve the doubt, settle and dispose of the perplexity” (p. 12). Schon (1987) viewed reflection as the process by which a person
gains knowledge from his or her own experience. He describes reflection as a "dialogue of thinking and doing through which I become more skillful" (p. 31).

Reflection in the field of education carries the connotation of deliberation and of making choices and coming to decisions about alternative courses of action to complex issues. Dewey (1933) argues that the process of reflection begins first with a problematic situation that cannot be resolved in the usual ways. King (1992) further defines reflection,

Teaching students to think clearly and complexly, to present their arguments persuasively, and to weigh competing claims is a complex and difficult process. Learning to think reflectively, as defined here, involves some fundamental changes in the student's basic assumptions about knowledge itself and about the process of learning. (p. 7)

Reflective Judgment

Reflective Judgment as defined by King, Wood, and Mines (1990) is a kind of reflective thinking that solves ill-structured problems within the context of the problem-solver's assumptions about knowledge. King and Kitchener (1994) describe reflective judgment as

An evaluation and integration of existing data and theory into a solution about the problem at hand, a solution that can be rationally defended as most plausible or reasonable, taking into account the sets of conditions under which the problem is being solved. (p. 8)

They use the term reflective to describe the reasoning that is characteristic of stages 6 and 7 of the Reflective Judgment Model. This definition is somewhat different from previous definitions of reflection in that it refers to the way in which a person views knowledge and justifies his or her beliefs. Hence, King and Kitchener (1994) define reflection as the highest level of reflective judgment that represents assumptions that the knowledge one needs to solve ill-structured problems must be actively constructed from
relevant data and assessed within the context that they were generated. They also describe a person’s conclusions in the reflective stage as open to reevaluation if additional relevant data presents themselves.

**Educational Leadership Program**

Educational leadership program for purposes of this study is defined as a prescribed set of courses that are offered at a college or university which, when completed, result in the granting of an educational administration certificate. This certificate is required for administrative positions of principal, assistant principal, assistant superintendent, director of curriculum, and director of pupil services.

**Contribution of the Research**

This study contributes to the body of knowledge regarding the preparation of school administrators and to the literature on adult reflective judgment in five ways. First, the reflective judgment research has consistently demonstrated that an upward movement in reflective judgment is identifiable across educational levels (King & Kitchener, 1994). This study provides information on the effect of successful completion of educational leadership basic core courses on reflective judgment. As this relationship is explored, it will provide information for further refinement and development of educational leadership curriculum, pedagogy, and instruction.

Second, the role of experiential learning and mentorship in an educational program has been found to contribute to reflective thinking in college students; however, the use of internship has not been well studied as it relates to students in educational leadership programs and its effect on reflective judgment. The literature on reflection
emphasizes that educational leaders need to use reflection when supervising and problem solving complex problems and, therefore, it is important to discover whether an internship program for these students can have a positive effect on reflective judgment.

The reflective judgment literature has found that there is a positive relationship between undergraduate student grades in college and reflective judgment, suggesting that students with high academic performance would also have high reasoning skills as evidenced by high scores on the Reasoning about Current Issues Test (Wood et al., 2001). There is limited research on the connection between school achievement and reflective judgment in graduate students and none as it relates to educational leadership graduate students. This study provides some initial information on whether school achievement contributes to reflective judgment in this population. If an effect is found, it will have implications for educational leadership programs as to whom they accept into their programs as well as content of the program itself.

There are limited studies that examine the effect of experience outside of formal education on reflective judgment. Wood et al. (2001) point out, "Although it appears reasonable to believe that the Reflective Judgment Interview documents a distinct set of abilities which change during college, RJI studies have not examined how reflective judgment scores are related to student behaviors in and outside of the classroom" (p. 12). This study provides some exploratory data on the effect of experiences such as years employed and leadership experience at home and in the community on reflective judgment in educational leadership students.

Personal characteristics such as gender, age, creativity level, need for cognition, and moral judgment have been studied in the reflective thinking and reflective judgment
literature (Glatfelter, 1982; King & Kitchener, 1994; Rest, 1986; Strange & King, 1981); however, the majority of this research involves undergraduate students. There is limited research on these areas also as they relate to educational leaders and educational leadership students. This study will expand upon the research by looking at the personal characteristics of age and aspiration level in graduate-level educational leadership students.

This study combines variables such as age and number of courses completed which have been identified in previous reflective judgment research, with variables that have yet to be explored in the reflective judgment literature, such as internship experience, curriculum development course, and aspiration level in an effort to add to the knowledge about factors that may contribute to reflective judgment in educational leadership students.

Organization of the Study

Following this introductory chapter, the dissertation is organized in the following manner:

Chapter 2 provides an overview of the reflective thinking, and reflective judgment literature in which this study is grounded. This chapter discusses the reflective theories regarding process and levels. In addition, reflection and its relationship to experience, teacher education, and school administrators are summarized. Educational leaders' responsibilities of problem solving and staff supervision are discussed as they relate to reflection, and the literature on educational leadership preparation programs is summarized. Reflective judgment research is reviewed for developmental trends and possible contributory variables that link the research to the hypothesis of this study.
Chapter 3 describes the methodology selected for this study. A mixed method design was chosen to allow for more dynamic interplay between the methodologies. The first part of this chapter describes the self-selected sample and the sampling procedures for the quantitative element of the study. Descriptions of the instruments used for quantitative data collection and analysis of data utilizing multiple regression analysis are described in this chapter. The second half of this chapter describes the participants of the focus group interview, how they were selected, the focus group interview structure, and process for data analysis.

Chapter 4 provides the reader with descriptive information about the participants and results of the data analysis in the quantitative element of the study. Tables present the results from two multiple regression models when reflective judgment was used as the dependent variable and demographic, experiential, and educational data obtained from the Experience and Background Inventory and Demographic Form as the independent variables. Chapter 4 also provides a description of the information gathered from the focus group interview and a summary of the themes that were revealed through the content analysis. The first and second research questions are answered in this chapter.

Chapter 5 provides a complete summary of the study. Each variable in the regression is discussed in light of the literature and comments from focus group participants, and the results are further described and defended. Implications for practice and further research are discussed.
CHAPTER 2

REVIEW OF RELATED LITERATURE

The purpose of this study was to determine if educational and non-educational experiences and personal characteristics contribute to reflective judgment in educational leadership students. This chapter will first review the literature on reflective thinking and its relationship to experience and teacher education. The second part of this chapter will review the literature related to the educational leadership responsibilities of problem solving and staff supervision and the relationship to reflection. Because the purpose of this study was to inform educational leadership programs concerning the factors that contribute to reflective judgment in educational leadership students, this chapter also includes a discussion of educational leadership preparation programs and recent changes in content and pedagogy. The last section of this chapter discusses the Reflective Judgment Model, how reflective judgment is measured, how it develops, and the factors that may contribute to reflective judgment in students. Reflective judgment research and the contribution of related variables is organized in this chapter by educational level, educational experience, and personal characteristics such as age, gender, and psychosocial characteristics in order to link the literature to the research questions of this study.
Reflective Thinking

Dewey (1933) was one of the first theorists to discuss reflection and its implication to teaching and learning. He provided a definition of reflection as being a type of thinking and acting that focuses on complex problems.

Reflective thinking in distinction from other operations to which we apply the name of thought, involves (1) a state of doubt, hesitation, perplexity, mental difficulty, in which thinking originates, and (2) an act of searching, hunting, inquiring, to find material that will resolve the doubt, settle and dispose of the perplexity. (p. 12)

Dewey (1933) viewed the process of reflection as cyclical, consisting of five phases: suggestions, problem, hypothesis, reasoning, and testing. In later years, Kolb (1984) defined an experiential learning process as dynamic and cyclical consisting of four stages: experience, observation and reflection, abstract re-conceptualization, and experimentation. Experiential learning theorists maintain that learning is best when the learner is actively involved, when the learning takes place within a meaningful context, and when the learning involves others (Kolb, 1984; Schon, 1987; Stones, 1994). They believe that experience is the basis for learning; however, learning cannot take place without reflection. Gore and Zeichner (1991) and Schon (1987) assert that there must be a complete cycle that includes “doing.”

There is discussion in the literature regarding when reflection takes place. Gore and Zeichner (1991), Boud, Keogh, and Walker (1985), and Pugach (1990) argue that reflection involves conscious detachment from an activity followed by a distinct period of contemplation. Schon (1987) writes about reflection that is tied to action as reflection-in-action and reflection-on-action. Schon discusses that often a problematic situation presents itself as a unique case and the old rules do not apply. In those cases if a person is to deal competently with the problem, he or she must reflect as the action is occurring.
Schon refers to this process as reflection-in-action, thus adding a new way of looking at reflection as not only reflection-on-action. Schon (1987) has challenged us to think of reflection as also occurring during the action. He asserts that a professional can reach a stage of competence where he or she is able to think consciously about what is taking place and modify actions instantaneously in much the same way as jazz musicians work with each other and the musical piece.

When good jazz musicians improvise together, they similarly display reflection-in-action smoothly integrated into ongoing performance. Listening to one another, listening to themselves, they “feel” where the music is going and adjust their playing accordingly. A figure announced by one performer will be taken up by another, elaborated, turned into a new melody. Each player makes on-line inventions, and responds to surprises triggered by the inventions of the other players. (Schon, 1987, p. 30)

Loughran (1996) supports Schon’s view of reflection-in-action in his study of the reflection of student teachers. He indicates, “As their repertoire of suggestions, experiences of problem situations, hypotheses, reasoning, and testing skills increases, their ability to reflect during teaching is enhanced” (p. 192).

Killion and Todnem (1991) used Schon’s (1983) work to discuss three types of reflection. They point out that reflection-on-action and reflection-in-action are different from reflection-for-action. Killion and Todnem (1991) view reflection-on-action and reflection-in-action as being reactive in nature, occurring during or after an experience. They argue that reflection-for-action is proactive and that this type of reflection is

The desired outcome of both previous types of reflection. We undertake reflection, not so much to revisit the past or to become aware of the metacognitive process one is experiencing (both noble reasons in themselves), but to guide future action (the more practical purpose). (p. 15)

Reagan et al. (2000) believe that all three types of reflection are important for a classroom teacher to practice, but the importance of each type of practice may change
depending upon the individual and the context. They view reflection-for-action as transformative, "the process of engaging in reflection-for-practice should be seen, not as a linear one, but as an ongoing spiral in which each element of reflective practice is constantly involved in an interactive process of change and development" (p. 22).

Zeichner and Liston (1987) and Goodman (1978) viewed reflection as a way of thinking about educational matters that involves the ability to make rational choices and to assume responsibility for those choices. The ability to recognize an educational dilemma, respond to it by recognizing similar and dissimilar elements, frame and reframe it, experiment with consequences of solutions, and examine the solution by determining desirability of consequences are elements that Goodman (1978) and Ross (1989) believe are part of the reflective process.

It has been argued that (Dewey, 1933; Gore & Zeichner, 1991; King & Kitchener, 1994; McNamara, 1990; Sparks-Langer & Colton, 1991; Wildman & Niles, 1987; Zeichner & Liston, 1990) reflection is really the ability to analyze information within a framework of beliefs. Van Manen (1977) proposes three levels of reflection. The first level is technical reflection, which is concerned with the efficiency and effectiveness of means to achieve certain ends; the second level is practical reflection which allows for more open examination of the goals and assumptions on which they are based; and the third level of reflection calls for considerations involving moral and ethical criteria. This level of critical reflection views personal action within wider socio-historical and politico-cultural contexts (King & Kitchener, 1994; Noffke & Brennen, 1988; Smith & Lovat, 1991; Zeichner & Liston, 1987).
The model developed by Sparks-Langer, Simmons, Pasch, Colton and Starko (1990) provides a framework for reflective thinking similar to Van Manen’s idea of critical reflection. Sparks-Langer et al. (1990) developed a framework consisting of seven levels of language and thinking that are indicative of stages of reflective thinking. Level 1 is the lowest, when no descriptive language of an event is provided. Level 2 involves a simple layperson’s description of the event. In level 3 the person is able to label events with appropriate terms, and in level 4 they can explain the event using personal preference as the rationale. At level 5 an explanation with principle or theory is given as the rationale. Level 6 thinking requires an explanation with principle/theory and consideration of context. The highest level is level 7, which provides explanation with consideration of ethical, moral, and political issues. This model was developed to improve teacher education by providing a framework for assessing reflective thinking. As Sparks-Langer et al. (1990) began to use the framework, they found that different ways of coding these levels may be necessary. They state, “We have begun to experiment with a dual coding scheme, with one score for technical thinking and another for ethical/moral thinking. This results in a profile that when compared to a single score, may describe reflection more fully” (p. 30).

King and Kitchener (1994) also support the theory that a person’s beliefs and assumptions about knowledge play a large role in the development of reflective thinking. They have developed a Reflective Judgment Model built upon the premise that “reflective thinking requires the continual evaluation of beliefs, assumptions, and hypotheses against existing data and against other plausible interpretations of the data” (p. 7). The Reflective Judgment Model, similar to the framework developed by Sparks-
Langer et al. (1990), describes stages of reflection. King and Kitchener (1994) have defined these stages based on epistemological development in the solving of complex problems. The Reflective Judgment Model is discussed in greater depth in chapter 1 and later in this chapter.

The literature emphasizes the importance of reflection for adult learners, demonstrates that there are different types of reflection, and different ways to organize and describe reflection. Hatton and Smith (1994) advocate that the theoretical framework for reflection adopted by a particular program will depend upon its purposes and focus, to a degree, on the assumptions on which the program is based.

Reflection and Experience

Seventy years ago Dewey (1933) expressed the belief that “all genuine education comes through experience” (p. 25). Many learning theories emphasize the importance of reflection in putting meaning into one’s experience and action. Constructivism describes learning as an interaction with the environment in a problem-anchored and student-centered way (Goodman, 1978; Perkins, Faraday, & Bushey, 1991). Dewey (1933) and Piaget (1967) advocated that learning depends upon the integration of experience with reflection and of theory with practice. They argue that experience is the basis for learning and that learning cannot take place without reflection.

Experienced teachers often are able to make sense of and respond to a given problematic situation in the classroom more quickly and effectively than novices. Sparks-Langer and Colton (1991) indicate through their research that although good teaching practice does indeed depend on a strong experiential base, reflective thinking can help speed up the development of such an experiential base in new teachers.
The relationship of reflection and experience is strong; however, many would argue that experience alone is not sufficient to enhance reflection and learning (Loughran, 1996; Oliver, 1996; Osterman & Kottkamp, 1993; White & Lester, 1987). Oliver (1996) studied freshman engineering students who were involved in a context-based, situational learning environment and found that more direct instruction on reflective judgment and problem-solving strategies was necessary to optimize learning. Many college preparatory programs have recently included field/clinical experiences as part of their preparation for students. Research on the success of these programs relies on whether there was structure for reflection using mentors, sufficient time for the experience, and specific competencies and assessment of those competencies (Gousha, 1988; Prickett, 1990). The use of field/clinical experiences in educational leadership programs will be discussed in later in this chapter.

The business community has also incorporated real-life work experiences with reflection. One such training program is called Action Learning, which teaches reflective habits to individuals undergoing leadership development in business-related project environments (Smith, 2001). Project participants use an action learning framework and reflective tools to frame and facilitate the action learning process. Smith (2001) points out that Action Learning provides the safe environment or ‘practice field’ for reflection and learning to occur, while recognizing that real responsibility lies outside any classroom environment; it lies with the participants who must own the business outcomes” (p. 36). The Action Learning training program has demonstrated success in preparing leaders for the business world by combining experience and structured reflective tools.
Reflection and Teacher Education

Research and teacher education have shifted their focus over the past years from simply providing the technical know-how to ensuring adequate interpretation and application of knowledge (Clarke, 1995). This shift in perspective has led to increasing interest in how teachers think and reflect and the effect that reflection has on their practice. Grimmett (1990) describes three different ways to think about reflection and the education of teachers: reflection that directs practice, reflection that informs practice, and reflection that transforms practice. This way of thinking about reflection is similar to what Killion and Todnem (1991) term reflection for action.

Sparks-Langer and Colton (1991) suggest that another way to look at reflection is to concentrate on the things that seem to play an important part in fostering reflective practice in classroom teachers. In a synthesis of the research on teachers’ reflective thinking they identify three elements that are important in teachers’ reflective thinking: cognitive element, critical element, and teachers’ narratives.

The first is the cognitive element, which describes how teachers process information and make decisions. The second, the critical element, focuses on the substance that drives the thinking—experiences, goals, values, and social implications. The final element of reflection, teachers’ narratives, refers to teachers’ own interpretations of the events that occur within their particular contexts. (p. 1)

I have chosen to use these three elements as a way to organize the extensive teacher education literature on reflective practice. Since the purpose of this study is to determine the factors that contribute to reflective judgment in educational leadership students, the review of the teacher education research will focus on factors that have been found in teacher education to promote reflection.
Cognitive Reflection

The cognitive element described by Sparks-Langer and Colton (1991) is “how teachers use knowledge in their planning and decision making” (p. 1). Cognitive researchers (Anderson, 1984; Berliner, 1986; Carter, Cushing, Sabers, Stein, & Berliner; 1990; Leinhardt & Greeno, 1986) have done research on how the knowledge base is organized. This research has found that expert teachers have a more comprehensive network of organized information (schemata) to use when making decisions than do novice teachers. Sparks-Langer and Colton (1991) point out that “a key factor in thinking of experts appears to be ‘automaticity’. Certain routines (sequences of responses) are automatically stimulated by a situation and put into action with little conscious attention by the teacher” (p. 2). Leinhardt and Greeno (1986) have found an additional difference in expert teachers when looking at teachers’ metacognition, finding that experts more often use self-regulated, purpose-driven behavior such as making inferences and mentally testing them than do novice teachers.

The research on how to promote cognitive reflection in teacher education have found guided field experiences (Grinberg, 1989), coaching (Pasch, 1990), concept maps (Morine-Dershimer, 1989), and 2 to 3 years of classroom-management experience (Hollingsworth, 1990) as ways to foster cognitive reflection.

Critical Reflection

A second element that Sparks-Langer and Colton (1991) identify as important in reflection is the critical element that they define as “how teachers make decisions, the critical approach stresses the substance that drives the thinking—the experiences, beliefs, sociopolitical values, and goals of teachers” (p. 6). Studies of this type of reflective
thought using frameworks by Sparks-Langer et al. (1990) and the Reflective Judgment Model by King and Kitchener (1994) provide the teacher education literature with information on the development of reflection and ways to promote critical reflection. Research has found that reflective judgment is a gradual slow process that occurs as students move through educational levels (King & Kitchener, 1994). Research has found that some techniques that promote critical reflection in teachers include journal writing (Osterman & Kottkamp, 1993); critical dialog; examination of multiple perspectives and action research (Clarke, 1995; Ross, 1989); curriculum development (DeLawter & Sosin, 2001); field experiences (Clarke, 1995); and modeling reflective practices (Loughran, 1996).

Loughran (1996) utilized a case study approach to assess student increase in reflective thinking during a semester class in which modeling reflection was a regular occurrence by the teacher. Student interviews and reflective journals were used to gather data regarding changes in reflection over the semester. Each journal was coded for the five phases of the reflective cycle: suggestions, problem, hypothesis, reasoning, and testing (Dewey, 1933). Overall, the students demonstrated the ability to become more adept at using reflection and that their increased teaching experience led them to be more capable of reasoning and testing. Loughran noted from their journals that their experiences aided their ability to more deliberately consider and plan their thinking about action. Half of the class also participated in a reflective discussion with the teacher. The students involved in these reflective discussions displayed a higher reflective ranking than those students who did not have the discussions. The research provides insights into how reflective thinking can be taught in teacher education programs. These studies show...
positive results when a college teacher models reflective thinking (Loughran, 1996) and when the teacher enters into what Schon (1983) describes as reflective conversation.

Reflective journals have proven to give teacher education students time to practice reflective thinking (Osterman & Kottkamp, 1993). As in many experientially based models, the use of case study and projects also has shown to increase reflective thinking. Kottkamp (1990b) conducted a study of the students in his reflective thinking course. This course used activities to enhance reflection such as: reflective journaling, role-play, case study, and writing and giving platform feedback. The platform activity asks students to write a statement that expresses their beliefs, values, and the assumptions that guide their beliefs on various topics. One-third of the students reported when surveyed that they experienced continued effects on professional practice from the process of reflection, introspection, self-monitoring, examination of beliefs, values, and discrepancy finding between intention and action. Students also indicated that reflection became an important, if not determining, guide for action. In all cases, students who took the reflection course ranked reflection more important than others who did not take the course.

Ross (1989) evaluated the effects of action research and activities to build knowledge base through development of socially constructed beliefs and multiple perspectives on students involved in a 5-year teacher preparation program. She found that as the students changed their perspectives, their reflective practice improved. The positive relationship of collective reflection and curriculum development has been found in the action research of DeLawter and Sosin (2001) and Koo (2000). DeLawter and Sosin (2001) point out that the results of their study demonstrate that
Acts of collective reflection transform social relations between pre-service teachers and teacher educators so that conceptions of time, culture, and curriculum are more likely to be critically perceived. Through the process of developing collective reflection about educational presuppositions, stereotypical biases, and human need on a global scale, pre-service teachers value insights, gain perspective, and envision themselves in multicultural classrooms of the 21st century. (p. 7)

A study by Clarke (1995) explored reflective practice of student teachers in practicum settings. Case studies of four student teachers were constructed to determine what student teachers reflect upon, what precipitates reflection, and what factors enhance or constrain reflection. Themes were determined from transcripts of conversations and writings. Clarke (1995) found that the students reflected on “ownership of one’s practice, the ways in which pupils learn, and seeing practice through the eyes of an experienced teacher” (p. 252). A variety of main and secondary precipitants were found for each reflective theme, and Clarke (1995) cautions,

Although it was relatively easy to identify events that precipitated framing and reframing, assigning accurate descriptors to capture the essence of those events was quite difficult. What at one point, might be regarded as intrigue, moments later could have been termed curiosity or what initially appeared to be conflict, at another point could have been termed dissatisfaction. (p. 255)

The descriptors that precipitated student teachers’ reflections for Clarke’s (1995) study include internal dissonance, frustration, dismay, surprise, conflict, contrast, curiosity, variance, dissatisfaction, and concern. When Clarke analyzed the four case studies in order to answer the final question, What factors enhanced or constrained the student teachers’ reflections? he found 46 factors which he grouped into categories as follows:

Student teacher related:
1. The use of video to review one’s practice
2. Being able to set the agenda for discussions about one’s practice
3. Interaction with peers (with and beyond the classroom)
4. Interaction with pupils (with and beyond the classroom)
5. Interaction with sponsor teacher (with and beyond the classroom)
6. A shift from technical problem solving to problem setting
7. Intense observation followed by thoughtful and sustained dialogue
8. The time availability for reflection
9. Making explicit past learning experiences
10. Familiarity with content

School advisor related:
11. The school advisor shift from reporting on to inquiring into practice
12. The school advisor trust, support, and confidence in the student's abilities

University related:
13. University method courses that explicitly link theory to practice. (p. 256)

Clarke (1995) concluded, “Access to a multiplicity of perspectives was prevalent in many of the reflective themes identified in this study” (p. 258). The role of the advisor is seen as someone who provides the student teacher with a variety of perspectives or opportunities for different perspectives allowing for the student to examine their own practice.

Teachers' Narrative Reflection

Narrative reflection is defined by Sparks-Langer and Colton (1991) as “the teachers' own interpretations of the events that occur within their particular contexts” (p. 1). This type of reflection research seeks to find meaning and interpretations with the context of the teachers' day. Action research has become a valuable way for teachers to tell their own stories (Colton, Sparks-Langer, Tripp-Opple, & Simmons, 1989; Elliot, 1985; Gore & Zeichner, 1991; Koo, 2000; Lampert, 1990). Canning (1990) discovered that when he provided affirmations, feedback, and questions to his student teachers, they were better able to reflect on their student teaching experiences. Sparks-Langer and Colton (1991) point out that there are three benefits derived from teachers' narratives.

First, these studies give us insights into what motivates a teacher's actions and an appreciation for the complexity of teachers' every day lives. Second, teachers' narratives provide us many detailed cases of teaching dilemmas and events. The
third, and most valuable benefit is the insight gained by teachers themselves as a result of this self-inquiry. (p. 12)

Action research has been particularly helpful in looking at the process of curriculum development and the role of the teacher (De Lawter & Sosin, 2001; Koo, 2000).

DeLawter and Sosin (2001) point out that

the pre-service teachers’ consciousness of stereotypes and world concerns is expressed but too often taken for granted in everyday pedagogical and curricular decisions. Developing awareness of global perspective by pre-service teacher is therefore of great importance to teacher education. (p. 6)

The action research conducted by DeLawter and Sosin (2001) provides documentation of the importance of collective reflection in the development of curriculum. Koo (2000) in her action research study also examined perceptions of teachers regarding curriculum development. She argues that curriculum development “should be recultured from an inside-out perspective and from a collaborative force”. (p. 47) Koo (2000) recommends that the following process be followed:

Critical reflections on basic assumptions of own values, attitudes and beliefs
Enabling to analyze and interpret curriculum work through multiple perspectives
Valuing individual’s voice from the frontier
Willingness to collaborate through negotiation
Engaging collaborative research in academic rigor and professional commitment. (p. 47)

Gore and Zeichner (1991) have been using action research since 1987 in the student teaching component of their elementary teacher education program. Action research is introduced to their students during the introductory course in teacher education and throughout the program. Gore and Zeichner (1991) believe that action research has benefits beyond those described by Sparks-Langer and Colton (1991). They see action research as occurring across all three of Van Manen’s domains of reflection: technical, practical, and critical with the goals of improving teaching practices and
improving the social conditions. Gore and Zeichner (1991) describe their social 
reconstructivist view of the purpose of action research in teacher education as follows:

Although we are interested in facilitating reflection about teaching practices and the 
elaboration of student teacher’s practical theories, we are also concerned with 
encouraging action research that contributes toward the elimination of the social 
conditions that distort the self-understandings of teachers and that undermine the 
educative potential and moral basis of schooling and teacher education. (p. 123)

Gore and Zeichner (1991) describe the place of action research in the student 
teaching curriculum at University of Wisconsin, as first being introduced in the 
introductory course in teacher education and then students throughout their program are 
encouraged to attend to issues of inequity and injustice in schooling and society, with a 
final practicum experience investigating teaching and its social conditions. In a case 
study review of 18 student teachers’ completed projects who were involved in the action 
research project at the University of Wisconsin Gore and Zeichner (1991) discovered 
little evidence that the critical reflective domain was considered by these students. They 
recommend that teachers need to provide additional direction in helping student teachers 
frame their action research topics more broadly. For example, instead of the topic being 
about their teaching, it should be about the social dynamics in the classroom and in the 
community. They also recommend that college teachers should do more to bring 
background social issues to the foreground for students to begin to deal with in a 
reflective approach. Gore and Zeichner (1991) point out:

Journals, readings, seminars, and supervisory conferences appear to be critical in 
broadening the scope of the inquiry. It is important that the supervisor talk frequently 
with each student about her or his project, so that appropriate resources can be 
provided throughout the process. (p. 133)

Two additional recommendations made by Gore and Zeichner that would improve 
critical reflection in teacher education programs utilizing action research include:
(a) providing more opportunities for students to see examples of reflective teaching by classroom teachers and (b) building more time for collaborative discussion of research projects by developing research communities within the schools in which the students teach. Gore and Zeichner (1991) point out that

as we begin to look at whole schools rather than individual classrooms as sites for student teaching, we have started to think about the need to broaden the learning community for student teachers beyond that which exists in the clinical supervision conference. (p. 134)

The teaching and fostering of reflection in teacher education programs is not without concerns regarding its ethical application. Boud, Keogh, and Walker (1998) agree that educational experiences where reflection is promoted can effectively facilitate learning in college classrooms, but they also are concerned that some misconceptions about reflection have led to unethical practices in colleges. They argue that application of reflection needs to be sensitive to the student and the environment because it is social and culturally context-specific. It is important to keep in mind the context, the process, and the learner when developing and implementing activities to enhance reflection in students. Kottkamp (1990a) points out that although we have many techniques that can enhance reflective practice, the decision to reflect is dependent upon whether the person wants to reflect.

The practitioner is in total control of deciding whether to reflect, and, as a result, whether and how to change his or her practice. We cannot reflect for anyone else. We cannot force anyone else to change behavior through reflection. Thus, although reflection is a powerful means for improving practice of those who wish to do so, it is not a panacea. We cannot use it to change the recalcitrant, the malicious, the unmotivated, or those who have given up on hope. (Kottkamp, 1990a, p. 199)

In summary, the research on reflection in teacher education provides us with information on how teachers process information and make decisions, and the factors that drive reflective thinking. These include modeling and teaching reflection, collaborative
reflection in curriculum analysis and development, inquiry activities, teacher narratives, action research, analysis and interpretation of multiple perspectives, and field experiences (DeLawter & Sosin, 2001; Gore & Zeichner, 1991; Koo, 2000; Osterman & Kottkamp, 1993; Sparks-Langer & Colton, 1991). In addition, the literature provides us with teacher narratives that share teachers’ interpretations of events within their particular context. These narratives serve to remind us that there is no one answer to how best to promote reflection. Osterman and Kottkamp (1993) point out that “reflective practice takes many different forms depending on factors such as setting, time framework, context, participants’ characteristics and objectives, and the personality of the facilitator” (p. 173).

**Reflection and Responsibilities of Educational Leaders**

There is increasing evidence that the way educational leaders reason about issues can have a significant effect on the learning community as a whole. Principals who use more sophisticated levels of cognition regarding their beliefs about knowledge and learning tend to demonstrate more democratic behavior with teachers and provide more support for new initiatives such as integrated curriculum (Arredondo & Rucinski, 1998; Reiman & Theis-Sprinthall, 1993). Sergiovanni (2001) believes that reflection helps principals to understand and inform their practice. He points out that reflective principals are “painfully aware of how context and situations vary, how teachers and students differ in many ways, and how complex school goals and objectives actually are; they recognize that despite difficulties, tailored treatments to problems must be the norm” (p. 46).

Two areas in the reflective literature as it relates to educational leaders are reviewed in this section: reflection and its relationship to problem solving (Kottkamp, 1990b; Leithwood & Stager, 1986, 1989; Leithwood & Steinbach, 1992; Short &
Reflection and Problem Solving of Educational Leaders

The relationship of problem solving to reflection is of particular interest to this study, since problem solving is a significant responsibility of educational administrators and therefore, a necessary component to any preparatory programs. There is general agreement that reflection is concerned with finding solutions to real problems (Adler, 1991; Calderhead, 1989; Cutler, Cook, & Young, 1989; Dewey, 1933). Churchman (1971) describes a particular kind of problem that is not easily described and difficult to determine solutions as ill-structured. The level of complexity in the problem will determine what strategies are employed and when they are employed.

King and Kitchener (1994) suggest that when an individual attempts to solve an ill-structured problem their epistemological assumptions play a role in the way they problem solve. They indicate that reflective thinking occurs only when people are engaged in thinking about problems that involve uncertainty.

Reflective thinking is called for when there is awareness of a real problem or when there is uncertainty about a solution. Reflective judgments are based on the evaluation and integration of existing data and theory into a solution about the problem at hand, a solution that can be rationally defended as most plausible or reasonable, taking into account the sets of conditions under which the problem is being solved. (King & Kitchener, 1994, p. 8)

Studies that look at the technical skill of school administrators provide literature on descriptions of typical and effective principal problem-solving behaviors (Hall, Rutherford, Hord, & Huling, 1984). Results from these studies provide information on
what solutions seem to work best within a certain context, but not on the process itself.

Leithwood and Stager (1989) point out that

results of this research, when focused on effectiveness, provide examples of solutions to administrative problems that have appeared to work well in particular contexts. However, the results reveal little or nothing about how actions were selected or created and treat the administrator’s mind as a black box. (p. 127)

The decision-making emphasis in school administration began with Simon (1957) who utilized social service knowledge and the rationale aspect of education administration decision-making in the explanation of the problem-solving process. His view of problem solving marked the beginning of further exploration into the nature of the problem, the contextual situation, and the values of the problem solvers (Hayes, 1981; Leithwood & Stager, 1989). Leithwood and Stager (1989) explored the final product and the non-rationale part of problem solving. They screened 22 principals utilizing two screening instruments: colleague assessment and The Principal Profile (Leithwood & Montgomery, 1986). From the screening, six principals met the criteria for “expert principal” and 16 were considered “non-expert.” All principals were given a problem and asked to solve the task, reflect on their problem-solving process and the factors that influenced it, and then to indicate how they selected which problem they responded to as priority. Leithwood and Stager (1989) found that differences in problem solving between expert and typical principals were similar when the problem was well defined and structured, but decidedly different when they were faced with ill-structured problems.

This research study by Leithwood and Stager (1989) indicated that expert principals used more basic principles to define the specific nature of a problem and that they could detect similar and different features from past situations of a problem situation during problem interpretation more quickly than non-expert principals. Leithwood and Stager (1989)
termed these problem-solving capabilities, flexible social cognition. Flexible social cognition occurred when the principals distanced themselves from the superficial features of a problem and were able to clarify their beliefs, principles, and values, and use them explicitly in problem solving. Leithwood and Stager (1989) describe the capability of responding flexibly as:

(a) adjusting interpretations in response to situational features;
(b) taking control of their thoughts and their plans;
(c) seeing multiple alternatives for interpreting the same event or outcome; and
(d) changing their own knowledge repertoire by adding new experiences and by reworking cherished beliefs, values, and goals. (p. 155)

Schon (1987) also indicates that experts tend to interpret problems on a more abstract level, and are better able to integrate multiple sources of information in a context.

Osterman and Kottkamp (1993) interviewed district administrators regarding collaborative reflection and problem solving. Each administrator reported that an important benefit to collaborative reflection was the multiple perspectives they obtained, which in turn helped them to have more information about alternative strategies for problem solving. Osterman and Kottkamp (1993) point out that “the process of reflective practice expands the pool of resources available to any individual. By bringing more people into the process, it also provides multiple perspectives” (pp. 182, 183).

Leithwood and Steinbach (1992) explored a method of teaching problem solving utilizing 38 educational administrators, 22 who received a 4-day instructional program on problem solving. All 38 volunteers took pre- and post-tests which required them to provide written solutions to two hypothetical case problems. Leithwood and Steinbach (1992) found that the group that had the problem-solving training showed significantly greater expertise in their thinking related to the interpretation of the problem, the goals set

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for solving the problems, and their understanding of the importance of anticipating and planning for handling of possible constraints. (p. 341)

The increase in problem solving was attributed to the value of using small group collaborative work on authentic problems, modeling of effective processes, feedback, and a framework of components and subskills to cue the use of the problem-solving process. The importance of collective reflection is supported in a nursing research study where the presence of reflection was found to be higher in student nurses in their clinical experience when they functioned as pairs (Van Horn, 1999).

Journal writing in educational leadership students was found to have significant positive change in students' complexity of thinking about problems and their resolutions to the problems when they were involved in a reflective writing process (Short & Rinehart, 1993). Ten students enrolled in an Educational Leadership doctoral program participated in a yearlong leadership seminar that centered on developing the reflective practitioner. Students kept a reflective journal throughout the year and entered a critical incident that required action on a weekly basis. Student journal entries were analyzed at the end of a three-semester period using the Sparks-Langer et al. (1990) framework. This framework provides levels of language and thinking in a hierarchical fashion. Level 1 is the lowest level of reflective thinking and a student that would score a 1 on their journal entry would have no descriptive language of an event, while level 7, the highest level of language and thinking in this framework, would have an explanation of an event with consideration of ethical, moral, and political issues. Results demonstrated that students used higher levels of reflective language in the spring quarter indicating that students were reflecting on underlying principles or theories. The journal entries were also analyzed by identifying themes for the events. Students tended to progress from
consideration of everyday events in the fall to consideration of complex events in the spring.

In summary, the literature strongly suggests that there are some strategies that are effective in increasing reflective practice and problem solving in school leaders. The use of small group collaboration on authentic problems, modeling of effective processes, and feedback all contributed to better problem solving in the educational leaders studied.

Reflection and Staff Supervision of Educational Leaders

The Connecticut Standards for School Leaders (Connecticut State Department of Education, 1999) emphasizes the importance of reflection in supervision by stating that school leaders should "regard reflection as a commitment to promote opportunities for ongoing teacher reflection" and "use the evaluation process to promote teacher reflection and growth" (p. 6).

Fostering reflection in all members of the learning community is an important leadership supervisory skill if we in education are going to realize the goal of creating learning communities. Reflection will need to be valued and practiced by all members, especially the educational leader. Reiman and Theis-Sprinthall (1993) suggest, "In learning organizations, new types of expectations are placed on the adults who inhabit them, expectations that demand something more than mere behavior, the acquisition of specific skills, or the mastery of particular knowledge" (p. 179). Educational leaders in such organizations will need to provide opportunities for staff reflection and to model reflective practices. Osterman and Kottkamp (1993) provide further insight into the connection between reflection and supervision by pointing out that, "in essence, good supervision and reflective practice are interchangeable; being an effective facilitator
requires good supervisory skills” (p. 56). Glickman’s (1990) Developmental Supervision Model includes a goal to increase teachers’ ability to develop higher stages of reasoning and thought. He believes that teachers who are more reflective and self-directed will be better able to solve their own instructional problems and meet their students’ educational needs.

Siens and Ebmeier (1996) conducted a study with 120 classroom teachers over an 8-week period. The experimental group received a clinical supervision program utilizing the Developmental Supervision Model developed by Glickman and Gordon (1987), while the control group received no special treatment other than the regular supervision program used in their buildings. Teachers in the experimental group were assessed regarding their level of functioning on a particular curricular or instructional concern. The experimental group then received prescribed collaborative supervision from their peers who were trained in the Developmental Supervision Model, while the control group continued with the typical supervision that was provided in their building. Responses from interview questions given to both groups were analyzed utilizing a scheme developed by Sparks-Langer et al. (1990). Results indicated that supervisory coaching increases reflective thinking. Siens and Ebmeier (1996) state, “Certainly the effects noted in this study illustrate the power of peer collaboration and coaching” (p. 316).

Nolan and Huber (1989) in a review of the empirical research on supervision and reflection found that there are five supervisory behaviors that are most important in encouraging reflective behavior. These behaviors include (1) “the supervisor reflecting in action, (2) encouraging teacher autonomy, (3) using data as evidence for salient teaching
patterns, (4) helping teachers develop the skills to interpret the data collected on their teaching, and (5) allowing them to play a major role in interpreting the data” (p. 141).

The California School Leadership Academy (1992) provided a statewide training program to 1,500 school administrators to improve their instructional leadership skills. This program required a 3-year commitment from participating school administrators and emphasized areas of school organization and culture such as the principal’s ideas and attitudes, the principal’s actualized behavior and practices, school leadership structures, school level policies, teacher beliefs, reflective practices, and teacher classroom practice. Marsh (1992) studied the results of this training program and found that most principals who completed the program were efficient managers and doing some pieces of instructional leadership. Approximately 15% of the principals demonstrated both efficient management and strong instructional leadership skills. Marsh (1992) stated that “they held integrated views of instructional leadership, reflected about instructional issues, and had brought substantial change in their schools” (p. 404). Although this program emphasized reflective practices and saw improvement of reflective practices in the participants, most graduates of the program discontinued their reflective practice after the program.

Educational leaders must also provide leadership in the development of curriculum and instruction as part of their supervisory responsibilities (Fitzharris, 1999; Hoachlander & Beltranena, 2001; Koo, 2000). Hoachlander et al. (2001) in a review of the research on student achievement and their connection to educational leadership concluded that “a strong educational leader (master teacher, principal, superintendent, or school board member) skillfully can define, manage, and improve curriculum and
instruction” (p. 41). There has been a growing realization that the development of curriculum should come from the school personnel rather than be dictated to them. Fitzharris (1999) points out that “teachers must be empowered to more effectively design their own curriculum and to move from the position of curriculum conveyer to curriculum designer” (p. 1). The development of curriculum requires an understanding of multiple perspectives and the ability to reflect on these perspectives in order to make informed decisions. Koo (2000) states, “Improvement of curriculum practice can be achieved by practitioners emancipating and empowering themselves through spirals of reflection, interpretation and action which use an iterative mix of narratives and conversations” (p. 5).

In summary, there is some research that would indicate that reflective educational leaders are better able to support continued growth and learning in teachers and in themselves, and thus able to create a positive effect on many elements of the school environment including curriculum, instruction, and school culture. Nolan and Huber (1989) argue that “reflection is the driving force behind successful clinical supervision programs—the programs that make a difference in the lives and instruction of the teachers who participate in them as well as in the lives of the students they teach” (p. 143). There is also evidence in the research that there are supervisory behaviors that can and do encourage reflective behaviors (Nolan & Huber, 1989), such as reflection-in-action, encouraging teacher autonomy, and the use and interpretation of data.

**Reflection and Preparation of Educational Leaders**

There has been a recent effort on the part of educational leadership programs to move away from the theory-driven non-educational studies of the past to better match the
training with the skills needed in the job. Studies of the traditional educational leadership program have found that more is needed in the content and process of the educational programs provided (Begley, 1999; Marsh, 1992). “Recent efforts to align training and actual practice are being reflected by an emphasis on the development of group processing skills, collaborative leadership styles and communications skills, participatory decision making, consensus building, reflective thinking and mentoring” (Yee, 1997, p. 2).

This new philosophy has led to changes in content and pedagogy in educational leadership programs and increased discussions and activities to enhance reflection in their students. New approaches include clinical/field experiences, mentor/mentee relationships, direct instruction on reflective thinking and action, and problem-based learning. Research on new innovative leadership development programs has found that participants report changes in their collaborative leadership behaviors such as leading by building teams, sharing information with others, and decision making. In addition the students enrolled in these programs indicate positive changes in problem-solving behaviors, such as problem analysis before action and relevant data gathering before decisions (Begley & Uhl, 1995; Ekholm, 1992; Hallinger, 1992; Krovetz, 1995). However, Yee (1997) cautions us that “despite the growth in leadership development programming, little systematic research has been conducted on either the operation or outcomes of these programs. Policy makers have concentrated available resources for services to clients rather than on the evaluation of programs” (p. 1).

The National Commission on Excellence in Educational Administrators indicated that there was a lack of collaboration between school districts and universities regarding
preparation of educational leaders. One of their recommendations was for colleges and universities to develop educational leadership internships (Jackson, 2001). The importance of field experience has been in the educational leadership literature since 1976 when Cunningham (1976) discussed clinical education as the process of learning in field settings through application, feedback, appraisal, and reapplication. The need to connect acquiring of knowledge with utilization of that knowledge has resulted in a number of new and innovative field experiences in educational leadership. Gousha (1988) recommends a collaborative field-based approach to educational administration programs, and Paulter (1991) supports the value of structured clinical experiences for educational leadership students and suggests a three-level experiential program: aideship, internship, and associateship. In a survey study by Lester (1993), 80 administrators were asked to identify skills an administrative candidate should possess in the year 2000 and how the colleges could assist. These administrators overwhelmingly indicated the importance of an internship. Kentucky has embraced a statewide beginning-principal program to upgrade the quality of educational leadership in the schools. This program has a structured internship for all educational students prior to being hired as a principal (Prickett, 1990). Tarleton State University developed an innovative educational leadership program that prepares principals to lead learner-centered schools. This program includes assessment laboratories, internship and residency, instructional seminars, and mentorship teams (Reaves, 1995). Alaska also embraced a statewide program for educational leaders that involves a yearlong internship with mentor contact for a year after the internship (Oldaker, 1995).
To enhance field-based experience learning, many educational leadership programs are utilizing standards and new assessment techniques such as portfolio assessment in their internship programs. Wilmore and Erlandson (1995) used standards-based portfolio assessment in a 12-week educational leadership internship program and participants indicated that the portfolio and standards enhanced their growth and experience and gave them greater focus on developmental skills. North Carolina’s principal preparation program includes extended internship, simulations, and leadership portfolios. Their redesigned internship includes shadowing, participation in practice, advocacy, and critical reflection (Williamson & Hudson, 2000).

Educational leadership programs are also looking at the intensity of the field experience and some positive effects have been found when internships are full time. Bradshaw, Perrault, McDowell, and Bell (1997) surveyed the participants in a full-time internship and found that they were satisfied with the experiences they gained and were better prepared for entry-level administrative positions than their part-time counterparts. They also take on more challenging assignments, especially in the areas of student discipline and teacher leadership.

White and Lester (1987) surveyed 119 educational leadership students who were involved in an internship program. They discovered that although the students were generally positive about their internship, they indicated that more time and greater definition of their role would have improved the experience. Use of mentor/mentees and structured supervision and guidance have been used more recently to strengthen the field experience. Browne-Ferringo and Muth (2001) studied educational leadership students in internship programs and they point out that the readiness of these students to assume a
principalship depended upon proper leadership experiences, encouragement from and mentoring by practicing principals, and personal issues. When leading school administrators and educational leadership theorists in the United States and Venezuela got together to develop a model of an educational leadership program, one of the components of the program was mentoring of junior administrators (Serafin & Thompson, 1993).

Based on the theories of Reiman and Thies-Sprinthall (1993) who argue that cognitive developmental growth, given appropriate conditions, continues into adulthood, the mentor/mentee interaction has been explored by Arrenondo and Rucinski (1998) to determine if it fosters changes in cognitive structures. Using techniques recommended by Reiman and Thies-Sprinthall (role-playing, reflection, balance, continuity, support and challenge), Arrenondo and Rucinski matched 11 graduate students enrolled in an educational leadership program with mentors. Pre-intervention assessments of moral reasoning and epistemological beliefs were administered, and each pair engaged in a semester-long relationship in which the mentor observed the mentee's practice and engaged him in reflective conversation. The mentee then reflected on the conference using a structured journal format in which the mentor responded using a support/challenge technique taught as part of the program. Post-intervention assessments were the alternative forms of the Defining Issues Test and the Epistemological Questionnaire given as pre-intervention assessments. Journal entries were also examined for changes in cognitive development over the time of the study. The journal data provided information that the participants in the study did learn the complex-interactional support/challenge process within the structure of a regular graduate-level university.
course. Mentors and mentees alike described the structured interactions as having a tremendous impact on their thinking. The relationship of mentor/mentoring with reflection was very positive as indicated by the journals. Arrenondo and Rucinski (1998) found that “one of the more important overall responses to the support/challenge process was the apparent change in levels of reflections experienced by about two-thirds of the mentors and several of the mentees” (p. 323). Interestingly, the pre-test and post-test results from the Defining Issues Test and the Epistemological Questionnaire did not support changes in cognitive structures among the mentors or the mentees. The researchers believe this lack of expected growth outcomes could have been due to the small sample size.

Direct instruction in reflection has also been a recent addition to educational leadership programs that has resulted in positive results. The Peer-Assisted Leadership Training Program (PAL) developed by Kottkamp (1990a) conducted a 10-year longitudinal study at Rutgers and Hofstra universities. This study looked at the importance of reflective-thinking training programs on graduate educational leadership students. Results indicated that there was an increased general reflectivity, introspection, and enhanced self-understanding. Reflection became a pervasive operational mode and a guide to action which affected specific areas of action such as: (a) greater awareness and openness to ideas, views and beliefs of others, (b) more careful monitoring of their own beliefs during action, (c) greater willingness to stand up for their convictions, (d) insights leading to broad perspective shifts, (e) help with job searches and discussions, (f) effects on personal life, (g) application of reflection to others, (h) reflection took on greater meaning and usefulness. The PAL program also discovered that when school principals
became more reflective, they saw patterns in their behavior and were better able to analyze present situations and clarify their own goals (Barnett, 1985).

The Far West Laboratory for Educational Research and Development in San Francisco incorporates reflection as a key ingredient in the training process. Findings from research on this program revealed that reflective interviewing and shadowing/observing were considered by the principals to be advantageous in helping them reflect on their action (Barnett, 1991). Barnett (1991) stated that "allowing trust to develop between partners, being shadowed, and interviewing another principal, becoming familiar with the framework and building models of leadership behavior all combine to create an atmosphere where reflection, openness, and professional growth can occur" (p. 283).

In summary, educational leadership programs are extending their programs to include field experience, direct instruction on reflective skills, mentoring/mentee relationship, and standards-based portfolio assessment. Yee (1997) stated, "Leadership programs must provide more frequent and significant opportunities for authentic skill practice with expert feedback when skills are a focus of training" (p. 6). Hallinger (1992) indicated, "This type of high-risk, high-return activity requires support and assistance in order to obtain the full impact on the individual and the organization" (p. 312).

**Reflective Judgment**

The Reflective Judgment Model developed by King and Kitchener (1994) is an adult cognitive developmental model that documents reasoning ability about complex problems. This theoretical approach is exemplified in the epistemological theories and stage development research of Piaget (1967), Kohlberg (1969), Perry (1970), and King
The Reflective Judgment Model views the process of intellectual development as sequential movement through cognitive structures that form seven hierarchically arranged stages of reasoning. The first three stages are categorized as pre-reflective thinking, stages 4 and 5 are categorized as quasi-reflective thinking, and stages 6 and 7 represent the highest reasoning skill, which are termed reflective thinking. At each stage the individuals' view of knowledge and concept of justification of beliefs are different from the previous stage. Each stage is built upon the cognitive skills in the previous stage. Levels of reasoning in this model are thought of an emerging skill that increases in frequency as the individual develops and which decreases as it is replaced by even more successful and sophisticated strategies. The model indicates that most people go through the same stages in the same sequence, but not all people attain all stages. These stages are described in more detail in the theoretical framework section in chapter 1 of this document.

The Reflective Judgment Model focuses explicitly on the relationship between epistemology and judgment at each point in the developmental sequence. This philosophy is the foundation of the Reflective Judgment Model, which emphasizes the importance of the person's epistemological assumptions in his or her ability to use high levels of reflective judgment. Kitchener (1983) argues that there has been support for this belief from researchers such as Bassechens (1980), Broughton (1978), Gibbs (1977), and Labouvie-Vief (1982). Kitchener (1983) states, “These investigators argue that changes in assumption about knowledge in the epistemic sense underlie the ability of adults to deal with conflicting ideas and systems in considering issues of logic, ethical choice, and reality” (p. 228). While some of these theories and models acknowledge cognitive and
metacognitive processing (Flavell, 1979; Perry, 1970), the Reflective Judgment Model emphasizes as equally important the epistemological assumptions in the solving of complex problems and has identified seven distinct steps of epistemological stage-related development. Kitchener (1983) states,

Epistemic assumptions provide a framework through which individuals understand the nature of such problems and define and choose acceptable strategies or solutions. The goal of understanding how adults monitor and thoughtfully choose or create solutions to ill-structured problems will not be achieved if we do not go beyond the current concept of metacognition and begin to study how individuals acquire knowledge about knowledge in the epistemic sense and the way that knowledge leads individuals to formulate a problem and to understand the nature of solutions available for it. (pp. 230-231)

King and Kitchener (1994), authors of the Reflective Judgment Model, believe that epistemic assumptions affect the way individuals resolve ill-structured problems and that true reflective thinking occurs only when people are engaged in thinking about problems that involve uncertainty. Dowling (1989) indicates that there are problems with the critical thinking concept and measures of the Watson-Glaser Critical Thinking Appraisal because it offers a limited range of scores for assessing and the behavior measured is not from any theoretical framework of human cognition. He states,

A promising new approach from the field of cognitive development—the reflective judgment model—provides an alternative that may remedy these deficiencies and secure a promising future of debate in higher education. The model has a clear foundation in cognitive developmental theory, philosophy, definitions, and theorization, and has been validated by a growing body of empirical data. It suggests that the skills it measures (which resemble those practiced in academic debate) are teachable. The model deals with problem-solving skills most useful to the real world and which develop in late adolescence and young adulthood—the age of interest to debate educators. (p. 1)

Reflective judgments are made by examining and evaluating relevant information, opinion, and available explanations (the process of reflective thinking), and then constructing a plausible solution to the problem at hand, acknowledging that the solution
itself is open to further evaluation and scrutiny. Students with more mature reflective
judgment must not only be able to be open-minded, introspective, and able to accept
responsibility for their decisions and actions, but also develop the ability to view
situations from multiple perspectives. They also must have the ability to search for
alternative explanations of events and the ability to use evidence in supporting or
evaluating a decision or position. This feature of the model is particularly compelling for
this study, as the ability to solve ill-structured problems is a key responsibility of
educational leaders, and this model focuses on more than just the solving of problems,
but on the solving of open-ended controversial problems.

Measurement of Reflective Judgment

Individuals’ ability to reason about ill-structured problems based on the Reflective
Judgment Model (King & Kitchener, 1994) has been studied using the Reflective
Judgment Interview and The Reasoning about Current Issues Test. The Reflective
Judgment Interview is a semi-structured interview that documents reasoning according to
the Reflective Judgment Model. This measurement tool, developed by King and
Kitchener (1994), has been used in the past 20 years in over 33 longitudinal and cross-
sectional studies with more than 1,700 subjects by these authors and others (Bowen,
1989; Brabeck, 1983; Jensen, 1998). King and Kitchener (1994) conducted a meta-
analysis of these studies, the results of which will be discussed in the following sections
of this chapter. A second instrument to measure reflective judgment was developed by
Kitchener and Wood in 1996 (Wood & Kitchener, 2000). The Reasoning about Current
Issues Test is a two-part paper-and-pencil measure used to assess students’ ability to
reason ill-structured problems based on the Reflective Judgment Model. This instrument
has been used in over seven studies with over 8,537 subjects (Wood et al., 2001). The Reasoning about Current Issues Test is the instrument used to measure reflective judgment in the current study, further information about this tool is discussed in greater detail in chapter 3. In the following sections of this chapter reviews research conducted regarding the development of reflective judgment, and reflective judgment and related variables.

Development of Reflective Judgment

More than 1,700 individuals representing a wide variety of student and non-student subgroups have participated in the Reflective Judgment Interview in longitudinal and cross-sectional studies (Bowen, 1989; Brabeck, 1983; Glatfelter, 1982; King, 1977; King, Kitchener, Wood, & Davison, 1989; King, Kitchener, & Wood, 1990; Kitchener, 1977; Kitchener & King, 1981; Lawson, 1980). These studies provide extensive information on the development of reflective judgment in adult students and non-students. King and Kitchener (1994) conducted the longest running study, a 10-year longitudinal research that traced the development of reflective thinking in 80 individuals from 1977 to 1987. Most of the subjects were between 16 and 28 and were involved in some form of formal education during the time of the study. These 80 individuals were originally tested in 1977 using the Reflective Judgment Interview, a measure of reflective judgment; Terman's Concept Mastery Test, a measure of verbal ability; and Rest's Defining Issues Test, a measure of moral judgment in the first testing. Loevinger and Wesler's Sentence Completion Test, was given at the first, second, and third testings only. The Myers-Briggs Type Indicator, a measure of psychological type, was given at the fourth testing only. Retesting occurred in 1979 with 74% of the original sample; 69%
of original sample was retested again in 1983; and in 1987, 70% of the original sample was retested for the last time. The sample included students in three different levels of education: high-school juniors, college juniors, and doctoral students. Consistent patterns of increasing reflective judgment mean scores on the Reflective Judgment Interview were found for all three groups at each subsequent testing with the exception of the doctoral group that stayed stable in the years between 1979 and 1987. In no case was there a significant decline in scores over time. The results document that the development of reflective thinking as measured by the Reflective Judgment Interview evolves slowly and steadily over time among individuals engaged in formal education programs.

In viewing the individual growth patterns of the 38 students who participated in all four testings, 26 of them (68%) had scores that either increased or remained stable between each of the three testing intervals. Eleven of the remaining 12 students had only one exception to this pattern. King and Kitchener (1994) see this upward change in Reflective Judgment Interview scores by a large majority of the participants in the 10-year study as a pervasive pattern in the individuals' ability to improve their reflective judgments over time.

Other longitudinal studies have been conducted to determine if Reflective Judgment Interview scores in students would increase or decrease or stay the same over a period of time (Brabeck & Wood, 1990; Polkosnik & Winston, 1989; Sakalys, 1984; Schmidt, 1985; Van Tine, 1990; Welfel & Davison, 1986; Kitchener, King, Wood, & Davison, 1989). King and Kitchener (1994) provide a summary of 12 studies with a total of 241 individuals, most of who were tested twice, at intervals from 3 months to 4 years. Three of these studies tested a total of 63 high-school students. Six studies tested a total
of 167 undergraduate college students, and one study tested 15 doctoral students. In every sample tested, the scores either stayed the same or increased over time. Additionally, in all but two samples the mean score increased significantly for all groups tested at 1-4-year intervals. These studies support results from the King and Kitchener 10-year longitudinal study that the ability for students to make reflective judgments changes developmentally over time.

Wood (1993) also examined the variability of scores across the stages of reflective judgment by conducting a secondary analysis of Reflective Judgment Interview scores from 15 studies. He measured the proportion of time each stage was represented in an individual’s ratings across the four Reflective Judgment Interview problems. His analysis of the scores indicated that the development of reflective judgment unfolds gradually over time with higher-stage usage preceded by lower-stage usage and regression of reflective judgment stages occurring infrequently. He also found that individuals who scored at higher levels of reflective judgment evidenced reasoning at a wider variety of stages. Overall, the stage utilization for stages 5 (quasi-reflective) and 6 (reflective) covers a wider range of scores than that for stages 3 (pre-reflective) and 4 (quasi-reflective). He characterizes the stages as waves across a mixture of stages with the peak being the most commonly used set of assumptions. “While there is still an observable pattern to the movement between stages, this developmental movement is better described as the changing shape of the wave rather than as a pattern of uniform steps interspersed with plateaus” (King & Kitchener, 1994, p. 140). The fact that people use multiple ways of reasoning when dealing with ill-structured problems has implications with regard to teaching reflective thinking skills at the level of proximal
development, since a teacher may see variability in a student’s reasoning, making it difficult to determine baseline. Kroll (1992) believes that educational interventions should teach about and model higher-stage reasoning even when that is not the type of reasoning they may expect students to produce themselves.

The data from Wood’s (1993) meta-analysis and the King and Kitchener 10-year longitudinal study provide insight into the relationship between reflective judgment changes and the time between testings. The degree to which reflective judgment changes over time is strongly related to the duration of time between testings. The two smallest increases in reflective judgment were found when retesting occurred within 3 or 4 months (Polkosnik & Winston, 1989; Sakalys, 1984). The greatest increase in reflective judgment was in the longitudinal study when students were retested in 10 years (King et al., 1990). In each of the re-testings, the Reflective Judgment Interview mean scores remained constant or increased 84% to 100% of the time. Overall, studies on reflective judgment that allowed a 1-year period between testing (Brabeck & Wood, 1990), a 2-year period between testing (Van Tine, 1990), a 3-year period (Schmidt, 1985), and a 4-year period (Welfel & Davison, 1986) obtained significant mean differences in Reflective Judgment Interview scores.

Although the data from these studies appear consistent, alternative explanations to the increase in reflective judgment scores have been explored. Researchers explored the possibility that the increase in reflective judgment scores over time in these studies could also be attributed to selection effect. Perhaps students who choose to continue in a long-term study had greater skills, interest, and motivation regarding reflective judgment. Several studies assessed whether this selection effect occurred by comparing the scores of...
students who dropped out of the study to those of students who returned for retesting. These comparisons indicated that the differences between dropouts and ongoing student Reflective Judgment Interview scores were non-significant (Kitchener et al., 1989; Schmidt, 1985). Hence, the selection effect appeared to be minimal.

A second explanation of the increases in reflective judgment over time is that the Reflective Judgment Interview scores reflect the practice effect. To determine the degree to which the familiarity with the standard Reflective Judgment Interview problems accounted for higher scores between testing, students involved in the 10-year study were given a new problem on the Reflective Judgment Interview. No differences were found in student scores between problems.

The development of reflective judgment was also studied when The Reasoning about Current Issues Test was used as the measurement of reflective judgment. Wood et al. (2001) examined data drawn from seven longitudinal and cross-sectional studies from undergraduate and graduate populations. Their analysis of the data indicated that students' ability to reason at higher levels of reflection about ill-structured problems continued to develop over time, similar to the findings from the studies utilizing the Reflective Judgment Interview as the measurement tool.

In summary, findings from a number of longitudinal and cross-sectional studies using the Reflective Judgment Interview and Reasoning about Current Issues Test offer additional evidence that development in reflective judgment occurs slowly and steadily over time and that the increases in scores are not an artifact of selective participation or practice. Further, these studies show that stability and development are much more common than regression in reflective thinking (King & Kitchener, 1994).
Reflective Judgment and Related Variables

Forty longitudinal and cross-sectional studies of reflective judgment looked at a variety of experiential, educational and psychosocial factors that might contribute to the development of reflective judgment in students and non-students (Bowen, 1989; Brabeck, 1983; Glatfelter, 1982; Jensen, 1998; King, Wood, & Mines, 1990; Kitchener & King, 1981; Kitchener, Lynch, Fischer, & Wood, 1993; Lawson, 1980). This research is reported in the following sections of this chapter.

Educational Level and Reflective Judgment

Wood (1994) examined data from 25 studies consisting of 334 subjects and four longitudinal studies of reflective judgment that utilized the Reflective Judgment Interview. The data confirmed results of previous studies that Reflective Judgment Interview scores increase slowly but steadily from high school to college and then again from college to graduate school and that a substantial difference in reflective judgment reasoning across educational levels does exist.

Reflective thinking among high-school students was explored in five studies. Among high-school students, the average Reflective Judgment Interview score is 3.19, the pre-reflective stage of the Reflective Judgment Model. Mean scores of high-school students range from mid stage 2 to upper stage 3 as students progress from Grades 9 through Grade 12, indicating epistemological assumptions that certain truth is ultimately attainable but that in some areas it is not currently available. When faced with uncertainty, they often become confused and frequently have difficulty relating evidence to their opinion and fall back on believing what they want to believe. In some cases, they also demonstrate the belief that authorities have the truth and they rely on authorities to
inform them when there is a dilemma. When interpreting the high-school student scores
King and Kitchener (1994) caution that the scores summarized are probably not
representative of high school students across the United States. Of the 11 samples, 7 were
from studies that sampled academically talented high-school students. An interesting
factor in these studies is that even with a high academic ability sample, the mean score
for high-school seniors in these studies was almost half a stage lower than the mean score
for college freshmen.

Undergraduate college students have been tested in 20 cross-sectional studies
\( N=946 \) utilizing the Reflective Judgment Interview format (Bowen, 1989; Brabeck,
1983; Evans, 1988; Glatfelter, 1982; Hayes, 1981; King et al., 1986; King, Wood, et al.,
1990; Kitchener & King, 1981; Kitchener et al., 1993; Nickerson, 1991; Polkosnik, 1985;
Sakalys, 1984; Schmidt, 1985, Shoff, 1979; Strange & King, 1981; Welfel, 1982). King
and Kitchener (1994) provide a summary of how the reflective judgment scores differ by
age by averaging the Reflective Judgment Interview mean scores from these studies.
Freshmen in these samples generally score in stages 3 (pre-reflective) and 4 (quasi-
reflective) of the Reflective Judgment Model and the overall mean score across all
freshmen in these studies \( N=329 \) was 3.6. The mean score for seniors tested in these
studies \( N=369 \) was 4.0, which is significantly higher than the freshman average. All
seniors demonstrated quasi-reflective, stage 4 reasoning in contrast to the three fourths of
the freshmen who reasoned between stages 3 and 4. The epistemological assumptions
made by the seniors indicated an acknowledgment that uncertainty is not just a temporary
condition of knowing and the systematic use of evidence does help to support their
judgment.

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In seven cross-sectional studies testing 196 graduate students, results have indicated that these students have consistently earned the highest Reflective Judgment Interview mean scores of any of the students tested (Brabeck, 1983; King, Wood, et al., 1990; Kitchener & King, 1981; Kitchener, Lynch, Fischer, & Wood, 1993; Kitchener & Wood, 1987; Lawson, 1980). Results indicate that master’s and first-and-second year doctoral students used reasoning consistent with stages 4 and 5 (quasi-reflective), while advanced-level doctoral students reasoned at stages 5 (quasi-reflective) and 6 (reflective). Reflective Judgment Interview mean scores for beginning graduate students averaged 4.6, while advanced graduate students averaged 5.3 (King & Kitchener, 1994). Overall these advanced-level students scored almost three-quarters of a stage higher than the early-level graduate students. In general, the graduate students in these studies were able to offer a balanced perspective on an ill-structured problem as presented in the Reflective Judgment Interview. At the advanced level they were able to explain how they arrived at a judgment about an issue, a judgment they were able to defend because it was the most plausible, or the best interpretation of the available evidence.

Research using the Reasoning about Current Issues Test has shown that freshmen differ from seniors in Reflective Judgment on the Reasoning about Current Issues Test as they did on the Reflective Judgment Interview. Participants in these studies were obtained from two nationally funded studies as well as several smaller studies of target populations. Data were collected over 5 years on a sample size of 6,950 undergraduate and graduate students. Students were given the Reasoning about Current Issues Test and data were compared according to institution and educational level. Data from the beginning medical and graduate student samples were markedly higher than those from

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the undergraduate populations. Graduate students appeared to reason in a substantially
different and higher level of reflection than undergraduates (Wood et al., 2001).

Similar to the studies using the Reflective Judgment Interview, educational
differences in these studies using the Reasoning about Current Issues Test persisted after
adjusting scores for a variety of third variable explanations involving entering academic
aptitude, high-school core grade point average, sex, ethnicity, and age. Research has
consistently shown that academic aptitude and verbal ability do not account for observed
educational level differences in studies when participants are matched on either one of
these variables (King & Kitchener, 1994). Other cognitive ability and personality
measures have been investigated as third variable explanations for educational level
differences in Reflective Judgment Interview Scores. Differences exist after adjusting for
the effects of Formal Operations (King, 1977), critical thinking, (King, Wood, et al.,
1990), ego development and moral reasoning (King et al., 1989). Differences also existed
after adjusting scores for Need for Cognition, a general enthusiasm for thinking about
issues.

King and Kitchener (1994) do caution the reader that while we have aggregated
scores within educational levels, we recognize that there is a great deal of variability
between samples (for example, some control for variability of academic ability and
some do not) and that comparisons between educational groups, thus constituted
should be made cautiously. (p. 163)

With this said, generally the research indicates that educational level is a very
strong contributing variable. The degree of exposure to the educational classes and
programs, the ability to master academic demands necessary for advancement to the next
academic level, and the effectiveness of the educational programs are factors which King
and Kitchener (1994) believe help to explain increases in reflective judgment as students progress through the educational levels.

Educational Experiences and Reflective Judgment

Research on educational experiences and reflective judgment found that when practice and contextual cues are provided within an educational program there is also an increase in reflective judgment in students. In a study by Kitchener et al. (1993) 156 students ages 14-28 were tested for reflective judgment. Two thirds of the students were tested using only the Reflective Judgment Interview. The remaining one third of the students were given additional practice and the Prototypic Reflective Judgment Interview. This interview was designed to provide them with support for optimal level reflective judgment responses. Both the control and experimental groups were administered the tests twice, 2 weeks apart. The students who were given practice and the prototypic reflective interview scored significantly higher in reflective judgment than those who were only given the Reflective Judgment Interview. Kitchener et al. (1993) state “People show higher levels of competence in reflective judgment after practice and even higher levels when there is contextual support during testing” (p. 905). King and Kitchener (1993) believe that there are some important implications for practice that can be gathered from this information.

Faculty who attempt to teach higher levels of the reasoning process may need to provide many opportunities for students to practice and refine the skills associated with it and should not assume that students arrive at college able to make and defend such reflective judgments. (p. 38)

There is also some information in the reflective judgment literature that shows a relationship between the discipline studied, such as social sciences or mathematical sciences, and reflective judgment. One such study found that graduate students in the
social science disciplines scored significantly higher on the Reflective Judgment Interview than their counterparts who were enrolled in the mathematical sciences, although no such differences in scores appeared between seniors in these two discipline groups (King, Wood, et al., 1990). The researchers postulate that the differences in these two groups have to do with the differences in educational experiences solving well-structured and unstructured problems, with those students who are in the math/sciences disciplines having less experience and practice with the ill-structured problems that are emphasized in the Reflective Judgment Model and posed in the Reflective Judgment Interview.

Wood et al. (2001) explored the institutional differences from two Midwest colleges in reflective judgment scores utilizing the Reasoning about Current Issues Test and found that there was a difference in reflective judgment scores based on the institution. Their findings replicated earlier findings by Wood (1994) that students at private colleges scored higher in reflective thinking on the reasoning about Current Issues Test than students from public universities.

A large study involving over 6,000 college students examined student academic performance and its relationship to reflective judgment as measured by the Reasoning about Current Issues Test (Wood et al., 2001). A comparison of college grades and scores on reflective judgment suggests that students with high academic performance also had high reflective thinking scores as measured by the Endorse section of the Reasoning about Current Issues Test. In addition, the relationship of grades to scores on the Reasoning about Current Issues Test was stronger for advanced undergraduates than for early undergraduates. Wood et al. (2001) suggest that although there is a predictive
effect, the magnitude of this effect for early undergraduates is not likely to be of practical significance, and for advanced undergraduate students it represents only 2-3% of the variance. The relationship of reflective judgment measured by the Reasoning about Current Issues Test to collegiate academic performance was investigated at a Midwest university where it was found to have a moderate prediction on reflective judgment. This relationship was more pronounced for the advanced graduate students than the early graduate students. Reasoning about Current Issues Test scores did not predict variability in grades, however (Wood et al., 2001).

The relationship of intellectual development, aptitude, and reflective judgment has been explored using the Concept Mastery Test, verbal subtests of the WISC-R and WAIS-R, and other measures of scholastic aptitude (Evans, 1988; Glatfelder, 1982; Hayes, 1981; King, Kitchener, et al., 1990; King et al., 1989; Kitchener & King, 1981; Kitchener et al.; 1993; Lawson, 1980; McKinney, 1985; Strange & King, 1981; Van Tine, 1990; Welfel, 1982; Wood et al., 2001). King and Kitchener (1994) summarize the results of these studies that “correlations between the Concept Mastery Test scores and Reflective Judgment Interview scores were low to moderate and the WISC-R and WAIS-R correlations were moderate, with correlations ranging from .37 to .55” (pp. 196-7). Reflective Judgment Interview scores and scholastic aptitude test correlations were the lowest (-.17 to + .26). King and Kitchener explain that the low to moderate correlations “suggest that traditional measures of verbal ability and scholastic aptitude are measuring constructs that are related to reflective judgment, but that can be distinguished from it” (p. 197).
Personal Characteristics and Reflective Judgment

The research on reflective judgment has examined a variety of personal characteristics such as age, psychosocial development, gender, critical thinking skills, dispositional/motivational behavior, and intellectual development that could affect reflective judgment in students. King and Kitchener (1994) state,

Increases in reflective judgment across educational levels should not be attributed solely to the effectiveness of educational institutions; as already noted, age and educational level are frequently confounded in studies that contrast students of different grades or classes. Age brings with it more opportunities for a broad range of life experiences. (King & Kitchener, 1994, p. 160)

Age

Studies indicate that age can be an important factor in the development of reflective judgment. In a 10-year longitudinal study (King & Kitchener, 1994) Reflective Judgment Interview scores of all students who had been tested one or more times during the 10 year period were entered into an age pool for each time they were tested. Modal scores of students ages 16-20 represented the pre-reflective stage 3. Students ages 21-35 were in the quasi-reflective stage 4, and students 41 and up scored as reflective thinkers in stages 6 and 7. Researchers in this study indicate that the data show a strong linear relationship between age and stage in the Reflective Judgment Model. They also caution that age alone cannot be considered the only factor affecting reflective judgment, since all participants in the study were also actively involved in educational programs. King and Kitchener (1994) point out, “Whether this progression in scores is due predominantly to age, to education, or to the interaction of the two in this sample remains open to speculation” (pp. 150-151).
Effect of age on reflective judgment has been explored in other studies, and general maturation gains were found to be not just a function of chronological age. Two studies comparing traditional and nontraditional female undergraduates found that reflective judgment performance was more closely tied to educational attainment than chronological age (Glatfelter, 1982; Strange & King, 1981). Age has been discussed as a contributing factor to reflective judgment, although educational level and age can be easily confounded. Age alone is not predictive of the ability to think reflectively, but it may be strongly related to other factors such as readiness to learn. King and Kitchener (1994) believe that “age brings with it more opportunities for a broad range of life experiences” (p. 160).

Gender

The reflective judgment research using the Reflective Judgment Interview has demonstrated an inconsistent pattern of gender differences in reflective judgment. Half of the studies that examined gender indicated no differences by gender, while the other half (seven) found gender differences in the timing of reflective judgment growth spurts. Six of these studies found that males scored higher in reflective judgment than females (King, Wood, et al., 1990; Kitchener & Wood, 1987; Kitchener et al., 1993; Lawson, 1980; Shoff, 1979; Strange & King, 1981). The remaining study (Schmidt, 1985) reported no gender main effects. When looking at gender differences by educational level in a 10-year study, King and Kitchener (1994) found significant differences in gender in high-school seniors and college juniors, with higher reflective thinking levels in males than in the females in the study. Interestingly, there was no gender difference with the doctoral
students. Wood et al. (2001) also explored the effect of gender on reflective judgment in seven studies with over 8,000 subjects and they found minimal gender effect.

Critical thinking

Duchesne (1997) examined how developmental learning and adaptive flexibility relate to the level of critical thinking in leaders. Three instruments to measure the study's variables were administered to leaders who attended a 5-day leadership program in 1993. The Watson-Glaser Critical Thinking Appraisal measured critical thinking, workplace learning events were measured by an adaptation of the Experiences Checklist, and the Adaptive Style Inventory (Kolb, 1984) measured adaptive flexibility. Results of this study indicated that formal education was the only variable significantly related to critical thinking. The authors also observed that the study provided only partial support for the model for developing critical thinking in organizational leaders. Thus, they proposed a revised model that more accurately demonstrated the developmental learning process of leaders through workplace learning experience that encompass both critical reflection and reflective judgment. They indicated that when a situation is viewed as novel, a leader constructs the experience as an ill-structured problem, and use of reflective judgment is the best way to solve the problem. A study by Brabeck (1984) explored the relationship between critical thinking skills and development of reflective judgment among adolescent and adult women. The study found that reflective judgment levels increased with educational level even though critical thinking scores were held constant. In addition, high critical thinking subjects outperformed low critical thinking subjects on the Reflective Judgment Interview. While low critical thinking subjects were homogeneously low in Reflective Judgment Interview levels, high critical thinking subjects had greater
variability of reflective judgment scores. On the basis of these findings, Brabeck argued that critical thinking and reflective judgment are separate constructs and that attainment of critical thinking skills is necessary but not sufficient for development of higher levels of reflective judgment. Other studies by King, Wood, et al. (1990) also indicated that critical thinking and reflective judgment were related by different constructs. Some of the skills necessary to solve well-structured problems may be necessary, but not sufficient for solving ill-structured problems.

Psychosocial characteristics

Character development, the moral values and judgments and attributes that reflect one's identity (psychosocial development), have been studied as they relate to reflective judgment. Glatfelter (1982) studied the relationship between the development of identity and reflective judgment among 80 college women that included traditional age and adult students as well as a group of adult non-students. She found that the students in the highest “identity-achieved” category also had high scores on the Reflective Judgment Interview. Polkosnik and Winston (1989) also examined the relationship of reflective judgment to psychosocial tasks in a longitudinal study with 20 college students. Like Glatfelter (1982), they also found a moderate relationship between psychosocial development and the development of reflective judgment. King and Kitchener (1994) propose that “taken together, the Glatfelter (1982) and Polkosnik and Winston (1989) studies suggest a moderate relationship between psychosocial development and the development of reflective judgment. Certain life experiences may impede or facilitate the development of reflective thinking” (p. 217).
Rest (1986) found that various life experiences affect reflective thinking. Research on moral development indicates that those who love to learn, who seek new challenges, who enjoy intellectually stimulating environments, who make plans and set goals, who take risks, who see themselves in the large social contexts of history and institutions and broad cultural trends, who take responsibility for themselves and their environs also exhibit high reflective judgment. King and Kitchener (1994) in their 10-year longitudinal study tested students on the Defining Issues Test and the Reflective Judgment Interview. They discovered that the Reflective Judgment Interview scores increased significantly at each testing: 4 years, 6 years, and 10 years. Moral judgment as measured by the Defining Issues Test increased significantly after 4 years, but not after 6 and 10 years. They found a moderate relationship between the scores from the Reflective Judgment Interview and the Defining Issues Test, indicating a relationship between moral reasoning and reflective judgment, but found that reflective judgment did not seem to be a precursor of moral judgment as measured by the Defining Issues Test (King, Kitchener, & Wood, 1985; King, Kitchener, & Wood, 1990; King, Kitchener, Wood, & Davison, 1989).

The longitudinal studies do suggest that reflective judgment and moral judgment are interrelated, as indicated by positive correlations and the changes in scores over time. King and Kitchener (1994) point out that “the analysis suggest that development of reflective judgment will not necessarily lead to, but may be required for more principled moral thinking” (p. 212).

Josephson (1988) explored the relationship between moral judgment and reflective judgment using Kohlberg’s Moral Judgment Interview and the Reflective
Judgment Interview with 43 highly educated adult women. He found no relationship between the two measures and indicates that the lack of a significant relationship may have been due to the small sample size in this study.

Bowen (1989) studied the combined predictive effect of personality type and creativity level on reflective judgment of 43 freshmen and seniors in college. The Reflective Judgment Interview measured reflective judgment, personality type was assessed using the Myers Briggs Type Indicator, and level of creativity was measured using the Torrance Test of Creative Thinking. In this study he found that there is a relationship between students who score as sensing on the Myers Briggs and reflective judgment. Creativity had only a slight correlation with reflective judgment and was determined to be an inadequate predictor to reflective judgment. The demographic variables of age, gender, grade point average, socioeconomic level, and level of education did not predict variations in reflective judgment.

Jensen (1998) explored dispositional/motivational variables and their relationship with reflective judgment in her dissertation where she looked at the need for cognition and its relationship to reflective judgment gains in college when age, verbal ability, and social desirability were controlled. Eighty-one undergraduate and graduate students were given three tests: the Reflective Judgment Interview to measure reflective judgment, the Need for Cognition, and the Marlowe-Crone Social Desirability Scale. Educational level and age had a main effect on reflective judgment, and need for cognition predicted reflective judgment in freshman and beginning graduate students. Social desirability had no effect on reflective judgment.
Summary

In summary, the literature on reflection, educational leadership, and the Reflective Judgment Model supports the hypothesis of this current study that a combination of variables contributes to the reflective judgment in educational leadership students. Research on the importance of reflection to educational administrators has shown that educational leaders who use more sophisticated levels of reasoning as described in the Reflective Judgment Model demonstrate more democratic behavior with teachers, provide more support for new initiatives, and are better problem-solvers and supervisors.

The challenge for educational leadership programs of enhancing reflection in their students has led to changes in both content and pedagogy. There is evidence from the literature that when the traditional theory-driven content of the past is changed to more relevant problem-oriented, school-related training, positive changes occur in participants’ leadership behaviors. As educational leadership programs are working to align training and actual practice, there has been an increase in the number of field experiences, mentee/mentor relationships, standards-based assessment, and direct instruction on reflection and problem solving. To maximize these learning opportunities, educational leadership programs need to continually review and reinforce the development of reflective judgment and high levels of reasoning in their students.

King and Kitchener (1994) have compiled the reflective judgment research of 33 longitudinal and cross-sectional studies over the past 20 years that validate the Reflective Judgment Model and the theory of gradual slow development of stages of reasoning. Further, variables such as psychosocial skills, age, gender, educational level, educational institution, intellectual development, motivation, and critical thinking have been
examined for their relationship with reflective judgment. The reflective judgment research to date provides limited documentation on advanced graduate students and the effect of non-educational experiences and personal characteristics on reflective judgment, and no documentation of the effect of a combination of variables representing education, experience, and personal characteristics on the reflective judgment of educational leadership students. This study was designed to further the research in these areas.
CHAPTER 3

METHODOLOGY

The purpose of this study was to determine the educational, experiential, and personal characteristics that contribute to reflective judgment in educational leadership students. A mixed method research design integrating quantitative and qualitative methods was employed to determine the factors that contribute to the reflective judgment in educational leadership students. This type of mixed method research design is recommended by Greene and Caracelli (1997), who point out that one of the advantages is that “the methods can be mixed in ways that integrate elements of disparate paradigms and have the potential to produce significantly more insightful, even dialectically transformed, understandings of the phenomenon under investigation” (p. 23). The decision to combine research techniques is dependent upon the nature of the research problem. Creswell (2003) suggests that mixed methods allow the research study to capture the best of both qualitative and quantitative approaches. “In these situations the advantages of collecting both closed-ended quantitative data and open-ended qualitative data prove advantageous to best understand a research problem” (p. 22). The ability to first survey a large number of educational leadership students, and then to followup with a few of the students to obtain specific information about what they believe contributed to their reflective judgment provided more information than if I had used only one of these approaches. The mixed method research design provided this study the benefit of
additional perspectives. Bifano (1989) asserts that “the primary benefit in combining methods is that each method can be used to provide insight to the research problem that neither alone can provide” (p. 58).

This chapter of the study discusses the participant demographics, the study design, methodology, and instruments employed. Since this study is a mixed method design, this chapter will be organized by each element of the study. Descriptions of the research design, participants, the instruments used, and data collection and analysis for both the quantitative and qualitative elements of this study are included in this chapter.

**Procedure for the Quantitative Methods**

The quantitative methodology was designed to answer the research question: what educational, experiential, and personal characteristics contribute to reflective judgment in educational leadership students? The hypothesis to this question was that no identified combination of experiential, educational, and personal characteristics contribute to the development of reflective judgment in educational leadership students.

In the quantitative phase I administered and analyzed the Reasoning about Current Issues Test (RCI), the Experience and Background Inventory (EBI), and the Demographic Information Form (DIF). Certified evaluators at the Reflective Judgment Laboratory in Missouri scored the Reasoning about Current Issues Test. Results from the Experience and Background Inventory and the Demographic Information Form were scored and compiled by the researcher. I analyzed all data from the paper-and-pencil instruments.
Quantitative Sample

Data were obtained from a self-selected sample of 128 students enrolled in the Southern Connecticut State University Educational Leadership Program who met the following inclusion criteria: subjects must have been enrolled in at least one of the Southern Connecticut State University’s Educational Leadership summer courses offered from June 2002 through August 2002.

Following approval to conduct the study from the Southern Connecticut State University and the Andrews University committees involving human subjects (Appendix A), and upon agreement by the students who met inclusion criteria to participate, arrangements were made with participants to complete the Reasoning About Current Issues Test, Experience and Background Inventory, and Demographic Information Form.

Quantitative Data Collection

The three paper-and-pencil instruments were administered to the volunteer educational leadership students in their university classroom. An information packet was given to all participants. The packet included: the informed consent form with a statement to the participants informing them of the purpose of the study, a description of the nature of the study, what participation entailed, the potential benefits and risks to participation, how to respond if there was a problem, and that participation involved a one-or two-time collection of data (Appendix E). Consent forms were obtained from all participants, and informed consent was indicated by the participant’s signature on the Informed Consent Form. Confidentiality of participants was maintained by providing no identifying information on the test forms, and filing the personal information form and informed consent forms in a locked cabinet separate from the test answer sheets. All participants
were assigned a code number to their Reasoning about Current Issues Test and Experience and Background Inventory answer sheets. After completion, this information was stored in a locked file accessible only to me. Tests and demographic data sheets will be destroyed within 3 years following the completion of the study. One hour and 30 minutes of classroom time was provided for the participants to complete the information. All participants were allowed as much time as they needed to complete the tests. During the administration of the surveys, I was in the room and available to answer questions from the students.

Quantitative Instruments

The three data collection measures used in the quantitative portion of the study were The Reasoning about Current Issues Test (Kitchner & King, 1994); Experience and Background Inventory (Baehr & Froemel, 1996); and Demographic Information Form.

The Reasoning About Current Issues Test

The Reasoning about Current Issues Test was developed as a way to determine reflective judgment level using the Reflective Judgment Model (King & Kitchener, 1994). This instrument assesses reflective level through an interview process called the Reflective Judgment Interview. Length of time for administration of the interview made it difficult to get large sample sizes, hence the Reasoning about Current Issues Test was developed in 1996. The Reasoning about Current Issues Test is available in a paper-and-pencil or web-based format and consists of two sections:

1. The Essay Discrimination Section (DISCRIM) asks students to discriminate between essays written at varying levels of sophistication according to the Reflective Judgment Model. Scoring: A composite score across comparisons, DISCRIM, is calculated as the number of correct responses across each of twelve essay
comparisons. A point is subtracted if the participant incorrectly identifies the less sophisticated argument as superior.

2. In the second part of the Reasoning about Current Issues Test participants are shown five ill-structured problems and are requested to read ten statements that represent different levels of sophistication according to the Reflective Judgment model. Participants are first asked to rate each statement in terms of how closely it resembles their own thinking about the problem on a four-point scale. Participants who feel the statement is not interpretable can use a fifth response of “meaningless”. They then rank order the three statements that most closely resemble their own thinking. The Endorse score is an estimate of the level most often ranked by the participant as most similar to their thinking. Endorse scores provide a reflective judgment stage ranging from one to seven based on the Reflective Judgment Model. (Wood et al., 2001, p. 3)

The Reasoning about Current Issues Test contains estimates of: whether students can discriminate between arguments which are written at different levels of sophistication; how similar students believe statements written reflect stages 5 through 7 are to their own approach to selected real-world problems; and the stage of reasoning that students feel most represents their approach to the problem. A sample of the open-ended controversies is available in Appendix C.

The normalized standard scores on the Reasoning about Current Issues Test are based on a total of 7,035 students from seven institutions from the period of fall 1996 to spring 2000. Internal consistency for essay comparisons as of March 4, 2000, was .75 to .82 depending upon the level. Internal consistency of similarity scores is coefficient of alpha .83. Internal consistency for endorsement scores is .65 based on 6,222 individuals (Wood et al., 2001).

Other instruments that look at students’ abilities to think reflectively or critically such as the Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1964), The Cornell Critical Thinking Test (Ennis & Millman, 1971), and the Reflective Judgment Interview (King & Kitchener, 1994) were considered. The Reasoning about Current
Issues Test was chosen because it looks at the ability to solve complex ill-structured problems, unlike the Critical Thinking Test. Because the research indicates that there are differences in problem-solving between expert and novice principals as a result of the complexity of the problem, measurement of complex problem solving ability was key to this study of preparation for school administrators. The Reasoning about Current Issues Test was also chosen because the paper-and-pencil format allowed for greater ease in administration, hence a greater number of participants could be involved in the study. The Reflective Judgment Interview is not amenable to large-scale administration because of training, time, and expense associated with the interview format.

**Experience and Background Inventory**

The Experience and Background Inventory provides quantitative measures of past performance and experience. A participant’s past performance and experience are evaluated through analysis of the scores obtained on nine dimensions, or factors, which have been identified through a series of factorial studies. These factors are based on factual items of the information from the participant’s self report concerning education, work history, and activities. A sample of the types of questions asked is in Appendix C.

The normalized standard scores on the Experience and Background Inventory are based on 500 men and women in a variety of higher-level occupations. The reliabilities of the original nine Experience and Background Inventory scales for operational use were obtained by calculating Cronbach’s Alph Coefficient for the sample of 500 subjects. The revised and updated scales were calculated in 1995 for a group of 421 vocationally heterogeneous higher-level employees. Both sets of coefficients are generally comparable and acceptable for subscales of a test. Of the 144 possible correlations, only 22 achieved
a magnitude of .20 or greater. This fact attests to the essential independence of the bio-
data dimensions (Baehr & Froemel, 1996).

I was looking for an instrument that would measure experiential and educational
background since these two factors appear in the literature on reflective judgment to have
some explanatory qualities. This instrument was particularly compelling because of the
nine dimensions of measurement, its reliability, and the brief paper-and-pencil format.

Demographic Information Form

Descriptive information such as name, address, gender, date of birth, and present
occupation was gathered using a brief demographic form as shown in Appendix C.
Educational information pertaining to the courses completed at Southern Connecticut
State University (SCSU) in the Educational Leadership program was obtained through a
checklist format. Participants also indicated if they were enrolled in the SCSU
Educational Leadership program and, if not, why.

Quantitative Data Analysis

Analysis of the quantitative data was intended to provide information to answer
the first research question: What are the educational, experiential, and demographic
factors that contribute to reflective judgment in educational leadership students?

As a first step, an SPSS data set was created from the raw data, and data checking
and editing were done to ensure quality data. Categorical variables such as gender were
recoded to binary (dummy) variables so that they could be included in regression
analysis. Data from the Experience and Background Inventory were entered into SPSS
and responses were calculated according to the scoring procedure recommended by the
authors in the scorer's manual (Baehr & Froemel, 1996). To understand the obtained data
set, preliminary analyses included establishing the number of valid cases, frequencies, means, and standard deviations for each variable in the analysis.

Special attention was given to meet the assumptions of linear regression; therefore a correlation matrix among all of the variables was calculated, with a one-tailed significance level of .05, to determine the suitability of independent variables. The variance of the distribution of the two dependent variables, Endorse and Discrim scores that represented reflective judgment was checked for consistency across the values of each independent variable. As a preliminary step, the relationship between each dependent variable and each independent variable was found to be linear, and all observations were found to be independent.

The selection of independent variables for multiple regression analysis is a debated topic among researchers. The advice and recommendations of three quantitative references were utilized as guidelines for the selection of independent variables in this study (Kennedy, 1998; Mertens, 1998; Pedhazur & Schmelkin, 1991). Selection of a promising set of independent variables for a regression model was based on the following guidelines:

**Theoretically Based Independent Variables**

A set of seven independent variables was selected for this study because they had a connection with the research and theory in reflective judgment and reflection. Years employed and leadership experience were measures of non-educational experience. There are limited studies in reflective judgment research on non-educational experience, but the works of Oliver (1996), Osterman and Kottkamp (1993), and White and Lester (1987) have shown a strong connection between leadership experience and reflection.
Personal characteristics were measured by age and aspiration level. Age has been a contributing factor to reflective judgment in students in numerous longitudinal and cross-sectional studies (Glatfelter, 1982; King & Kitchener, 1994; Strange & King, 1981). Aspiration level was the second measure of personal characteristics. Although this variable has received little attention in the theoretical literature, I hypothesized that it would have a negative effect on the dependent variable of reflective judgment. This hypothesis is based on the work of Rest (1986) and Jensen (1998) who found that students with high reflective judgment enjoy and seek out intellectually stimulating environments and have a strong need to learn. Additionally, Jensen's research (1998) indicates that social desirability has no effect on reflective judgment. It would seem from these studies that when aspiration level is defined by Baehr and Froemel (1996) in the Experience and Background Inventory as "a person's major consideration in the choice of vocation was the availability of jobs, the possibility of rapid career advancement, high anticipated earnings, and the possibility of working independently in a high social status occupation" (p. 2), these motivations might have a negative effect on reflective judgment. Gender was considered as a measurement of reflective judgment and dismissed because there is no reflective judgment research indicating that gender has an effect on reflective judgment (King & Kitchener, 1994).

Educational experiences were measured by courses completed in the educational leadership program because reflective judgment research has demonstrated in numerous studies that there is a gradual increase in reasoning ability/reflective judgment as a student progresses through school (Bowen, 1989; Brabeck, 1983; Jensen, 1998; King & Kitchener, 1994; Wood et al., 2001). A second measure of educational experience was
internship. The works of White and Lester (1987), Lester (1993), and Gousha (1988) provide us with information on the positive effect that internship experience has in preparing students for problem-solving and collaboration as a reflective school administrator. Another measure of educational experience used in the study was completion of the curriculum development class in the educational leadership program. The positive relationship between curriculum development and reflective thinking is cited in reflective and curriculum development research by DeLawter and Sosin (2001), Fitzharris (1999), and Koo (2000).

Number of Independent Variables

Mertens (1998) recommends that for each independent variable in the regression there be at least 15 participants. In this study, 125 participants were entered into a model with seven variables, thus staying well within Merten’s recommendation.

Empirical Contribution of Independent Variables

If a theoretically based independent variable raises the adjusted $R^2$, then it should be considered for inclusion into the model. Several variants of the models were estimated to gauge the robustness of the results. These exercises tested the contribution of additional variables prior to arriving at a final model. In cases where multicollinearity occurred between age and years employed, the effect of adjusted $R^2$ was considered as suggested in this guideline.

Multicollinearity Among the Independent Variables

Because multicollinearity among the independent variables can increase the standard errors of the coefficient estimates, any relationships among the independent
variables were determined using correlations. Age and years employed were found to be highly correlated (.57). Dallal (2001) points out that one of the problems when using variables that are highly correlated together in a regression is that “predictors with known strong relationships to the response will not have their regression coefficients achieve statistical significance” (p. 3). When this situation occurs, Kennedy (1998) recommends that the researcher can either do nothing, combine variables if it is appropriate, or drop a variable. In the results section the issue of multicollinearity between these two variables will be discussed further in light of the model development. Multicollinearity was assessed by calculating each variable’s tolerance and using the guideline of a tolerance of .01 or higher as acceptable. All variables met acceptable standards. In addition, a condition index was computed on each model and found to be within accepted range of 30. Distance measures were also obtained, to identify any cases with unusual combinations of values for the independent variables and cases that may have a large impact on the regression model. Data were checked for omitted variables, heteroscholasticity, and endogenicity.

To address the research hypothesis, the selected independent variables were entered based on their theoretical effect on the two dependent variables into two linear regressions to determine their explanatory value on the dependent variable, reflective judgment. “In explanatory research, the decision about the order of entry of variables must be made on the basis of one’s theory regarding the process by which the variables under consideration affect the dependent variable” (Pedhazur & Schmelkin, 1991, p. 426).
The null hypothesis that no combination of independent variables will contribute to the development of reflective judgment in Educational Leadership students was explored by reviewing the analysis of both regression models to look for significance at a .05 level and analyzing the $R^2$. $R^2$ represents the overall combined effect of all of the selected variables acting on the dependent variable of reflective judgment for a net, combined effect. Thus, the resulting $R^2$ value provided an indication of the goodness of fit of the model. The regression model equation is of the form:

$$Y = A - B_1X + B_2X^2 + \ldots + B_kX_k + E,$$

where:

- $Y$ = the predicted value on the dependent variable (reflective judgment)
- $A$ = the intercept, the value of $Y$ when all $X$s are zero
- $X$ = the selected independent variables
- $B$ = the various coefficients of the independent variables during the regression
- $E$ = the error term.

For the independent variables, regression coefficient Beta ($B$), standard error of $B$, standardized coefficient beta, $t$ value for $B$, and two-tailed significance level of $t$ were computed. Confidence intervals at 95% were computed for each regression coefficient. Predicted values and prediction intervals were generated. Regression coefficients, multiple $R$, $R^2$, standard error of the estimate, and tolerance levels were computed.

**Procedure for the Qualitative Methods**

The second element of the research design was a focus group interview process. This qualitative method was selected as a way to better understand the factors that high-scoring reflective thinkers see as contributing to their reflective judgment. Qualitative methods, according to Bogdan and Bilken (1982), provide a rich description and help...
understand the subject’s perception of the phenomena under study. The focus group interview was selected because it provides an especially nice situation for revealing variations in perspective and attitude. Schatzman and Strauss (1973) recommend this methodology when the researcher is looking for variation and interplay of perspectives.

Qualitative Sample

A purposeful sample of five students who scored as reflective thinkers (stage 6) on The Reasoning about Current Issues Test were interviewed in a focus group to ascertain what aspects they perceive may have contributed to the development of their reflective judgment. Qualitative samples should usually be purposive, rather than random (Kuzel, 1992; Morse, 1989). In this study, purposeful criterion sampling was used to assist in answering the research question regarding the factors that students with reflective thinking perceive as important in the development of their reflective judgment. The logic of this selection was that highly reflective participants could offer the most valuable perceptions on the contributing factors to their reflective judgment. Criteria for participant selection required that the focus group participant had to have participated in the quantitative element of this study in the summer of 2002. The focus group participants also had to complete the Reasoning about Current Issues Test in summer of 2002, and receive a score of 6 or above indicating use of the reflective thinking level on the Endorse section of the Reasoning about Current Issues Test. The final requirement for focus group participation was their attendance in an Educational Leadership Course at Southern Connecticut State University in the summer of 2002.
Identification of students who met the criteria for participation in the focus group interview began with a review of all participant Endorse scores from the Reasoning about Current Issues Test that was administered in the quantitative phase of the study during the summer of 2002. Eighteen students scored at level 6 or above (reflective thinking level) and met the other criteria for participation in the focus group interview. These 18 students were contacted by the researcher through phone, email, and/or postal mail depending upon the method of contact that they indicated as preference on the Personal Information Form (Appendix D). Five of the 18 students agreed to participate in the focus group interview on October 10, 2002, at 7:00 p.m. in a classroom at Morrill Hall on the Southern Connecticut State University campus. These students were sent confirmatory letters and the informed consent form prior to the interview (Appendix D). Two participants were female and three were male. Three participants were in their final two classes of the Educational Leadership program and were currently involved in an internship program. One participant was enrolled in an Educational Leadership program at another state university.

Focus Group Data Collection

Procedural standards developed by Krueger (1998) contributed to the quality of the focus group data collection process.

Clarity of Purpose

The purpose of the focus group was to bring together high-scoring reflective judgment educational leadership students to answer questions, share their experiences, and provide the researcher with insights regarding the factors that they individually
perceive to contribute to their reflective judgment. Prior to agreeing to participate in this study, students each received a letter describing the study in detail (Appendix D). The letter identified the date, beginning and ending time of the interview, location of the meeting, and the importance of signing the consent form.

When the focus group met, each participant was given a folder with focus group instructions (Appendix E). The instructions described the purpose of the group, the reason for audiotaping the group, amount of time for each question, my role in the meeting, importance of confidentiality, and importance of having one person speak at a time. Included in the folder were the three questions for the session and space on the paper for written responses by the participants. As moderator, I reviewed this information with the group verbally and provided an opportunity for participants to ask questions to clarify before the first question was posed to the group.

**Appropriate Environment**

The focus group was conducted in a classroom at Morrill Hall on the Southern Connecticut State University campus. Educational Leadership classes are regularly held in Morrill Hall, so participants were familiar with the surroundings. Chairs were arranged around a rectangular table to facilitate discussion. Lighting and temperature provided a comfortable environment for the meeting. Food and drinks were provided before and after the meeting. Participants spent 45 minutes in the interview with no break during that time. The group met at 7:00 p.m. because of previous work or home commitments during the weekdays and on the weekends. Questions were given to participants at the time of the meeting rather than before in order to enhance spontaneity and group discussion.
Sufficient Resources

The session was audiotaped. In addition, participants wrote their comments on paper provided in the focus group information packet and these comments were collected at the end of the session. I transcribed the audiotape and, with an independent evaluator, the script was reviewed and coded for themes. Sufficient resources were available to effectively and efficiently conduct the focus group and evaluate data from the group.

Appropriate Participation

The five students who participated in the focus group met the criteria for participation. They agreed to participate in the study by signing and dating a written consent form. My observations and a review of the transcript of the interview session indicated that all five students openly participated in the discussion.

Skillful Moderator

In the qualitative methodology of this research I was the primary instrument for data collection and analysis. I have studied texts regarding focus group methodology (Bogdan & Bilken, 1982; Morgan, 1993; Patten, 2002; Stewart & Shamdasani, 1990). I designed the questions for the semi-structured focus interview group, performed as moderator of the focus interview, and analyzed data from the interview group. I have had over 30 years experience in education and have conducted over 100 focus group interviews.

Effective Questions

The study's focus group interview instructions are described in Appendix E. The beginning of the interview incorporated five recommended best practices (Taylor &
Bogdan, 1984). I discussed my motives and intentions with regard to the study, and the study’s purpose. The protection of participants was addressed by requesting that only first names be used and by reviewing how the information would be handled in a confidential manner. Logistics such as time limit from 7:00 to 7:45 p.m. and research questions were shared with the participants at the beginning of the interview.

Design of the questions followed two general principles described by Stewart and Shamdasani (1990). Questions were ordered from the more general and most important occurring at the beginning of the session, to the more specific and less important to the study going at the end of the session. This study used interpretive, hypothetical, and ideal-position questions for the focus interview group. Participants were given the focus group questions in writing in the focus group information packet at the time of the focus group interview. Space was provided for their written notes after each question (Appendix E). Before the discussion began, 5 minutes were provided for participants to review the questions and write any notes they felt would be helpful in the discussion. They were encouraged to continue writing notes during the discussion as new ideas or thoughts emerged. Participants were told verbally and in the written instructions that their notes would be collected at the end of the interview and used as data for the study. The focus group questions were:

**Question 1:** Each of you scored as a reflective thinker on the Reasoning about Current Issues Test. Describe some of the things that you believe have contributed to your reflective thinking. Please share and explain to the group.

**Question 2:** Which of the contributory factors do you think have had the greatest impact on your reflective thinking?
Question 3: Imagine that you are responsible for the development of curriculum and pedagogy to enhance reflective judgment in educational leadership students. What would you teach them and how would you teach it to them?

Bogdan and Bilken (1982) suggest that the researcher also consider the session structure, its length, and means of analysis of data when conducting focus group interviews. A 45-minute semi-structured group interview with five participants was conducted. “In this type of interview all of the questions are more flexibly worded, or the interview is a mix of more and less structured questions.” (Merriam, 1998, p. 74). This semi-structured interview, although relatively open-ended, focused on the topic of reflective judgment and was guided by some general questions. As moderator, the format allowed me to respond to the situation at hand, to the emerging worldview of the respondents, and to new ideas on the topic (Merriam, 1998). The questions led to group discussions, and on three occasions I asked probing questions to obtain further information on an issue.

Focus Group Data Analysis

The focus group interview data were analyzed to determine the answer to the second research question of this study, What do educational leadership students who are high-scoring reflective thinkers believe contributed to their reflective judgment? To ensure that everything said was preserved for analysis an audiotape was made of the 45-minute interview. “Ideally, verbatim transcription of recorded interviews provides the best database for analysis” (Merriam, 1998, p. 88). In addition, written comments from the focus group participants were also reviewed. Recommended best practices from Creswell (2003) were followed in the analysis and interpretation of the focus group data.

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The first step was to organize and prepare the data for analysis. The 45-minute focus group audiotape was transcribed and participant notes were organized. Second, to get a general sense of the information and a sense of the meaning, I read through all the information and wrote notes to myself regarding a general impression. The third step of the analysis process was to code the information. Stewart and Shamdasani (1990) indicate that coding of individual units is not content analysis, but merely a first stage in preparation for analysis. Rossman and Rallis (1998) define coding as “the process of organizing the material into ‘chunks’ before bringing meaning to those chunks” (p. 171). Eight recommended practices for coding by Tesch (1990) were followed: Get a sense of the whole, pick one document and think about underlying meaning, list all topics, abbreviate the topics as codes and write the codes next to the data, find the most descriptive wording for your topics and turn them into categories, make a final decision on the abbreviation and alphabetize these codes, assemble the data material belonging to each category in one place to perform a preliminary analysis, and if necessary recode existing data. The fourth step in the coding process was to generate a description of the setting or people as well as categories or themes for analysis. Strauss and Corbin (1998) recommend the following steps for grounded theory research:

1. Generating categories of information (open coding): this was done by myself and then in collaboration with an independent evaluator. Five themes were found and agreed upon by the independent evaluator and myself.

2. The selection of one of the categories and positioning it within a theoretical model (axial coding): Content analysis was conducted on the data from the interviews.
Internal Validity of the Study

Internal threats to validity of the quantitative and qualitative elements of the study were controlled by the research design. Pedhazur and Schmelkin (1991) indicate that events can take place during the course of the study that can affect the study, people can make changes during the study, and performance may change if people are tested on the same variable several times. They term these conditions history, maturation, and testing effect. One of the strategies that I used to reduce these threats was to conduct the study within a relatively short time. The quantitative data were gathered within a 7-week period. Because the dependent variable of reflective judgment was measured only once for each participant and because the research indicates that reflective-judgment changes occur usually over years, not months, the history, maturation, and testing threats were minimized.

Strategies such as triangulation, member check, and peer examination described by Merriam (1998) to promote qualitative research internal validity were used in this study. An independent coder and I coded the data from the focus interview. This coding check was confirmatory. Participants in the focus group were also encouraged to write responses to the questions and additional thoughts as they wished. The independent coder and I also reviewed their participant notes. Data from the quantitative element of the study as well as the focus group were used for the analysis.

Limitations

Using the 10 factors that Bracht and Glass (1968) discuss as limitations to the generalizability of a study, the limitations of this study were identified. Measurement of the independent variables of aspiration level and school achievement was done through
the Experience and Background Inventory scores. In these domains, some of the questions that were asked of the subjects had to do with high-school grades and class ranking. Because the mean age of the sample was 38 and all participants had achieved a Master's degree, it might have been more appropriate to ask questions about more recent school achievement.

Another limitation was the possibility of restriction of range with the measurement of reflective judgment. King and Kitchener (1994) claim that there is only an average of three-fourth-stage difference from early-level graduate students to advanced graduate students. This does not allow for much variability in reflective judgment scores, especially when considering the short time frame in which an educational leadership student can go through the program. It is possible that a student can complete all 21 credits, with the exception of an internship within a year. Data from the study indicate that the mean number of courses completed by the participants of this study was 3.45, with 63% of the participants completing four courses. These data do not tell us specifically how long the participants were in the program since the completion of four courses can take anywhere from two semesters to years. The research on the development of reflective judgment indicates that it is a gradual and slow process and that it requires at least a year from test to retest to see significant changes in reflective judgment levels. Hence, the information regarding number of courses may not provide the data needed to determine whether time in program was a factor. This limitation was accounted for in some degree by the fact that the research indicates that it is not just length of time in program that contributes to reflective judgment, but also the experiences
within the educational program such as internships, mentoring, and reflective teaching and practice.

The construct of reflective judgment was measured with the Reasoning about Current Issues Test, and although this measure has been shown to be valid and reliable, it was the only instrument that documented reflective judgment. A second instrument has been documented as a reliable and valid tool to measure reflective judgment, The Reflective Judgment Interview. However, this requires a one-to-one interview of over an hour with a person trained in the scoring of the instrument. It was not practical or possible given the logistical constraints of this study to test each of the 128 participants for an hour and half on the three paper-and-pencil tests and do an extensive one on one interview as well. Therefore, there was a risk of mono-operational bias in that only one instrument was used to measure the reflective judgment construct.

When considering generalization of the results of this study it is important to consider that data were gathered in one Connecticut university utilizing volunteer participants because of feasibility. The purposeful sample for the focus group interview was drawn from the participants who scored as reflective thinkers on the Reasoning about Current Issues Test. Because the purpose of the focus group interview is to gain greater depth of knowledge regarding what students perceive as useful in the development of their reflective judgment, it was my opinion that those who scored highest on the Reasoning about Current Issues Test could provide the best insight. However, this is information from a small purposeful sample, and generalization of their responses to other students and settings should be done with care. Eisner (1998) describes the process of generalization as a transfer of ideas, images, and skills from one situation to another.
He argues that qualitative case studies provide the reader with opportunities to generalize. “If we learn something about a case that we did not know at the outset of the study, not only have we achieved consciousness of that quality or feature, but also we learn to look for that quality or feature in other places” (Eisner, 1998, p. 207). The features and qualities of a high-scoring reflective thinking educational leadership student are described in such a way that the reader will be able to apply these qualities to other situations and with other people.
CHAPTER 4

RESULTS

The purpose of this study was to determine the educational, experiential, and personal characteristics that contribute to reflective judgment in educational leadership students. This mixed method research design explored courses completed in educational leadership, internship, curriculum development, school achievement, years employed, leadership, age, and aspiration level for their effect on reflective judgment in educational leadership students. The Demographic Information Form and Experience and Background Inventory were used to obtain information on independent variables related to experience, education, and personal characteristics. The Reasoning about Current Issues Test was used to obtain information about the participants' reflective judgment.

After receiving permission from the Educational Leadership Department Chair at Southern Connecticut University, I contacted seven Southern Connecticut State University Educational Leadership teachers during the months of June and July 2002. They agreed to provide the initial information about the study to students in their classes. The teachers gave information to their class about the study and provided 1 1/2 hours during their class period for those students who were willing to volunteer to take the test instruments. Approximately 180 Southern Connecticut State University Educational Leadership students were informed about the study and invited to participate during the months of June, July, and August 2002.
Descriptive Statistics of Quantitative Sample

The obtained sample consisted of 128 graduate students who attended one or more summer educational leadership classes at Southern Connecticut State University who volunteered and participated in the study. This obtained sample represented a 70% participation rate of the 180 students who were asked to participate in the study. Reasons for the high participation rate may have been that participants were given time during their graduate classes to complete the surveys, that the teachers were supportive of the study by announcing it in their classes, and that participants received the benefit of their scores from the Experience and Background Inventory and Reasoning about Current Issues tests.

During the quantitative data collection period, 128 graduate educational leadership students who met the sample criteria were enrolled in the study, consented to participate, and completed surveys. An additional two participants did not complete all the surveys because of personal time constraints. One participant completed all surveys except the Experience and Background Inventory; therefore, there were 127 full participants in the study.

Gender and Age

The 128 respondents represented 39% (N = 49) males and 61% (N = 78) females. One student did not provide gender information (Table 1). Age range for the 107 respondents was 24 to 65, with a mean age of 38. Twenty-one students did not provide age information (Table 2).
Table 1

*Gender (N = 128)*

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>49</td>
<td>38.3</td>
</tr>
<tr>
<td>Female</td>
<td>78</td>
<td>60.9</td>
</tr>
<tr>
<td>Gender not reported</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Table 2

*Age of Respondents (N=107)*

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age</td>
<td>38</td>
</tr>
<tr>
<td>Median age</td>
<td>34</td>
</tr>
<tr>
<td>Minimum age</td>
<td>24</td>
</tr>
<tr>
<td>Maximum age</td>
<td>65</td>
</tr>
<tr>
<td>Age not reported</td>
<td>21</td>
</tr>
</tbody>
</table>

Educational Leadership Program Status and Courses Completed

On the Demographic Information Form 81% (N=104) of the 128 respondents indicated that they were enrolled in the Southern Connecticut State University Educational Leadership Program and working towards an intermediate administrative certificate. The remaining 19% (N=24) of the respondents indicated that they were not enrolled in the program at Southern Connecticut State University. However, 2% (N=3)
had already received their administrative certification and were continuing courses toward their sixth-year degree. There were 16% (N=21) of the participants who had not formally enrolled or been accepted into the Educational Leadership Program at Southern Connecticut State University (Table 3). Formal enrollment requires the student to have a Master’s degree.

Table 3

*Enrolled in Southern Connecticut State University Educational Leadership Program (N = 128)*

<table>
<thead>
<tr>
<th>Educational Leadership Enrollment Status</th>
<th>No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>21</td>
<td>16.4</td>
</tr>
<tr>
<td>Yes</td>
<td>104</td>
<td>81.3</td>
</tr>
<tr>
<td>Have Administrative Certificate</td>
<td>3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Students in the Southern Connecticut State University Educational Leadership Program will obtain an initial intermediate administrative certificate for successful completion of a set of prescribed courses totaling 21 credits beyond a Master’s degree. These courses are to be completed in a sequence with two beginning courses, four intermediate courses, and one advanced field experience course. Students who wish to earn an sixth-year degree in educational leadership must also complete the credits required for certification plus an additional 12 credits that include School Finance, School Law, and Seminar along with field experience as an administrator for 1-3 years.
The educational leadership program requires that students must complete two beginning courses for three credits each within the first year of the program: Leadership Perspectives (EDL 680) and Organizational Development (EDL 681). Table 4 indicates that of the 127 respondents 46% (N=59) successfully completed the Leadership Perspectives course and 61% (N=78) completed the Leadership Development course.

Table 4

*Beginning Coursework (N=128)*

<table>
<thead>
<tr>
<th>Courses</th>
<th>Completed</th>
<th>No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership Perspectives</td>
<td>Yes</td>
<td>59</td>
<td>46.1</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>68</td>
<td>53.1</td>
</tr>
<tr>
<td>Leadership Development</td>
<td>Yes</td>
<td>78</td>
<td>60.9</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>50</td>
<td>39.1</td>
</tr>
</tbody>
</table>

Upon completion of the two beginning courses, the educational leadership students at Southern Connecticut State University are required to take 12 intermediate credits from the following courses: Organizational Development (EDL 682), Supervision and Staff Development (EDL 683), Learning Theory into Practice (EDL 684), and Curriculum Development (EDL 685). School Law (EDL 602) and School Finance (EDL 657) are intermediate courses for students in sixth-year programs. A student in the intermediate education certification program is required to successfully complete the two beginning courses of Leadership Perspectives and Leadership Development before he or she can register for any of the six intermediate courses. Table 5 provides a summary of each of the courses and the number of participants who successfully completed each course. Overall, the largest percentage of the 128 respondents were in the intermediate
stage of their program. Of the respondents in the intermediate stage, 62% \((N=79)\) completed Organizational Development, 52% \((N=66)\) completed Supervision and Staff Development, 44% \((N=56)\) completed Learning Theory, and 34% \((N=43)\) completed Curriculum Development. A smaller percent of intermediate stage respondents completed School Law \((17% \; N=15)\) and School Finance \((12% \; N=15)\), understandably since these two courses are only required for sixth-year degree in educational leadership and not intermediate administrative certification.

Table 5

*Intermediate Coursework \((N=128)\)*

<table>
<thead>
<tr>
<th>Intermediate Courses</th>
<th>Completed</th>
<th>No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Development</td>
<td>Yes</td>
<td>79</td>
<td>61.7</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>49</td>
<td>38.3</td>
</tr>
<tr>
<td>Supervision and Staff Development</td>
<td>Yes</td>
<td>66</td>
<td>51.6</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>62</td>
<td>48.4</td>
</tr>
<tr>
<td>Learning Theory into Practice</td>
<td>Yes</td>
<td>56</td>
<td>43.8</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>72</td>
<td>56.3</td>
</tr>
<tr>
<td>Curriculum Development</td>
<td>Yes</td>
<td>43</td>
<td>33.6</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>85</td>
<td>66.4</td>
</tr>
<tr>
<td>School Law</td>
<td>Yes</td>
<td>22</td>
<td>17.2</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>106</td>
<td>82.8</td>
</tr>
<tr>
<td>School Finance</td>
<td>Yes</td>
<td>15</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>113</td>
<td>88.3</td>
</tr>
</tbody>
</table>

Six credits of culminating requirements include a three-credit Internship course \((EDL 688)\), and a Seminar in Administration \((EDL 689)\). Successful completion of a formal internship satisfies the field experience requirement for provisional intermediate
certification. The student works under the joint supervision of a faculty adviser and a practicing school administrator or supervisor. The Seminar in Administration (EDL 689), focuses on problem solving in simulated field problems. This course also provides students with time for discussion of contemporary issues, application of skills, and understandings developed throughout the sixth year program. This is a required course for students who are working toward their sixth-year degree. Table 6 indicates that 15% \((N = 19)\) of the 128 respondents having successfully completed the Administrative Internship coursework and 5% \((N = 7)\) had completed the Administration Seminar coursework.

Table 6

*Advanced Coursework \((N = 128)\)*

<table>
<thead>
<tr>
<th>Advanced Course</th>
<th>Courses Completed</th>
<th>No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship</td>
<td>Yes</td>
<td>19</td>
<td>14.8</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>109</td>
<td>85.2</td>
</tr>
<tr>
<td>Seminar in Administration</td>
<td>Yes</td>
<td>7</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>121</td>
<td>94.5</td>
</tr>
</tbody>
</table>

Table 7 indicates that the mean number of educational leadership courses completed by the 128 respondents was 3.45 and the median number of educational leadership courses was 4. The number of educational leadership courses successfully completed by the respondents ranged from zero to nine with 63% \((N = 91)\) of the students successfully completing four courses (Table 7)
Table 7

Number of Courses Completed \((N=128)\)

<table>
<thead>
<tr>
<th>No. Courses Completed</th>
<th>No. Participants</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>24</td>
<td>18.8</td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>31.3</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>43.8</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>49.2</td>
</tr>
<tr>
<td>4</td>
<td>18</td>
<td>63.3</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>72.7</td>
</tr>
<tr>
<td>6</td>
<td>17</td>
<td>85.9</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>91.4</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>98.4</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Work Experience

The 128 respondents provided information on their present occupation by checking one of four boxes on The Demographic Information Form. Directions on The Demographic Information Form asked the respondents to chose one of the following occupations: teacher, administrator, related services, or other. The present occupation that 80% \((N=102)\) of the respondents checked was teacher. Of the remaining respondents, 9% \((N=11)\) were administrators, 5% \((N=6)\) were related services staff, and the category of ‘other’ represented 7% \((N=9)\). The ‘other’ category was represented by occupations such as media specialist and director of technology. Table 8 provides information about the respondents’ present occupation.
Table 8

*Present Occupation* (*N* =128)

<table>
<thead>
<tr>
<th>Present Occupation</th>
<th>No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>102</td>
<td>79.7</td>
</tr>
<tr>
<td>Administrator</td>
<td>11</td>
<td>8.6</td>
</tr>
<tr>
<td>Related Services</td>
<td>6</td>
<td>4.7</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>7.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>128</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Directions on The Experience and Background Inventory asked the respondents to indicate the number of years that they had been employed. They were given a choice of the following seven options: have never held a job, held a job less than 2 years, held a job 2 to 4 years, held a job 5 to 7 years, held a job 8 to 10 years, held a job 11 to 13 years, or held a job 14 years or more. As evidenced by Table 9, the majority, 80% (*N* =102) of the participants of this study had eight or more years of employment experience. Over half, 54% (*N* =69) of 127 participants who responded to this question indicated that they had 14 or more years of employment experience. Interestingly, only 5% (*N* =7) of the respondents had 2 to 4 years work experience and 20% (*N* =18) had 5 to 7 years of work experience.

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Table 9

*Years Employed (N = 127)*

<table>
<thead>
<tr>
<th>Years Employed</th>
<th>No.</th>
<th>Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4 Years</td>
<td>7</td>
<td>5.5</td>
<td>5.5</td>
</tr>
<tr>
<td>5-7 Years</td>
<td>18</td>
<td>14.1</td>
<td>19.7</td>
</tr>
<tr>
<td>8-10 Years</td>
<td>25</td>
<td>19.5</td>
<td>39.4</td>
</tr>
<tr>
<td>11-13 Years</td>
<td>8</td>
<td>6.3</td>
<td>45.7</td>
</tr>
<tr>
<td>14+ Years</td>
<td>69</td>
<td>53.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Experience and Background Inventory**

The mean from all the participant scores, the published mean score for that category, the standard deviation for the obtained scores, and the standard deviation difference between the obtained mean and published norm mean were obtained from the nine domains on the Experience and Background Inventory. The responses from the Experience and Background Inventory were similar to expected published norms (Baehr & Froemel, 1996) in the areas of School Achievement ($SD +.04$), College Major ($SD +.87$), Aspiration Level ($SD -1.0$), Drive/Career Progress ($SD -.47$), Leadership ($SD +.39$), Financial ($SD -.43$), General Responsibility ($SD +.15$), and Relaxation Pursuits ($SD -.17$). Vocational Satisfaction ($SD +2.12$) obtained mean score was above the expected norm (Table 10).
Table 10

*Experience and Background Characteristics (N=127)*

<table>
<thead>
<tr>
<th>Domain</th>
<th>Obtained Mean</th>
<th>Published Norm Mean</th>
<th>Standard Deviation from Obained Scores</th>
<th>+/- Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Achievement</td>
<td>2.67</td>
<td>2.58</td>
<td>2.09</td>
<td>+.04</td>
</tr>
<tr>
<td>College Major</td>
<td>5.21</td>
<td>3.49</td>
<td>1.97</td>
<td>+.87</td>
</tr>
<tr>
<td>Aspiration Level</td>
<td>2.06</td>
<td>2.97</td>
<td>1.93</td>
<td>-.47</td>
</tr>
<tr>
<td>Drive/Career Progress</td>
<td>1.26</td>
<td>2.72</td>
<td>1.46</td>
<td>-1.0</td>
</tr>
<tr>
<td>Leadership</td>
<td>2.18</td>
<td>1.71</td>
<td>1.19</td>
<td>+.39</td>
</tr>
<tr>
<td>Vocational Satisfaction</td>
<td>5.84</td>
<td>2.85</td>
<td>1.41</td>
<td>+2.12</td>
</tr>
<tr>
<td>Financial Responsibility</td>
<td>4.37</td>
<td>5.20</td>
<td>1.93</td>
<td>-.43</td>
</tr>
<tr>
<td>General Responsibility</td>
<td>5.60</td>
<td>5.29</td>
<td>2.06</td>
<td>+.15</td>
</tr>
<tr>
<td>Relaxation Pursuits</td>
<td>3.38</td>
<td>3.67</td>
<td>1.68</td>
<td>-.17</td>
</tr>
</tbody>
</table>

The 127 respondents were 2.12 standard deviations above the published norms in the domain of Vocational Satisfaction. The Vocational Satisfaction domain has been defined by the authors of the Experience and Background Inventory (Baehr & Froemel, 1996) as “Strong Satisfaction with a vocation which is compatible with the individual’s training and education. The individual has generally done well in college, holds a graduate degree and interacts with other practitioners in the field” (p. 2).
Three of the eight Vocational Satisfaction domain questions on the Experience and Background Inventory related to educational degree that the participants obtained, with points given to participants who had advanced degrees of Master's and above. This level of educational degree, however, is very typical of educational leadership students since a Master's degree is required before a student can enroll in the Leadership Program. To matriculate in the Intermediate Administrator certification program at Southern Connecticut State University, the School of Graduate Studies catalog (SCSU, 2002) indicates: “Candidates must have earned a master’s degree” (p. 94). This area appears to be above the norm group; hence the high mean may not be an indication of vocational satisfaction as much as it represents the necessary requirements for students in the Educational Leadership Program. Participants scored highly on the question related to their jobs being mostly professional/managerial. One hundred fifteen respondents out of 125 scored a point on this question. The selection process that was required to get into the program as described by the Southern Connecticut State University, the School of Graduate Studies catalog (SCSU, 2002), “Prior leadership experience and evidence of three years teaching experience” (p. 94), would bias the answers to this question. Hence, the sample in this study may have scored above the norm in Vocational Satisfaction due to the inherent characteristics of this sample.

Reflective Judgment

The dependent variable for this study, reflective judgment, was assessed using the Reasoning about Current Issues Test. This paper-and-pencil instrument has two sections: Essay Discrimination and Endorsement of Justification, each of which is scored separately.
Essay Discrimination Scores

In the essay discrimination section of The Reasoning about Current Issues Test the participants in this study were asked to take on the hypothetical role of an instructor of a college writing class. They were given assigned writing topics and then asked to consider seven pairs of student essays. Each pair of essays was written to represent reasoning from two contrasting levels of the Reflective Judgment Model. For each essay pair, participants were asked to indicate, via Likert-format questions, which essay demonstrates more complex reasoning, a better understanding of the central issues involved, or how scientists make conclusions about this issue. A single Discrimination score (Discrim) is reported in Table 11. This score is based on items from all of the essay comparisons. The Discrim score is a count of the number of correct discriminations the respondent made between the essay comparisons in this section of the test. A point was awarded every time a participant correctly identified the more sophisticated essay as better; no point was awarded if the person said that two essays were the same; and a point was subtracted if they incorrectly identified the less complex essay as better. Scores on the Discrim section of the Reasoning about Current Issues Test can range from -12 to +12. The participants in this study obtained Discrim scores that ranged from -9 to +10. Table 11 shows the distribution of Discrim scores from all respondents in the study with 31% (N= 40) of the respondents obtaining a Discrim score of 0 to -9, while 54% of the participants (N= 83) scored between +2 and +10 on the Discrim section of The Reasoning about Current Issues Test.
Table 11

*Discrimination Scores (N=128)*

<table>
<thead>
<tr>
<th>Discrim Score</th>
<th>No.</th>
<th>Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>-9.00</td>
<td>1</td>
<td>.8</td>
<td>.8</td>
</tr>
<tr>
<td>-7.00</td>
<td>1</td>
<td>.8</td>
<td>1.6</td>
</tr>
<tr>
<td>-6.00</td>
<td>3</td>
<td>2.3</td>
<td>3.9</td>
</tr>
<tr>
<td>-5.00</td>
<td>1</td>
<td>.8</td>
<td>4.7</td>
</tr>
<tr>
<td>-4.00</td>
<td>1</td>
<td>.8</td>
<td>5.5</td>
</tr>
<tr>
<td>-3.00</td>
<td>5</td>
<td>3.9</td>
<td>9.4</td>
</tr>
<tr>
<td>-2.00</td>
<td>5</td>
<td>3.9</td>
<td>13.3</td>
</tr>
<tr>
<td>-1.00</td>
<td>13</td>
<td>10.2</td>
<td>23.4</td>
</tr>
<tr>
<td>0.00</td>
<td>10</td>
<td>7.8</td>
<td>31.3</td>
</tr>
<tr>
<td>1.00</td>
<td>7</td>
<td>5.5</td>
<td>37.5</td>
</tr>
<tr>
<td>2.00</td>
<td>11</td>
<td>8.6</td>
<td>46.1</td>
</tr>
<tr>
<td>3.00</td>
<td>16</td>
<td>12.5</td>
<td>58.6</td>
</tr>
<tr>
<td>4.00</td>
<td>9</td>
<td>7.0</td>
<td>65.6</td>
</tr>
<tr>
<td>5.00</td>
<td>12</td>
<td>9.4</td>
<td>75.0</td>
</tr>
<tr>
<td>6.00</td>
<td>10</td>
<td>7.8</td>
<td>82.8</td>
</tr>
<tr>
<td>7.00</td>
<td>6</td>
<td>4.7</td>
<td>87.5</td>
</tr>
<tr>
<td>8.00</td>
<td>7</td>
<td>5.5</td>
<td>93.0</td>
</tr>
<tr>
<td>9.00</td>
<td>2</td>
<td>1.6</td>
<td>94.5</td>
</tr>
<tr>
<td>10.00</td>
<td>7</td>
<td>5.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 12 shows that the respondents in this study had a Discrim mean score of 2.6. The Discrim mean score from the norm group was 6.6, indicating the mean Discrim score of the sample population in this study was 1.2 standard deviations below the norm meanDiscrim score. This comparison to the norm should be viewed with caution, as the norm population is limited, representing only 46 graduate level students from two universities. The Discrim score is unique to the Reasoning about Current Issues Test and because this test is relatively new, the number of advanced graduate students who have
used this instrument is relatively small. The Reflective Judgment Interview has been used on more graduate students and therefore, it has a larger norm group of advanced graduate students. Unfortunately, the Reflective Judgment Interview only provides Endorse scores and not Discrim scores. Hence, for purposes of this study, it may be more appropriate to make comparisons to the norm population using scores from the Endorse section of the Reasoning about Current Issues Test rather than the Discrim section of the Reasoning about Current Issues Test.

Table 12

*Means for Discrim Score (N =128)*

<table>
<thead>
<tr>
<th>Instrument Norm Scores</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean of Norm Scores</td>
<td>6.6</td>
</tr>
<tr>
<td>Standard Deviation of Norm Scores</td>
<td>3.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Obtained Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean of Obtained Scores</td>
</tr>
<tr>
<td>Standard Deviation of Obtained Scores</td>
</tr>
</tbody>
</table>

**Endorsement of Justifications Scores**

In the second part of the Reasoning about Current Issues Test, participants are shown five ill-structured problems and requested to read 10 statements that represent different levels of sophistication according to the Reflective Judgment Model. Participants are asked to rate each statement on a 4-point scale in terms of how closely it resembles their own thinking about the problem, and then they are asked to rank three
statements that most closely resemble their own thinking. An Endorse score is an estimate of the level most often ranked as most similar to their thinking, and it can range from 1 to 7. Reasoning in stages 1, 2, and 3 of the Reflective Judgment Model is considered pre-reflective. Individuals reasoning with pre-reflective assumptions do not acknowledge or in some cases even perceive that knowledge is uncertain. The reasoning associated with stages 4 and 5 is labeled quasi-reflective. Individuals using the assumptions associated with these stages recognize that some problems are ill-structured and that knowledge claims about them contain an element of uncertainty. Although they use evidence, they do not understand how evidence entails a conclusion; thus they have difficulty when they are asked to draw a reasoned conclusion or to justify their beliefs. King and Kitchener (1994) use the label reflective to describe the reasoning characterized by stages 6 and 7 of the Reflective Judgment Model. People who reason within these stages argue that knowledge is not a "given" but must be actively constructed and that claims of knowledge must be understood in relation to the context in which they were generated. They also believe that while judgments must be grounded in relevant data, conclusions should remain open to reevaluation.

Table 13 represents the range of Endorse scores and the mean Endorse scores of the participants in the study and the mean scores of the norm group. Two participants who completed the Discrim section of the Reasoning about Current Issues Test did not complete the Endorse section, hence the total number of Endorse scores is 126. The respondents ranged in level most often endorsed from 3.2 (pre-reflective stage) to 6.5 (reflective stage). A mean of 5.3 (quasi-reflective) and standard deviation of .61 was obtained from the study respondents. The mean Endorse score of the respondents in this
study was lower than the norm group mean (-.95 standard deviation), but still within an acceptable range. It should be noted that the Reasoning about Current Issues Test has only been normed on 46 graduate students. This sample size may be too small to base a comparative judgment. There is another norm for Endorse scores using the Reflective Judgment Interview as the measurement tool. The mean norm score for advanced graduate students using the Reflective Judgment Interview measure is 5.3, the same as the mean score for the sample in this study.

Table 13

*Mean and Standard Deviation of Stage Most Often Endorsed (N=126)*

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Norm Scores</th>
<th>Obtained Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>5.86</td>
<td>5.30</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.59</td>
<td>.61</td>
</tr>
</tbody>
</table>

None of the respondents scored in pre-reflective stages 1 or 2 and 5% (N=6) of the respondents were in stage 3, the pre-reflective level (Table 14). In this level, they view knowledge as absolutely certain and obtained from authorities or temporarily uncertain and only personal beliefs can be known until absolute knowledge is obtained. Their beliefs are justified, references to authorities' views are certain, answers exist and if
they do not exist, beliefs are defended as personal opinion because the link between evidence and beliefs is unclear.

The majority of the participants scored in the quasi-reflective thinking stages (4 and 5), with 81% ($N=102$) in either stage 4 or 5 (Table 14). This reflective judgment level is characterized by a view of knowledge that is contextual and subjective because it is filtered through a person’s perceptions and criteria for judgment. Only interpretations of evidence, events, or issues may be known. Beliefs are justified within a particular context by means of the rules of inquiry for the context and by context-specific interpretations of evidence. Specific beliefs are assumed to be context specific or are balanced against other interpretations, which complicate and sometimes delay conclusions. Table 14 indicates that 19% ($N=24$) of the participants scored in stage 4 with a range of 4.0-4.9, and of these stage 4 participants, 19 scored in the upper range of stage 4 with scores ranging from 4.58 to 4.90. Over half of the participants, 62% ($N=78$), scored at stage 5, the quasi-reflective thinking stage. Scores in stage 5 ranged from 5.00 to 5.94 (Table 14).

The final and more advanced stage of reflective judgment is the reflective thinking stage (6 and 7). This stage is characterized by knowledge viewed as the outcome of a process of reasonable inquiry by which solutions to ill-structured problems are constructed. The adequacy of those solutions is evaluated in terms of what is most reasonable or probable according to current evidence, and is reevaluated when relevant new evidence, perspectives, or tools of inquiry become available. Beliefs are justified probabilistically based on a variety of interpretive considerations such as: weight of the evidence, explanatory value of the interpretations, risk of erroneous conclusions,
Conclusions are defended as representing the most complete, plausible, or compelling understanding of an issue based on the available evidence. Table 14 shows that 14% (N=18) of the 126 respondents scored in stage 6, ranging from 6.00 (N=7) to 6.50 (N=1), and no participants scored in stage 7.

Table 14

Stage Most Often Endorsed (N=126)

<table>
<thead>
<tr>
<th>Reflective Judgment Stage</th>
<th>No.</th>
<th>Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-reflective stages 1 &amp; 2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pre-reflective stage 3</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Quasi-reflective stage 4</td>
<td>24</td>
<td>19</td>
<td>24</td>
</tr>
<tr>
<td>Quasi-reflective stage 5</td>
<td>78</td>
<td>62</td>
<td>85</td>
</tr>
<tr>
<td>Reflective stage 6</td>
<td>18</td>
<td>14</td>
<td>100</td>
</tr>
<tr>
<td>Reflective stage 7</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Research Question #1: Results of Regression Models

To address the research question of what educational and non-educational experiences and personal characteristics affect reflective judgment in educational leadership students, two regression models were created. To test the connection between reflective judgment and these variables, several variants of the model were estimated to gauge the robustness of the results. Most of these tested for the significance of additional variables. In the interest of parsimony, results will focus on the development of the
models using the theoretical variables that measured the educational, experiential, and personal characteristics of age, school achievement, internship, courses completed, years employed, leadership, curriculum development class, and aspiration level. As discussed in chapter 3, these variables were selected on the basis of research on reflective judgment (King & Kitchener, 1994) and reflection (Osterman & Kottkamp, 1993; White & Lester, 1987).

The quantitative data were analyzed to answer the question: What are the educational, experiential, and personal characteristics that contribute to the reflective judgment in educational leadership students? I was primarily interested in testing the null hypothesis that no combination of independent variables contributes to the development of reflective judgment in educational leadership students. Six independent variables were found to contribute to reflective judgment in educational leadership students in two regression models, thus the null hypothesis that no independent variable or combination of variables would contribute to reflective judgment was rejected.

Model 1

Eight theoretically based independent variables of school achievement, internship, educational leadership courses completed, years employed, age, curriculum development class, leadership, and aspiration level, were entered into a multiple regression with Endorse score as the dependent variable. The regression analysis using these variables was significant at .001 and could account for 20% \( R^2 = .201 \) of the variability in reflective judgment as measured by the Endorse scores. School achievement (-.22) and aspiration level (-.22) had a significantly negative effect on reflective judgment. Curriculum development class had a significantly positive effect (.30) on reflective judgment.
judgment. The variables of years employed and age did not have a significant effect on reflective judgment. This finding was somewhat surprising since age in particular has a strong relationship to reflective judgment in the literature (King & Kitchener, 1994; Wood et al., 2001). Dallal (2001) points out that sometimes high correlations among predictors will have the effect that "predictors with known, strong relationships to the response will not have their regression coefficients achieve statistical significance" (p. 3). The correlation between these two variables was moderately high (.60) and, therefore, this model with both age and years employed had a multicollinearity problem. Kennedy (1998) indicates that there are two options when this occurs: Do nothing or incorporate additional information. He suggests that if the significance is obtained and the $t$ statistic of each the variables is greater than 2, the researcher can choose the "do nothing option." In this study, the $t$ statistic for years employed was .891 and therefore the option of doing nothing was not used. Kennedy (1998) suggests that the other option of incorporating more data can be accomplished in a few different ways including obtaining more data, forming a principal component, or dropping a variable. The first two options were considered and dismissed because of logistics and the inappropriateness of grouping these two variables. So, a second regression was run without years employed and with age. This regression has an $R^2$ of .196 and an adjusted $R^2$ of .147. The same variables that were significant in the previous regression were also significant in this regression, but age also became significant (.30). The $t$ statistic for age was 2.5, indicating that the collinearity problem no longer existed for that variable. A third regression was run taking out age and putting in years of employment. The $R^2$ was .180 and adjusted $R^2$ was .130. All previous variables continued to be significant and years employed was significant.
(.17). The $t$ statistic for years employed was 2.0, indicating that the collinearity problem for that variable no longer existed when age was taken out of the regression.

The regression that included age without years employed was used for the model to reduce multicollinearity and because the $R^2$ and adjusted $R^2$ and positive beta weight (.21) were greater with age than with years employed (Kennedy, 1998; Mertens, 1998). Theoretically, age provides a more encompassing measure of experience, both educational and work experiences. It is important to note, however, that years employed does have some effect on reflective judgment. This will be discussed further in chapter 5.

The model is significant at .001 and accounts for 20% ($R^2 = .196$) of the variation in the dependent variable reflective judgment, as measured by the Endorse score. Curriculum development class was significant at .03 with a positive effect on the Endorse scores of 30%, indicating that students who successfully completed the Curriculum Development class scored higher in reflective judgment as indicated by the Endorse scores than students who did not complete the class. The three-credit Curriculum Development class is defined in the Southern Connecticut State University School of Graduate Studies Catalog, (2002) as providing "basic principles and practices of instructional leadership in the cycle of curriculum development and change. Application of knowledge to current and future issues on the local, state, and national scene" (p. 97).

School achievement, a domain assessed by the Experience and Background Inventory is defined by its authors (Baehr & Froemel, 1996) as a stimulating start in elementary school, a general liking for school subjects, and freedom from hampering study habits. This pattern leads to rankings in the top 10% in high school, listings on the honor roll, and the individual’s general satisfaction with school performance. (p. 1)
School achievement had a negative effect on the dependent variable (-.27) in model I. Aspiration level, another variable measured by the Experience and Background Inventory had a significantly negative effect (-.23) on the dependent variable in this study. The authors of this instrument (Baehr & Froemel, 1996) describe persons who score highly in this domain: they “have as their major considerations of choice of vocation ready availability of jobs, the possibility of rapid career advancement, high anticipated earnings, and the possibility of working independently in a high social status occupation” (p. 2). The independent variables of leadership, internship, and number of courses completed were entered into the regression because of evidence in the literature of their impact, but none of these variables had a significant effect on reflective judgment as indicated by the Endorse scores (Table 15).

Table 15

Model 1. Regression Analysis With Endorse Score as Dependent Variable (N=124)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tolerance</th>
<th>Beta</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Achievement</td>
<td>.96</td>
<td>-.23</td>
<td>.009**</td>
</tr>
<tr>
<td>Internship</td>
<td>.59</td>
<td>.08</td>
<td>.780</td>
</tr>
<tr>
<td>Courses Completed</td>
<td>.33</td>
<td>-.19</td>
<td>.200</td>
</tr>
<tr>
<td>Age</td>
<td>.97</td>
<td>.21</td>
<td>.013*</td>
</tr>
<tr>
<td>Curriculum Development Class</td>
<td>.36</td>
<td>.30</td>
<td>.036*</td>
</tr>
<tr>
<td>Leadership</td>
<td>.90</td>
<td>.10</td>
<td>.245</td>
</tr>
<tr>
<td>Aspiration Level</td>
<td>.93</td>
<td>-.23</td>
<td>.009**</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01.
Model II

A second regression analysis was conducted using the Discrim scores from the Reasoning about Current Issues Test as the dependent variable measuring reflective judgment. Model II depicted in Table 16 accounts for 14% ($R^2 = .136$) of the variability in Discrim scores. The regression analysis with seven independent variables was significant at .01. Two independent variables, educational leadership courses completed (-.33) and aspiration level (-.26), had a significant negative effect on the dependent variable, reflective judgment as measured by the Discrim score. Internship had a significant positive effect (.27) on the dependent variable. School achievement, curriculum development, years employed, and leadership did not have a significant effect on reflective judgment Endorse scores. An additional regression was run to determine the outcome if age were in the model and years employed taken out due to multicollinearity. In this regression, age was also not significant and the adjusted $R^2$ decreased. Because the adjusted $R^2$ increased with years employed and decreased with age, the guideline for empirical contribution of independent variables was followed (Kennedy, 1998; Mertens, 1998) and years employed was utilized in Model II instead of age.

There was a positive effect on reflective judgment for students who successfully completed an internship in their Educational Leadership program. The internship variable accounted for 27% of the variability in the reflective judgment model. Internship is defined in the Southern Connecticut State University School of Graduate Studies Catalog (2002) as:

An internship is an individual experience in an educational setting under the supervision of an experienced administrator or supervisor and a faculty advisor. Experiences develop the student’s competence in creating change in accordance with the human, conceptual, and technical skills learned in prior courses. The internship
requires a minimum of 20 days and 200 hours distributed throughout the calendar year. Interns work with faculty advisement, in a school district, under the guidance and direction of a mentor superintendent. Interns, mentors, and faculty members participate in the culminating seminar. (pp. 96, 97)

The number of courses completed had a significant negative impact on reflective judgment, indicating that students with more Educational Leadership courses had lower reflective judgment as measured by the Discrim score than those who had fewer Educational Leadership courses. Number of courses accounted for 33% of the variability in Discrim score. Model II is further described in Table 16.

Table 16

*Model II, Regression Analysis With Discrim Score as Dependent Variable (N=126)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tolerance</th>
<th>Beta</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Achievement</td>
<td>.96</td>
<td>-.14</td>
<td>.107</td>
</tr>
<tr>
<td>Internship</td>
<td>.59</td>
<td>.27</td>
<td>.018*</td>
</tr>
<tr>
<td>Courses Completed</td>
<td>.32</td>
<td>-.33</td>
<td>.029*</td>
</tr>
<tr>
<td>Curriculum Development</td>
<td>.35</td>
<td>.14</td>
<td>.321</td>
</tr>
<tr>
<td>Leadership</td>
<td>.89</td>
<td>-.01</td>
<td>.900</td>
</tr>
<tr>
<td>Aspiration Level</td>
<td>.92</td>
<td>-.26</td>
<td>.004**</td>
</tr>
<tr>
<td>Years Employed</td>
<td>.96</td>
<td>.06</td>
<td>.451</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01.

A review of Models I and II indicates that there are similarities in the results when looking at the effect of the independent variables. In both models aspiration level
significantly affected the dependent variables in a negative way. Educational leadership courses completed, although only significant in Model II, had a negative beta weight in both models. Internship and curriculum development class, while significant in only one model, had positive beta weights in both models.

**Description of Qualitative Sample**

Five out of 18 participants who met the criterion for focus group participation attended the focus group interview session. The participants represented three males and two females. Three of the participants were in the advanced stage of the leadership program and involved in the internship experience. All students had obtained a Master's degree. One student was in the beginning of the program and the other in the intermediate part of the program. Four of the students were enrolled in the Southern Connecticut State University Educational Leadership Program, and one of the participants was enrolled in a Leadership program at another state university. Participants' ages ranged from 32 to 52 with a mean age of 40. All participants worked in public school districts in the state of Connecticut. One participant was employed as a speech and language pathologist, one was an elementary teacher, one taught high-school English and was also head of the English department, one participant taught math in middle school, and the fifth participant was director of technology for a school district.

The focus group interview data were analyzed to determine the answer to the second research question of this study, What do educational leadership students who are high-scoring reflective thinkers believe contributed to their reflective judgment? Data analysis included a review of a 45-minute transcript of the focus group interview and a review of the written responses from the five focus group participants. The 45-minute
focus group audiotape was transcribed, and participant notes were organized. Second, to get a general sense of the information and a sense of the meaning, I read through all the information and wrote notes to get a general impression. The third step of the analysis process, coding the information, was done individually and then collaboratively with an independent coder.

Research Question #2

What do high reflective-thinking educational leadership students believe contributed to their reflective judgment? The focus group participants discussed the factors that they believed contributed to their reflective judgment. I categorized the factors into five themes in conjunction with an independent coder. For discussion purposes they have been grouped and further described below as: knowledge of multiple perspectives, influence of others, social dynamics, prior experiences, and personal attributes. Comments from the group participants have been included with use of pseudonyms.

Knowledge of Multiple Perspectives

Participants discussed the importance that knowledge of a variety of issues and perspectives had for them in enhancing reflective thinking. Three of the participants indicated that they read often and that their reading selection was wide and varied. Sam stated, “I am well read across different disciplines. It is not that I have read a lot about leadership and thinking, but there are a lot of things I can pull from in my own knowledge that has proved to be very helpful when you start making decisions.” In addition to reading, the participants indicated that they had a need to know about things
and people and that this need drove them to find out as much about an issue or situation
as possible. Lauren explained, “I am interested in learning. I am interested in the
perspective of others. I like finding new ways to think about things.” Another
participant, Rhonda, indicated, “The older I get, the better I have gotten about
interjecting myself in this person’s situation, that person’s situation. I get different
perspectives.”

Each participant indicated that the educational experiences that were most helpful
to them in enhancing reflection were the ones that had them examine a subject or issue
from multiple perspectives. Group work, scenarios, role-playing, reflection with
feedback, and problem-solving opportunities were discussed as methods that they found
helpful. In addition, they indicated that some reflective activities were not effective. A
discussion in the focus group between Rhonda and Alex went as follows: Rhonda pointed
out “they ask for a lot of reflective pieces, but they are kind of . . . you know, performa.”
Alex replied, “You need a reflection, you need to produce it.” Rhonda nodded, stating,
“And you never get anything back either.”

Influence of Others

Participants discussed the important role that other people played in their
development of reflection. Parents, work colleagues, supervisors, and spouses who
modeled reflective thinking were seen as very influential. Rhonda stated, “I am
surrounded by people who like to process things out loud, people at work, my husband.
So that is part of how you figure out what the consequences will be talk to other people
who are good critical thinkers to figure out the consequences.” Lauren commented that
she had "fantastic parents, wonderful role models and mentors, all of whom I think were
great reflective thinkers."

Social Dynamics

Participants indicated a desire to understand social situations and that this desire
led them to develop their reflective thinking skills. In some cases the desire was based on
the need to know the consequences prior to acting. Most described reflection as helping
them to understand the consequences of action on a situation. They saw this as necessary
for survival in life situations. Bill pointed out, "I am constantly working out in my mind
how it will play out, what I have to do to eliminate the problem or stop it in its tracks,
those kinds of things." Reflection was seen as a necessary skill to help a person figure out
the social dynamics of a situation. Bill continued, "So that if we are going to ask someone
to do something, I will have an idea what they think of it, what their objections would be,
and what they like about it ... those types of things." Further discussion on the
importance of understanding social context resulted in an agreement among the
participants that reflection helps a person think through the social dynamics of a situation,
provides for understanding of the consequences of actions, and ultimately helps a person
get things accomplished. Rhonda mentioned, "I don't care what people think, I like to get
things done. I like to get them done in as effective way as possible, which means taking
into account how people feel." Problem solving was discussed as a key reason why they
felt that reflective thinking was necessary at work or at home. Lauren stated, "I absolutely
love problem-solving." As a response to this statement Bill said, "The thing you said
about problem solving, I feel the same way. I like the idea of resolving problems. I like to
approach it in a concrete way, using the reflective process, thinking about dynamics. I get
pleasure out of looking at something that needs resolved and ultimately bringing it to fruition.”

Prior Experiences

Each participant discussed the importance of their prior experiences toward explaining their reflective thinking skills. The experiences included military, family, childhood, friends, education, and work. Alex candidly discussed his thoughts regarding his own development: “I thought about what experiences I had that taught me how to be a reflective thinker, because I am not one naturally. There is a military school I went to, Officers Candidate School, that made you think about the consequences of every decision, all the time, not just you but the people you are leading. Better to make a good decision in a timely way than the best decision too late, but use as much time as you can to make a good decision for everyone. So, while I am not naturally a reflective thinker, that experience helped me.” Sam viewed his background experiences in communication as helpful in developing his reflective skills. “I have had extensive background in communication both interpersonal and organizational undergrad and grad work. So, there you possibly go through research methodology, how is it going to work and how well it will work out.” The impact of both work and community experiences on reflection was discussed in the focus group, and Rhonda explained how both areas contributed to her reflective judgment. “Part is work experiences, working on situations in the department and part also is political experiences. I am on the Board of Education.” Bill saw his childhood experiences as being very influential and provided further insight on the importance of prior experience. “For me it goes back to my childhood. I had three other siblings... . . . It was a survival thing—Learning how to try to understand and manipulate
your environment, manipulate your parents, and take care of your siblings at the same
time."

It is important to note that the students in this focus group saw a combination of
these prior experiences as contributing to reflective judgment over a period of time. Most
indicated that reflective thinking was something that they had gotten in the habit of
doing. "It is a habit of mind," as Rhonda pointed out.

Personal Attributes

The participants openly discussed some personal attributes that they felt had
contributed to their reflective thinking. Curiosity to know information, intuition, love of
complex problems, ability to see the "big picture," persistence, satisfaction in finding
answers and solving problems, and a desire to anticipate consequences were discussed as
contributory to their reflective judgment. Curiosity to know more was a strong motivator
for many of the students in the focus group. Sam indicated, "When you talk about the
greatest impact, it is that thirst for knowledge. The desire to want to know more about
any situation you are in." Lauren emphasized the interest she had in other people. "I am
really interested in the experience of others. I think I have a fair amount of intuition as for
how things work." Adam described himself as "a big picture person. I prefer to look at
the horizon than where my feet are now." Lauren and Rhonda also agreed that they too
were "big picture" people.
CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to determine if educational, experiential, and personal characteristics affect the reflective judgment of educational leadership students. The literature has demonstrated that reflection is a useful tool in creating, improving, and maintaining schools as learning communities. For schools to provide optimal reflective learning experiences, each person in the school community has a responsibility to use and model reflective practices. The ability to reason about complex issues using reflective judgment is especially important for educational leaders in their role as problem solver and supervisor of staff (Alder, 1991; Calderhead, 1989; Cutler et al., 1989; King & Kitchener, 1994; Nolan & Huber, 1989).

Educational Leadership programs serve an important role in fostering reflective practice in their educational leadership students, who will soon be school administrators. If college programs are to enhance and support the development of reflective judgment, it is important that they know what contributes to reflective judgment in their students. Although literature on reflective judgment and the contributory factors to reflective judgment in graduate educational leadership students is limited, the research on reflective thinking does show evidence that a combination of educational, experiential, and personal factors contributes to the development of reflective thinking in undergraduate
and graduate college students, thus lending credence to this study's hypothesis that a combination of these variables would affect the reflective judgment of educational leadership students (Bowen, 1989; Brabeck, 1983; Polkosnik, 1985).

The Reflective Judgment Model theoretical framework by King and Kitchener (1994) was utilized in this study to examine the educational, experiential, and personal characteristics that contribute to reflective judgment in educational leadership students. There is longitudinal and cross-sectional research spanning the past 20 years that supports the Reflective Judgment Model and its contribution to understanding reflective judgment in students. This research documents the slow and gradual increase in reasoning about complex problems using seven stages of assumptions about knowledge. Research on reflective judgment has found that age, educational level, intellectual development, and psychosocial attributes positively affect the reflective judgment in students (King & Kitchener, 1994; Wood et al., 2001). This current study expands the literature by providing insight into educational leadership programs regarding factors that contribute to the development of reflective judgment in their students. It also provides useful data regarding reflective judgment and advanced graduate students, a population that has been studied only to a limited degree within the reflective judgment research.

Two research questions were generated in order to determine the contribution of a variety of factors to the development of reflective judgment in educational leadership students.

Research question 1: What experiential, educational, and personal characteristics contribute to the development of reflective judgment in educational leadership students?
Research question 2: What do high reflective thinking educational leadership students believe contributed to their reflective judgment?

To answer these questions a mixed method research design was used. In the quantitative method phase of the study, 128 volunteer educational leadership students from Southern Connecticut State University were administered three paper-and-pencil instruments in a 1 1/2-hour period during their Educational Leadership class. Independent variables were assessed using the Experience and Background Inventory (Baehr & Froemel, 1996) and Demographic Information Form. The dependent variable, reflective judgment, was measured by the Reasoning about Current Issues Test, an instrument based on the Reflective Judgment Model (King & Kitchener, 1994).

The sample in the quantitative phase of the study represented 39% males and 61% females with a mean age of 38 and an age range of 24 to 65. Eighty-one percent of the participants indicated that they were enrolled in the Educational Leadership program at Southern Connecticut State University. Of the remaining students, 16% were not enrolled in the program and 2% had already received their administrative certificate and were continuing courses towards their sixth year degree. The majority of the students in the study were in the intermediate stage of their program, with 91 students (63%) successfully completing 4 of the 10 courses required for administrative certification. Eleven participants were in the advanced stage of the program, having completed 8 or 9 of the required courses. The mean number of courses completed by the 128 students in the study was 3.45. One hundred and two (80%) students indicated their present occupation to be teacher, 11 (9%) were administrators, 6 (5%) were related services personnel, and 9 (7%) indicated their occupation to be in the "other" category, indicating...
professions such as media specialist, and director of technology. Eighty percent of the students had 8 or more years of employment and over half of the students had 14 or more years of employment. All students enrolled in the educational leadership program had a Master's degree. This requirement is somewhat unique to this University and not typical of other educational leadership programs for certification in which students can work on their Master's degree, while gaining credits for an administrative certificate.

Two sets of scores for the dependent variable were obtained from the Reasoning about Current Issues Test, an Endorse score and a Discrim score. Students were shown five ill-structured problems and requested to read 10 statements representing different levels of reasoning. The Endorse score, an estimate of the level most often ranked by the participant as most similar to their thinking provides a reflective judgment stage from 1 to 7. Seven stages, described further in chapter 1, are based on the Reflective Judgment Model (King & Kitchener, 1994) as follows: pre-reflective (stages 1, 2, and 3), quasi-reflective (stages 4 and 5), and reflective (stages 6 and 7). Students in this study had a mean reflective judgment level of quasi-reflective, stage 5.3, and their scores ranged from 3.2 (pre-reflective stage) to 6.5 (reflective stage). Eighty-one percent of the students scored at the quasi-reflective level, indicating that knowledge is gained through evaluating the available evidence and that judgments involve personal evaluation of data. People holding these assumptions acknowledge differences in types of problems, but are at a loss as to how to solve them because of their ambiguity. An interesting question that requires further study is the question of occupational need and practice for higher stages of reflective judgment. In other words, because the majority of the participants in this study were teachers, do their job responsibilities require them to solve ill-structured
problems, and if so, are they encouraged to develop interpretations that are grounded in data? Are they encouraged to evaluate their interpretations of the data to determine the truth-value of a knowledge claim using such criteria as conceptual soundness, degree of fit with the data, and parsimony? Are teachers encouraged and allowed to make changes in their judgments as new data or new interpretations of data appear? Are teachers encouraged to look at curriculum, school rules, and instructional pedagogy in this light? These questions provide additional avenues for further research.

A Discrim score, based on items from essay comparisons, provides a count from -12 to +12 representing the number of correct discriminations made between essay comparisons. Discrim scores in this study ranged from -9 to +10 with a mean score of 2.6.

**Research Question #1**

Two linear multiple regressions were conducted using the dependent variables of Endorse and Discrim that represent reflective judgment on the Reasoning about Current Issues Test to determine if a combination of independent variables contributes to the development of reflective judgment in the Educational Leadership students studied. A total of seven variables was found to effect reflective judgment in these two regression models. Model I regressed the Endorse scores with significant findings at .001 that the independent variables accounted for 20% ($R^2 = .196$) of the variability in reflective judgment. Four independent variables had a significant effect on reflective judgment: Curriculum Development class ($B = .30$), school achievement ($B = -.27$), age ($B = .21$), and aspiration level ($B = -.23$). A second regression analysis, Model II was conducted using the Discrim scores from the Reasoning about Current Issues Test as the dependent variable.
dependent variable measuring reflective judgment. Model II accounted for 14% ($R^2 = .136$) of the variability in Discrim scores and was significant at .01. Three independent variables, courses completed ($B = -.33$), aspiration level ($B = -.23$), and internship ($B = .27$) had a significant effect on the dependent variable, reflective judgment. Based on the results of these regressions, the null hypothesis for research question #1, that no identified combination of experiential, educational, and personal variables contributes to the development of reflective judgment in educational leadership students, was rejected.

**Educational Effects**

**Educational Leadership Courses Completed**

The literature on reflective judgment has consistently demonstrated that the more formal schooling that high school and college students receive, the higher their reflective judgment (Bowen, 1989; Brabeck, 1983; Glatfelter, 1982; King, Wood, et al., 1990; Kitchener & King, 1981; Kitchener et al., 1993; Lawson, 1980). In the current study the number of courses completed had a negative effect in Model II, where the negative effect accounted for 33% of the variability in Discrim scores. Perhaps the most striking result of the study is that internship had a significant positive effect in the same model in which courses completed had a significant negative effect. One explanation of this result is that there was insufficient time to adequately measure reflective judgment as it relates to number of courses. Twenty-one credits are required for completion of the Educational Leadership Program and each course is 3 credits. It is possible that a student, if attending college full time, could complete 8 of the required coursework in less than a year. Thirteen studies using test-retest intervals ranging from 2 weeks (Kitchener et al., 1993) to 10 years (King & Kitchner, 1994) reveal minimal change for short-term retestings (3...
months to a year). King and Kitchener (1994) claim that the reflective judgment stage increases from early graduate students to advanced students an average of three-fourths a stage, which does not allow much variability in reflective judgment in a short time. A longitudinal study of the same participants before and after participation in an Educational Leadership program may help to answer these questions.

Another explanation for this result is that the content and pedagogy in the Educational Leadership Program do not support the learning and retention of reflective thinking. Educational Leadership programs need theories of human cognition, problem-based learning, mentors, and experiential learning (Begley, 1999). A longitudinal study would provide additional answers to the issue of content and pedagogy. It would also be useful to do a content analysis of the syllabi from the core courses to achieve a better understanding of the similarities and differences in content and pedagogy. Interestingly, the focus group participants did not indicate that their educational program was particularly useful in the development of reflective judgment, although they did state that individual experiences in some of their classes such as role-playing and case study review helped to broaden their perspectives. Alex, a focus group participant, commented, “I do think the organizational development course that asks you to look at the same organization through four different lenses and I think this kind of teaching, learning experience does help you to become more reflective because it forces you to see that there are other dynamics going on than in my own school.”

It is important to remember that the population from this study may be somewhat unusual because of the requirement that all students enrolled in the administrative certification program must have a Master’s degree. Most programs such as Indiana
University, University of Texas, University of Nevada, University of Florida, and University of Alabama require a Bachelor's degree instead of a Master's degree. Because this study is from one university and the time required for course completion may be too short to measure changes in reflective judgment and the sample population somewhat unusual, further longitudinal and cross-sectional research is needed on the effect of educational leadership courses on reflective judgment. The findings of this study do, however, remind us that educational level alone may not promote reflective judgment and that the experiences one receives inside and outside of the educational program, along with personal attributes, are important to reflective judgment growth.

**Internship**

The literature on reflection indicates that educational experiences, such as modeling, mentors, problem-based learning, field experience, reflective journaling, role-play activities, writing and giving platform feedback, narrative accounts, and reflective teaching have a contributory role in enhancing reflection in students (Alder, 1991; Clandinin & Connelly, 2000; Loughran, 1996; Osterman & Kottkamp, 1993; Reagan et al., 2000; Sparks-Langer & Colton, 1991; Zeichner & Liston, 1987).

The findings from this study support prior reflective research that there is a positive effect of internship and mentoring on reflective judgment. In the current study internship had a significant positive effect accounting for 27% of the variability in reflective judgment, indicating that students who successfully completed an internship had higher reflective judgment skills than those who did not. The internship course that the students in this study completed requires 1 year of experience as an administrator in an educational setting with an administrator as mentor and a faculty member from the
University as advisor. This course is considered an advanced level course and is one of the last two courses that students complete in the administrative certification program at Southern Connecticut State University. This internship includes a 200-hour field experience and a mentoring relationship.

Another component of this internship experience requires the student to write a reflective journal that includes a plan of action in four leadership domains, described activities and reflection of the activities. Reflective journaling has been acknowledged as an effective way to increase reflective thinking (Osterman & Kottkamp, 1993; Sparks-Langer & Colton, 1991) and, therefore, this activity along with the field experience and mentoring may be the reason why students who had been involved in the internship program had higher reflective judgment levels than those without this experience.

Because the internship experience is considered an advanced class and one of the last classes prior to receiving an administrator certificate, it is possible that the reflective judgment scores for these students could be higher because of the number of courses they had taken or the length of time they had been in the program. Interestingly, internship had a significant positive effect in Model II and in that same model, courses completed had a significantly negative effect. In Model I neither variable was significant, but both had the same effect with internship positive and number of courses negative. Based on this, it is reasonable to assume that the increase in reflective judgment for students who had the internship experience may be due to more than number of courses completed or length of time: however, additional research would provide further information.

Focus group participants discussed the importance of experience, indicating that they relied on their reflective thinking skills when they were put into situations where
problem solving was required. The literature also speaks to the importance of experience and practice in enhancing reflective judgment. Interestingly, four members of the focus group who were currently in an internship program did not perceive their internship as contributing to their reflective judgment. One reason for this was that some students indicated that there was not sufficient time for them to meet, talk to, and reflect with their mentor. Bill pointed out, “I have found them to be a veritable cornucopia of information, help, guidance. Just getting the time to sit down with them . . . I would like to spend an hour with them, using that as a springboard to get into some other things.” Yee (1997) points out, “It has been acknowledged that coaching support is needed to ensure successful implementation of newly learned skills, yet few of the leadership development programs incorporated coaching or on-site assistance” (p. 6).

The students also indicated that the internship activities include what they were already doing in their jobs. Rhonda commented, “I just started, but it is a continuation of things I was already in leadership roles in.” Bill agreed, stating, “Well, my principal is my mentor and we talk over things I am working on. It would be fun to do a real internship where you are not doing a regular job.” It is also important to remember that these students had not yet finished their internship experience and therefore their opinions may change.

**Curriculum Development Class**

The Curriculum Development class is offered as an intermediate level course in the program at Southern Connecticut State University. Prior to taking this course, students must complete six credits of beginning coursework. This class had a significant positive effect on reflective judgment in this study ($B = .30$), as measured by the Endorse
scores in Model I, indicating that students in this study who successfully completed the 
Curriculum Development class had higher reflective judgment scores than those who did 
not. The results of this study are similar to action research findings that observe a positive 
relationship between the actions of developing curriculum and reflection (DeLawter & 
Sosin, 2001; Koo, 2000).

A possible explanation for the positive effect this class had on reflective judgment 
could be that the nature of this class forces students to look at multiple perspectives. One 
of the goals of this course is that students will be able to expand their knowledge and 
understanding of the broader state and national context. The curriculum is examined from 
the point of view of a citizen, the student, an elementary, middle, and high-school 
teacher, college professor, parent, employer, and administrator. Mezirow (1990) argues 
that reflection occurs when an individual broadens their perspective. Given this, it is quite 
possible that the act of reviewing curriculum helps students to broaden his or her 
perspectives and increase their reflective judgment. DeLawter and Sosin (2001) describe 
the development of curriculum as a time when individuals think about the “taken-for-
granted” cultural and personal notions. They indicate that alternative methodology to 
curriculum development planning extends collective reflection discussion through the 
attention to multiple perspectives. Interestingly, the focus group participants also viewed 
multiple perspectives as an important contributor to their reflective judgment. Sam 
commented, “There are deeper things, just what we talked about here, different ways to 
look at a situation, political and social dynamics and how that all plays out.” Rhonda 
stated, “That is where the self reflection comes in . . . in the whole bit. Even when you 
don’t agree with the position, you are able to see it and see the perspective of the other
person.” Sam explained further, “One perspective is not what we have. If you listen to the discussion around the table, we have multiple perspectives and multiple disciplines.”

The curriculum development class also expects students to make informed decisions on curriculum using data and good reasoning skills. Students have an opportunity to practice and learn the higher reflective thinking stages. Research by King and Kitchener (1994) indicates that there is an increase in reflective judgment when students are given contextual cues and practice.

A third explanation for the higher reflective judgment scores in students who completed a curriculum development class might be the pedagogy used in this class. This course required students to do a problem-based project using reflective skills. As the literature demonstrates, case study approach, reflective thinking content, reflective journaling, and modeling of reflection are all activities that can promote reflection in students. Koo (2000) has demonstrated in her research that narrative and conversation strategies enhance reflective collaboration in the curriculum development process. This is certainly an area in need of further exploration because of the important role educational leaders play in the development and implementation of curriculum.

School Achievement

Model I results indicate that the effect of school achievement on the reflective judgment of educational leadership students was negative. High grades, top class ranking, and satisfaction with school did not contribute to high reflective judgment in the Educational Leadership students in this study. School achievement has been studied in reflective judgment research with a variety of measures such as intelligence, verbal ability, achievement scores, and grades (Glatfelder, 1982; King & Kitchener, 1994;
Lawson, 1980; Wood et al., 2001). Results have indicated moderate correlation of these variables to reflective judgment. Wood et al. (2001) found that academic performance had a pronounced effect on reflective judgment in advanced graduate students.

The results of this study are different from what previous reflective judgment research would suggest. One possible explanation is that the measure of school achievement might not reflect most recent academic performance since some of the questions related back to high-school class ranking. A second explanation of these scores is that the students with high reflective judgment were more concerned with learning than with the things that represent school achievement. For example, the students in the focus group made statements referring to their love of learning things that were multileveled and complex. The importance of grades in the learning process was never discussed by the students, although they did indicate that if there is a simple problem, they are not necessarily interested resolving it. Sam pointed out, “The more complex it gets the more excited I get about the problem. When people bring simple problems to meetings or something like that, I don’t really get involved. I just sit there and I wait for it because how we are going to get the basics done does not interest me at all.” It may be possible that the content and pedagogy that were offered to students with high reflective judgment did not interest them and their grades reflected a lack of interest or motivation.

The results of the effect of school achievement on reflective judgment present an interesting dilemma, since students are chosen for Educational Leadership programs at least in part based on their school achievement. Are Educational Leadership programs enrolling students with reflective judgment or are these students rejected because they do not have high school achievement? An additional issue involves the criteria for
administrative certification and its reliance on school achievement. Creighton and Jones (2001) point out that the Educational Leadership programs rarely look beyond grade point average when recruiting students into their programs. Further research and discussion are needed regarding the effectiveness of educational leadership enrollment and evaluation of student performance.

Personal Characteristics Effect

Age

In the current study, age was found to have a significant positive effect on reflective judgment ($B = .21$), indicating that the older participants in this study had higher reflective judgment. Studies have found that reflective judgment performance is more closely tied to educational attainment than chronological age (Glatfelter, 1982; Strange & King, 1981). Age and educational level are easily confounded. In this study, however, number of courses completed, a measure of educational attainment, had a negative effect on reflective judgment in both the regressions, while age had a positive effect in both regressions. There is sufficient research to indicate that maturation alone does not affect reflective judgment, but age brings with it life experiences, educational experiences, and changes in psychosocial development that might have a positive effect on reflective judgment. This study supports the results of previous studies that age is one of the contributory factors in the development of reflective judgment. Students with high reflective judgment from this study discussed in the focus group the interaction of age and experience on reflective judgment. Bill commented,

I have always had an interest in social dynamics since childhood. The older I have gotten, the better I have gotten about interjecting myself in this person’s situation. I get different perspectives. . . . That is where the self-reflection comes in . . . in the whole
bit. Even if you don’t agree with the position, you are able to see it and see the perspective of the other person.

It is important to mention that years employed and age when entered into the same regression were so highly correlated that they cancelled each other out and neither had a significant effect on reflective judgment. When age was taken out of the model, years employed had a significant effect. When years employed was taken out, age had a more significant effect and resulted in a higher adjusted $R^2$. Additionally, since age encompasses years employed it was decided to leave age in and take out years employed. Further discussion on this is in chapter 3.

Aspiration Level

People with high aspiration level are defined by the authors of the Experience and Background Inventory (Baehr & Froemel, 1996) as individuals whose “major considerations in the choice of a vocation are the ready availability of jobs, the possibility of rapid career advancement, high anticipated earnings, and the possibility of working independently in a high social status occupation” (p. 1). These characteristics had a significantly negative effect on reflective judgment in Model I ($B = 23$), and Model II ($B = .27$). The results of this analysis indicated that students who are focused on career advancement and status tend to score lower in reflective judgment than students who are not. However, these results do require further study before assumptions can be made. It is helpful to review the seven questions on the Experience and Background Inventory that relate to the domain of aspiration level. These seven questions ask what influenced a person’s choice of college major. Although the mean score from the participants was only -.47 standard deviation below the mean of the norm group, further review of the scores
indicates that in six of the seven questions respondents scored only 16% to 36% correct, indicating that they were not influenced by high anticipated earnings, availability of jobs, rapid career advancement, chance for steady progress, respect, prestige, or parents when choosing a college major. The opportunity for independence was the one area that did influence 59% of the respondents. One issue to consider when interpreting these scores is the fact that all of the students in this study have been in college many years with at least two degrees prior to enrollment in the Educational Leadership Program. So, these participants have made three choices of college major. It is not possible to tell from the questions and answers whether the respondents are referring to their choice of college major for Bachelor’s, Master’s, the Educational Leadership Program, or all three. This means that they could be discussing decisions they made about college major over 20 years ago. The appropriateness of this set of questions to the sample is discussed as a limitation to the study in chapter 3. Given this limitation, it is still interesting to consider the role of aspiration in the development of reflective judgment, as I have not found any studies on this in the reflective literature. Perhaps the closest connection to this is Rest’s (1986) work on moral judgment. He found that those individuals who love to learn, who seek new challenges, who enjoy intellectual stimulating environments, who make plans and set goals, who take risks, who see themselves in the large social contexts of history and institutions and broad cultural trends, who take responsibility for themselves and their environs also exhibit high reflective judgment. Jensen (1998) also found a positive relationship between need for cognition and reflective judgment in freshman and early graduate students.
Students from this study who demonstrated high reflective judgment indicated in a focus group discussion that what drives them and interests them the most is the quest to get answers, to solve problems, and to feel comfortable about end results. Sam stated,

It is the decisions that are made without the information that drive me crazy. People think that they saw or did and when you sit there and you have the actual information . . . well, that’s what I always go for. When you talk about the greatest impact, it is that thirst for knowledge . . . the desire to want to know more about any situation you are in.

The question of whether students with high reflective judgment are motivated more by the learning process and their ability to function successfully within the social context than by their social status is a provocative one. Bill referred to the importance of reflection to educational leaders as a survival skill, indicating

if you are not reflective, ultimately you are going to self-destruct. You are either going to have a nervous breakdown or get fired or something else bad is going to happen I think it is just a survival skill today in public education and if you are not reflective, it is just a matter of time before you are sunk.

**Research Question #2**

The second phase of this study was qualitative and designed to answer the second research question: What factors do high reflective thinking educational leadership students believe contributed to their reflective judgment? Two months after the students took the three paper-and-pencil instruments, five Educational Leadership students with high reflective judgment scores on the Endorse section of the Reasoning about Current Issues Test participated in a 45-minute semi-structured focus group interview. I moderated the discussion, and then an independent scorer and myself examined the transcript for themes. The following five themes were perceived by myself and an independent coder to contribute to the reflective judgment in the five highest reflective
judgment scoring students in the qualitative method phase: knowledge of multiple perspectives, influence of others, social dynamics, prior experience, and personal attributes.

These themes are well supported by the research on reflection (Clarke, 1995; Loughran, 1996; Osterman & Kottkamp, 1993; Sparks-Langer & Colton, 1991), although there is little research on these areas as they relate specifically to Educational Leadership students. It is my hope that the results of this focus group sample of Educational Leadership students will lead to further exploration into these themes.

The interaction of these themes with each other and with reflection was an important finding from the focus group. When participants were asked what had the greatest impact on their reflective judgment, they defined reflection as a “habit of mind” that evolved over the years as a result of a variety of experiences and their own personal characteristics. Sam explained, “I can’t separate it at this point. I don’t know where one aspect ends and the other begins, with respect to where I am now. I feel like I draw on as much as possible.”

Interestingly, the themes from the focus group interview have a connection to the results from the two regression models. One of the contributory themes that came out of the focus group interview was the area of personal attributes. The students discussed age as one of the attributes that contributed to their reflective judgment, and age had a significant positive effect on reflective judgment in Model I. Focus group students indicated that mentors, work colleagues, supervisors, and prior leadership experience contributed to their reflective judgment, and the internship experience had a significant positive effect on reflective judgment in Model II. Many of the components that the focus
group participants discussed are an element of the internship experience in SCSU’s Educational Leadership Program. Focus group students also viewed group work, role-playing, reflection and feedback, problem solving, and knowledge of multiple perspectives as contributing to their reflective judgment. These elements are an important part of the class in curriculum development that was found to have a significant positive effect on reflective judgment in Model I. Last, focus group participants indicated that thirst for knowledge and desire to successfully navigate the social dynamics of a situation were primary contributors to their reflective judgment and to their actions. Regression Models I and II found that factors such as career advancement and/or high paying salary had a negative effect on reflective judgment. The negative relationship between aspiration level and reflection and the comments from focus group participants provides for some initial discussions and further research on the factors that motivate educational leadership students to utilize higher stages of reflection.

Conclusions and Recommendations

In the Reflective Judgment Model, King and Kitchener (1994) contend that the way individuals reason about complex problems is based on their assumptions about knowledge and that the development of reflective judgment in students is gradual and a result of a variety of educational, experiential, and personal factors. King and Kitchener’s argument is supported by extensive longitudinal and cross-sectional research over the past 20 years utilizing The Reflective Judgment Interview and The Reasoning about Current Issues Test as measurements of reflective judgment. The participants ranged in reflective judgment level from pre-reflective (3.2) to reflective (6.5) with the mean level of the sample to be quasi-reflective (5.3). This study found two contributing educational
factors, internship and Curriculum Development class, to have a positive effect and two educational factors, school achievement and Educational Leadership courses completed, to have a negative effect on reflective judgment in Educational Leadership students. The personal characteristic of age was found to positively affect reflective judgment while aspiration level had a negative effect. The analysis accounted for 14% to 20% of the variability in reflective judgment depending upon the dependent variability used.

Results of the focus group of educational students with reflective judgment indicated the importance of interaction of knowledge of multiple perspectives, influence of others, prior experiences, personal attributes, and social dynamics to the development of their reflective judgment. Knowing the factors that contribute to higher stages of reasoning is a step towards the goal of assisting Educational Leadership programs in providing opportunities that will enhance higher levels of reasoning in their students. In this concluding section, achievement of this goal will be further discussed and four considerations for future practice in Educational Leadership programs will be presented.

First, involvement in the structured field experiences with mentoring relationships was prevalent in the literature on reflection, embedded within the focus group themes of this study (influence of others and social context), and a significant variable (internship) in Regression Model II. We in education have known since Dewey discussed the importance of experiential learning in 1933 that experience improves an individual’s ability to reflect, solve problems, and learn. McCall (1998) asserts that the majority of the skills that a leader needs are not learned in the classroom, but from experiences.

The results of research indicate that Educational Leadership students who participate in internship experiences demonstrate improved decision making,
collaborative leadership, and reflection (Begley & Uhl, 1995; Ekholm, 1992; Hallinger, 1992; Krovetz, 1995). The positive effect of internship on reflective judgment of students in this study supports previous research that if Educational Leadership programs want their students to have high-level reasoning skills, they will need to provide them with the field experiences. The importance of social dynamics in the development of reflective judgment was emphasized in the focus group discussion of this study as one of the five themes. These students indicated that being placed into situations where they had to know the consequences before acting enhanced their reflective judgment. Rhonda pointed out, “I had a lot of experiences I had gone through that required thinking through the consequences before you do them. It had gotten me in the habit of doing things that way.”

Unfortunately, field experiences such as internships, apprenticeships, or structured clinical experiences have been a part of only some Educational Leadership programs in the past decade, and for those who do have an experiential component, it is limited in scope and frequency. Most internships and field experiences for Educational Leadership students are provided once at the end of the program. If the reasoning for this placement is that the students will be better prepared for the experience, the findings of this study would not support this contention. In fact, the Educational Leadership students who completed more courses had lower reasoning skills. It would seem advisable to offer a variety of structured and well-supported field experiences throughout the Educational Leadership program to enhance reflection in “real-life” experiences as soon as possible.

Second, the importance of reflective role models in fostering reflection was evident in the focus group discussions of this study, prevalent in the research on reflection, and there was a possible implication in the results that internship with a
mentoring component had a positive effect on reflective judgment on the students in this study. While the purpose of this study was to determine the contribution of education, experience, and personal characteristics on the reflective judgment of Educational Leadership students, in considering the larger context, it is important to consider the mature and practicing school administrator and the role they play in modeling and fostering a reflective environment. Hoachlander et al. (2001) point out that “relatively little attention has been paid to strategies for further developing educational leaders once they have met the requirement for initial licensure or certification” (p. 7). Improving the reflective judgment of practicing administrators could have a positive impact on school culture and might also help to provide field experiences for Educational Leadership students that would enhance their reflective judgment through modeling and direct instruction within the social context of a school. The focus group participants repeatedly emphasized that when family, friends, supervisors, and colleagues were reflective, it had a positive effect on their reflective skills. As Educational Leadership students are placed into schools for field experience, it is important that the mentor use and teach high level reasoning skills as evidenced in this study by the comments from focus group participants and the high correlation of the mentor-supported internship to reflective judgment in the regression model.

Third, the variability of the students’ reflective judgment levels in this study was remarkable, ranging from pre-reflective to reflective levels. Additionally, the scores of 81% of the Educational Leadership students in this study were in the quasi-reflective level of reasoning. The variability in the student population and the quasi-reflective level of graduate students is documented by other studies of reflective judgment (King &
The variability of level and the lower level scores have implications with regard to the assessment and teaching of reflective thinking skills. Vygotsky (1978) believes that there is a time in which the potential for best cognitive development exists, which he terms the zone of proximal development. He indicates that the learning during the zone of proximal development is best when there is adult guidance or peer collaboration. Kroll (1992) believes that educational interventions should teach about and model higher-stage reasoning even when that is not the type of reasoning they may expect students to produce themselves. King and Shuford (1996) state,

Educators who recognize this developmental progression in their students can intentionally create learning environments that will enhance students' abilities to make reflective judgments by providing appropriate challenges (e.g. showing the evidence in support of more than one point of view), and supports (e.g. explicitly building on prior skills: acknowledging the difficulty in weighing competing explanations). (p. 7)

Because of the wide variation in reasoning that teachers may have in their class, it may be difficult to determine the level that each student is at and the best time for guidance and practice in reflection. Teachers in Educational Leadership programs should have a good understanding of the reflective judgment developmental process, know how to assess it properly, and then be able to provide appropriate interventions and opportunities to enhance students' reasoning abilities. This is supported by comments made from focus group participants who emphasized the role that social dynamics, multiple perspectives, and influence of others contributed to their reflective judgment.

Fourth, access to multiplicity of perceptions was noted as contributing to reflection in the reflective literature (Clarke, 1995; Koos, 2000; Osterman & Kottkamp, 1993) as well as a primary theme in this study’s focus group interview. The regression
model in this study also demonstrates a connection between the positive contribution of the Curriculum Development class where multiple perspectives encouraged and enhanced reflective judgment in Educational Leadership students. This study found through focus group discussion that knowledge of a variety of issues and perspectives was deemed a very important contributor to the students' reflective judgment. Each focus group participant indicated that the educational experiences most helpful to enhancing their reflective judgment were the ones in which they examined a subject or issue from multiple perspectives. Interestingly, the results of the regression analysis found that internship and the Curriculum Development class were the educational experiences that had a positive effect on reflective judgment. These experiences require the student to look at a variety of perspectives in order to make effective decisions. Hence, this study supports the need for the teacher or mentor to foster reflective judgment in Educational Leadership students by providing a variety of different perspectives.

**Recommendations for Further Research**

There is some research that links reflective practices to educational leaders who are expert school administrators. However, there is no research that I am aware of that links reflective judgment to successful Educational Leadership practices. If the Reflective Judgment Model is to have more support among college teachers and Educational Leadership students, it will be important to demonstrate its usefulness within the context of practical application within school settings. Action research studies of educational administrators utilizing high levels of reasoning and the subsequent results of these actions would provide additional information on the practical use of the Reflective
Judgment Model, thus lending credence to the importance of knowing the developmental process and the appropriate interventions.

It is important to investigate the role of motivation and need to learn on reflective judgment in Educational Leadership students. Jensen’s research (1998) begins to delve into the reasons why students use reflective judgment, looking at need for cognition as one construct. The focus group indicated that their motivation was to better manage social dynamics and their love of learning. Educational Leadership programs need to know more about what motivates their students to use reflective judgment if they are to encourage and enhance the process of reflection.

Finally, I hope that other studies will use the information from this study to explore individual longitudinal data on the development of reflective judgment in Educational Leadership students. Further exploration into the contribution of internship, curriculum development, and direct teaching interventions on reflective judgment should help to answer the question whether the positive relationship found in this study was a finding particular only to the University sample or if this finding can be generalized to other Educational Leadership students in other preparation programs.
May 31, 2002

Attn: Margaret MacDonald
61 Coles Road
Cromwell, CT 06416

Re: Protocol Review

Protocol Title: A model for the prediction of reflective judgement in the preparation of school administrators.
Protocol Number: 01-14A Department: Educational Leadership

Dear Ms. MacDonald,

Your protocol has been examined and is considered exempt from continuing IRB review. If during the conduct of your research any changes occur related to participant risk, study design, confidentiality or consent if applicable, data collection must cease and the IRB must be notified immediately so that appropriate review of the changes may be accomplished.

Good luck with your research. If the IRB can be of any assistance please do not hesitate to contact me directly. Please be sure to include your IRB number in any correspondence.

Sincerely,

Frank E. Sansone, Ph.D.
Department of Communication Disorders,
Chairperson SCSU IRB

Voice: 203 392-5958
Email: Sansone@southernct.edu
FAX: 203 392-5968

(Revised 05/14/02)
August 22, 2001

Margaret MacDonald
61 Coles Road
Cromwell, CT 06416

Dear Margaret

RE: APPLICATION FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS
HSRB Protocol #: 01-G-010  Application Type: Original  Dept: Education and Leadership
Review Category: Exempt  Action Taken: Approved
Protocol Title: Reflective Judgment Performance in the Preparation of School Administrators

On behalf of the Institutional Review Board (IRB) I want to advise you that your proposal has been reviewed and approved. You have been given clearance to proceed with your research plans.

All changes made to the study design and/or consent form, after initiation of the project, require prior approval from the HSRB before such changes can be implemented. Feel free to contact our office if you have any questions.

The duration of the present approval is for one year. If your research is going to take more than one year, you must apply for an extension of your approval in order to be authorized to continue with this project.

Some proposal and research design designs may be of such a nature that participation in the project may involve certain risks to human subjects. If your project is one of this nature and in the implementation of your project an incidence occurs which results in a research-related adverse reaction and/or physical injury, such an occurrence must be reported immediately in writing to the Human Subjects Review Board. Any project-related physical injury must also be reported immediately to the University physician, Dr. Loren Hamel, by calling (616) 473-2222.

We wish you success as you implement the research project as outlined in the approved protocol.

Sincerely,

Michael D Pearson
Graduate Assistant
Office of Scholarly Research

(Office of Scholarly Research, Graduate Dean's Office, (616) 471-6246)
Andrews University, Berrien Springs, MI 49104-1792

TOTA: P.01
Dear Phil:

Enclosed is the first shipment of Reasoning about Current Issues Tests that I would like you to score. There is a total of 107 RCIs in this shipment. The participant ID # is on the upper right hand corner of each test.

The tests I am sending are copies. If you have difficulty reading a response please contact me and I will look at the original.

As you know, I will be using this data for a dissertation research on reflective judgment so I would appreciate you sending me the process by which you score these tests as well as the raw data from your scoring.

You had mentioned that you would send me some information on a study that would be relevant to my investigation, my address is Peg MacDonald
61 Coles Rd Cromwell, CT 06416

Thank you again for your assistance in the scoring process. I look forward to the results in a few weeks. Feel free to contact me at 860-635-4130 or email marmac9949@aol.com

Sincerely,

Margaret MacDonald
August 6, 2002

Dear Phil:

Enclosed are 21 Reasoning about Current Issues Tests that I would like you to score. This is the last batch for scoring. Thank you again for your assistance.

Feel free to contact me if you have any questions.

Sincerely,

[Signature]

Margaret MacDonald
May 27, 2003

Peg MacDonald
Andrews University
Berrien Springs
Michigan 49104-0102
Attn: Ms MacDonald
Reference: Request for Permission – Experience and Background Inventory (EBI)

NCS Pearson, Inc. being the exclusive publisher and distributor of the Experience and Background Inventory (EBI) hereby grants you permission to cite the results of your research study administrations of the Inventory in your dissertation for Andrews University entitled: “A STUDY TO DETERMINE THE FACTORS THAT CONTRIBUTE TO REFLECTIVE JUDGMENT IN THE PREPARATION OF SCHOOL ADMINISTRATORS”.

In addition, NCS Pearson, Inc. grants you permission to insert three sample questions from the Experience and Background Inventory into your dissertation appendix. The three questions are as follows:

#12 If you could do it again, would you go into your present job field? (Fill in only one answer)
#33 While in college, where did you rank in scholarship in your class?
#37 To what extent did high anticipated earnings influence (or affect) your choice of college major? This grant of permission is subject to the following conditions:

1. A proper copyright notice on the page containing the sample questions shall state as follows:

Copyright © 1996, 1980 MELANY E. BAEHR, PH.D. All rights reserved. Questions 12, 33, and 37 reprinted with permission.

2. This permission is granted singularly for use as part of a research thesis entitled: “A STUDY TO DETERMINE THE FACTORS THAT CONTRIBUTE TO REFLECTIVE JUDGMENT IN THE PREPARATION OF SCHOOL ADMINISTRATORS”.

3. This grant of permission is non-exclusive and is not to be construed as granting you any rights other than the permission described above.

Future grants for the Experience and Background Inventory (EBI) are not covered by this permission.
If you have any questions, please contact me at (952) 681-3305
Sincerely,

Meredith Perkins
Strategic Marketing Services
Pearson Reid London House
APPENDIX B

TESTING SCHEDULE AND LETTERS
LETTER TO FACULTY DESCRIBING THE STUDY

June 7, 2002

Dear NAME:
Thank you so much for your help in this dissertation study. I have attached an abstract of the study as well as the informed consent participants will sign when I meet with them on Tuesday. This study and the consent forms have been approved by the SCSU IRB committee and by Dr. Perkins.

As we discussed, I am looking for participants who are enrolled in the Educational Leadership Program for Administrative Certification, but I would be happy to include the other students who are seeking Superintendent’s certification who are in your class.

This study will assist SCSU Educational Leadership Program in determining what factors will predict high levels of reflective judgment in educational leadership students. It will benefit those who participate by providing them with an explanation of the results of their scores on two tests that measure reflective judgment (Reasoning about Current Issues Test) and experience and background (The Experience and Background Inventory). The tests will take approximately an hour and half to complete. All information will be confidential and I will be available during the administration of the test to answer any questions they may have.

I look forward to hearing from you. I have tentatively put June 18th 7:30 at Morrell Hall on my calendar. You can reach me at 860-635-4130 or marmac9949@aol.com.

Thank you again for your help,

Peg MacDonald

Peg MacDonald
<table>
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<tr>
<th>Class and Times Location/Session</th>
<th>Teacher and Contact Information</th>
<th>Number of Students</th>
<th>Test Date and Time</th>
<th># Tested</th>
<th>Comments</th>
</tr>
</thead>
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<tr>
<td>Session A –6/26 5-9 School Finance</td>
<td>Gil Rayburn, adjunct 407-2035 wk fax 407-2012 gil.reburn(rebhun)@hamden.k12.ct.us</td>
<td>26</td>
<td>June 18\textsuperscript{th} 7:30 Morrill Hall #16</td>
<td>22</td>
<td>Spoke 6/12/02, I faxed him information and we have a tentative date June 18\textsuperscript{th} COMPLETED</td>
</tr>
<tr>
<td>Session A –6/26 5-9 Conflict Management</td>
<td>Tom Galvin Wk 203-250-1111 30 Realty Dr Cheshire 06410 <a href="mailto:Tgalvin@cascia.org">Tgalvin@cascia.org</a></td>
<td>18</td>
<td>June 25\textsuperscript{th} Tuesday 5:00 Morrill Hall 12/14</td>
<td>15</td>
<td>Spoke 6/12/02 and sent information COMPLETED</td>
</tr>
<tr>
<td>Session A –6/26 M &amp; W 5-9 Learning Theory</td>
<td>Dale Bernadon Wk 203-281-9668 Home: 203-281-3949 <a href="mailto:Dbernadon@wintergreen.edisonproject.com">Dbernadon@wintergreen.edisonproject.com</a></td>
<td>17</td>
<td>June 27\textsuperscript{th}, Thursday 5:00 at wintergreen school, 670 Wintergreen Ave, Hamden</td>
<td>16</td>
<td>Left message 6/12/02 spoke 6/13 and set up date and sent information email COMPLETED</td>
</tr>
<tr>
<td>Session A –6/27 T &amp; TH 5-9 Leadership Dev</td>
<td>Christy Hebert 203-392-5345</td>
<td>26</td>
<td>June 24\textsuperscript{th} Monday 5:00 Morrill Hall</td>
<td>25</td>
<td>Phoned and left message 6/12, emailed 6/13 COMPLETED</td>
</tr>
<tr>
<td>Session A –6/27 T &amp; TH 5-9 Organizational Development</td>
<td>Listra Richardson 203-392-5346</td>
<td>15</td>
<td>Possible date Monday 6/17</td>
<td>0</td>
<td>Phoned 6/12 left message, sent information 6/13 and phoned UNABLE TO COMPLETE TEACHER SCHEDULE</td>
</tr>
<tr>
<td>Session A –6/27 T &amp; TH 5-9 Supervision and Staff Development</td>
<td>Christine Villani 203-392-5343</td>
<td>27 (24) Possible date 6/17 I will call her Monday 17\textsuperscript{th} at 3:00 see if any volunteers</td>
<td>0</td>
<td>6/12 left message and spoke, sent info email UNABLE TO COMPLETE, NO VOLUNTEERS</td>
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## Test Administration Schedule Session B summer July 8th - July 31, 2002

### Participants Session B

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<th>Number of Students</th>
<th>Test Date and Time</th>
<th># Tested</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Seminar                          | Home 401-792-1117  
Christy Hebert  
203-392-5345 | 12 | July 2, 2002  
8:30-10:00  
Morrill Hall room 11 | 7 | Talked 6/18/02 emailed information |
| Leadership Development            | Listra Richardson  
203-392-5346 | 24 | July 2, 2002  
11:15-12:30 | 24 | Talked and arranged 6/28/02 |
| Learning Theories                | Henry Heins  
392-5524 or 392-5356 | 20 | July 31, 2002  
8:00-9:30  
Morrill Hall room 10 | 11 | Most of students had already taken the survey |

## Test Administration Schedule Session C summer August 5th - August 26th, 2002

### Participants Session C

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<th>Class and Times Location/Session</th>
<th>Teacher and Contact Information</th>
<th>Number of Students</th>
<th>Test Date and Time</th>
<th># Tested</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Organizational Development       | Home 401-792-1117  
Christy Hebert  
203-392-5345 | 24 | August 5, 2002  
10:00-12:30  
Morrill Hall room 10 | 10 | Talked 7/18/02 emailed information |
APPENDIX C

TESTING PACKET
DIRECTIONS ON PACKET FOR PARTICIPATION IN TESTING

1. Before you begin to complete the surveys, please read the Informed Consent on the left side of this folder. If you wish to participate in the study, initial the bottom of page 1 and sign page 2.

2. On the right side of the folder are 4 surveys for you to complete:
   - Personal Information Card
   - Demographic Information Form
   - The Reasoning about Current Issues Test
   - Experience and Background Inventory

3. There is no time limit for completion of the surveys, so feel free to take as much time as you need.

4. After you have completed all the surveys and signed the consent form, please put everything back into the folder and take the blue informed consent form as your copy.

THANK YOU for participating in the study. I will mail you the results of The Reasoning about Current Issues Test and the Experience and Background Inventory by September.
Opened-Ended Controversies used in The Reasoning About Current Issues Test  

*Origins of Alcoholism*

Some researchers contend that alcoholism is due, at least in part, to genetic factors. They often refer to a number of family and twin studies to support this contention. Other researchers, however, do not think that alcoholism is in any way inherited. They claim that alcoholism is psychologically determined. They also claim that the reason that several members of the same family often suffer from alcoholism is due to the fact that they share common family experiences, socio-economic status, or employment.

*Origins of Homosexuality*

People often wonder about the causes or origins of a person's sexual orientation. Some researchers suggest that homosexuality is attributable to innate biological traits. Recent research on the model of biological causation has suggested brain structure differences, hormonal influences, or genetic traits that may predetermine an individual's sexual orientation- perhaps even before birth. Other researchers believe that a homosexual orientation occurs after birth in response to social factors, subjective childhood experiences, or personal choice. These people assert that sexual orientation is a learned behavior that is largely a matter of personal preference and can be unlearned or changed.
Experience and Background Inventory

Sample Questions

# 12. If you could do it again, would you go into your present job field?
   (Fill in only one answer)

#33. While in college, where did you rank in scholarship in your class?

# 37. To what extent did high anticipated earnings influence (or affect) your choice of college major?
Demographic Information Form

Date of Birth: _______________________________

Gender: (please check one)

☐ Male
☐ Female

Are you enrolled in the Southern Connecticut State University Educational Leadership Program for Interim Administration Certification?

☐ Yes
☐ No. Please explain __________________________

Please check the core Educational Leadership courses below that you have completed for credit and circle any core courses that you are presently taking.

☐ Leadership Perspectives (EDL 680)
☐ Leadership Development (EDL 681)
☐ Organizational Development (EDL 682)
☐ Supervision and Staff Development (EDL 683)
☐ Learning Theory into Practice (EDL 684)
☐ Curriculum Development (EDL 685)
☐ School Law (EDL 602)
☐ School Finance (EDL 657)
☐ Internship (EDL 688)
☐ Seminar in Administration (EDL 689)

Present Occupation: (please check one)

☐ Teacher
☐ Administrator
☐ Related Services Personnel
☐ Other: ________________________________
Personal Information Card

As a participant in Phase 1 of this study, you will be given the results of your performance on the Reasoning about Current Issues Test and the Experience and Background Inventory. The information below will assist the researcher in sending the information to you once it has been scored. In addition, a sample of participants in Phase 1 of the study may be asked to participate in a group focus interview and the data below will assist the researcher in contacting you. If you have participated in Phase 1 of this study, you are under no obligation to participate in Phase 2. The information on this card will be kept in a locked file cabinet that will be accessible only to the researcher and used only for the purposes of this study. Please contact Margaret MacDonald if you have any questions regarding this information. (860) 635-4130, marmac9949@aol.com.

Name:

Address:

Home Phone Number and Email Address:

Identification Number:
Southern Connecticut State University
Andrews University
Departments of Educational Leadership

Human Subject Review Board Permission Form

INFORMED CONSENT
Phase 1 of Research Study

I am a Ph.D. student in the Educational Leadership Program at Andrews University, Berrien Springs, Michigan. You are being asked to participate in a research study which is examining the reflective judgment of graduate students enrolled in the Educational Leadership program at Southern Connecticut State University. Before agreeing to be part of this study, please read this consent form carefully. The form provides you with detailed information about the research study. I will discuss any aspects of the study with you that you do not understand. You should be aware of all aspects of the study, its purpose, the procedures to be used and any risks or benefits. Once you understand the study, you will be asked if you wish to participate, if you do, you will be asked to sign this form. Feel free to ask questions if you do not understand.

The purpose of the study is to explore the factors that predict reflective judgment in graduate students who are enrolled in the SCSU Educational Leadership Program. This study has two phases of data collection. You are being asked to participate in Phase 1 of the study. In this Phase, I will ask you to complete two paper-pencil tests. The Reasoning of Current Issues Test will examine reflective judgment and the Experience and Background Inventory will explore your past performance and experience. You will also be asked to complete a brief demographic information form, the purpose of which is to gather some additional information on the courses you have taken in the Educational Leadership program and your present occupation, gender, and date of birth. Lastly, you will be asked to provide your name, address, phone number, and email address on a personal information card. I will use this information to send you the results and interpretations from the Reasoning about Current Issues Test and the Experience and Background Inventory. A small sample of participants will be asked to participate in a 45-minute focus group interview in Phase 2 of the study. The personal information card will assist me in contacting volunteers for Phase 2 of the study. There is no obligation to participate in Phase 2 if you participate in Phase 1. Total time for your participation in Phase 1 of this study will be approximately 1 hour and 15 minutes.

Participation in this study is voluntary and the Educational Leadership Program at Southern Connecticut State University will not penalize you if you decide not to participate or wish to drop out after you have begun the program. Your participation in Phase 1 of this study will in no way commit you to participation in Phase 2. This study has been designed to limit the risks to the participants. It is possible however that some of the items in the questionnaires may make you feel uncomfortable. Although this rarely happens, if you do feel uncomfortable you may: choose not to answer certain items; take a break and continue later; or choose to stop the process. If you wish you can speak to the primary investigator, Margaret MacDonald or someone else of your choosing about your feelings.

Participant's Initials __________
This study is not designed to benefit you directly, however there is the possibility that you may learn about your reflective judgment and your experience and background through participation in the study. You will be given your scores and an explanation of the results of the Reasoning about Current Issues Test and the Experience and Background Inventory. You will not be compensated in any other way for your participation in this study and future compensation is not promised or implied. Your participation in this study is important in helping to better understand the factors that may predict reflective judgment in educational leadership students.

Any and all information obtained from you will be confidential. Your privacy will be protected at all times. You will not be identified individually in any way as a result of your participation in this research. The data collected however may be used as part of publications and papers related to reflective judgment. Your answer sheets and demographic information form will have a pre-assigned number for identification purposes. Your name and any other personally identifiable information will not be included on any of these forms. The personal information card will be kept in a separate locked file cabinet accessible only to the researcher.

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think this over. If you have further questions, you may contact:
Primary Research Investigator, Margaret MacDonald
61 Coles Road, Cromwell, CT.
(860) 635-4130
or
Advisor, Dr. Lyndon Furst
Educational Leadership
Andrews University
Berrien Springs, MI 49104
(616) 471-3475
If you have questions regarding your rights as a research participant you may contact the SCSU Institutional Review Board at (203) 392-5958.

I confirm that Margaret MacDonald, research investigator has explained to me the purpose of this research, the study procedures that I will undergo and the possible risks and discomforts as well as benefits that I may experience. I have read or have had read to me this consent form and I understand it. Therefore, I give my consent to participate as a research participant in Phase 1 of this research project.

Participant Signature

Date:
APPENDIX D

FOCUS GROUP SCHEDULE AND LETTERS
LETTER TO POTENTIAL FOCUS GROUP PARTICIPANTS

September 10, 2002

Dear

This summer you assisted my dissertation work by completing in your class at Southern some surveys on reflective judgment. As the second part of the study I am asking students who scored as reflective thinkers to come to a focus group interview on October 10th at 7:PM, at Southern Connecticut State University. I will moderate the group process and it will take approximately 45 minutes, anything you say will be confidential. I am particularly interested in finding out what you think contributes to your reflective judgment. I hope to hear from you and look forward to hearing your thoughts on this subject.

Sincerely,

[Signature]

Margaret MacDonald
61 Coles Rd
Cromwell, CT 06416
860-635-4130
Marmac9949@aol.com
# Communication to Potential Focus Group Participants

<table>
<thead>
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<th>Communication</th>
<th>Focus Group 10/10 7:PM</th>
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CONFIRMATORY LETTER TO FOCUS GROUP PARTICIPANTS

October 1, 2002

Dear:

Thank you very much for agreeing to participate in the second part of my dissertation study on reflective judgment by attending the Focus Group Interview on October 10, 2002 at 7:00 p.m. in Morrill Hall room 9 on the Southern Connecticut State University Campus. The purpose of this interview is to gain information from you regarding the factors that you believe contribute to your reflective judgment. As we discussed on the phone, the focus group interview will take 45 minutes and approximately six Educational Leadership students will attend. I will facilitate the discussion and the session will also be audio-taped. Any and all information you provide during the session will be confidential and your privacy will be protected at all times. You will not be identified in any way as a result of participation in this research. I have enclosed an informed consent form that further describes the study and methods used to maintain confidentiality. Please review this prior to our meeting on the 10th and feel free to contact me at (860) 635-4130 if you have any questions.

I look forward to seeing you on October 10, 2002 at 7:00 p.m.

Sincerely,

Margaret MacDonald
Southern Connecticut State University  
Andrews University  
Departments of Educational Leadership  

Human Subject Review Board Permission Form  

INFORMED CONSENT  
Focus Group  

I am a Ph.D. student in the Educational Leadership Program at Andrews University, Berrien Springs, Michigan. You are being asked to participate in a research study, which is examining the reflective judgment of graduate students enrolled in the Educational Leadership program at Southern Connecticut State University. Before agreeing to be part of this study, please read this consent form carefully. The form provides you with detailed information about the research study. I will discuss any aspects of the study with you that you do not understand. You should be aware of all aspects of the study, its purpose, the procedures to be used and any risks or benefits. Once you understand the study, you will be asked if you wish to participate, if you do, you will be asked to sign this form. Feel free to ask questions if you do not understand.

The purpose of the study is to explore the factors that predict reflective judgment in graduate students enrolled in the SCSU Educational Leadership program at SCSU. This study has two phases of data collection. You have already volunteered and participated in Phase 1 of the study. A few students who participated in the first phase of this study have been selected to participate in a 45-minute focus group interview facilitated by the researcher, Margaret MacDonald. As a volunteer in the second phase of this study you will participate in a focus group interview facilitated by the researcher with six other educational leadership students. You will be asked to respond to a few questions relevant to your reflective judgment. The focus group interview will be arranged at a mutually agreed upon date, time and location.

Participation in Phase 2 of this study is voluntary and the Educational Leadership program at Southern Connecticut State University will not penalize you if you decide not to participate or wish to drop out after you have begun the program. This study has been designed to limit the risks to the participants. It is possible however that some of the questions posed in the focus group interview may make you feel uncomfortable. Although this rarely happens, if you do feel uncomfortable you may choose not to answer certain items; take a break and continue later; or choose to stop the process. If you wish you can speak to the primary investigator, Margaret MacDonald or someone else of your choosing about your feelings.

This study is not designed to benefit you directly, however there is the possibility that you may learn about your reflective judgment and your experience and background through participation in the study. You will not be compensated in any other way for your participation in this study, nor has future compensation been promised or implied. What is learned from this study will help us to better understand the factors that may predict reflective judgment in educational leadership students.

Participant’s Initials __________
Any and all information obtained from you will be confidential. Your privacy will be protected at all times. You will not be identified individually in any way as a result of your participation in this research. The data collected however may be used as part of publications and papers related to reflective judgment. The focus group interview will be audio taped to assist the researcher in collection and analysis of the data. Focus group participants will be asked to provide only first names and no other personally identifiable information will be included on the audio-tapes. The audio-tapes will be kept in a locked file cabinet accessible only to the researcher and used only for the purposes of this study.

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think this over. If you have further questions, you may contact:
Primary Research Investigator, Margaret MacDonald
61 Coles Road, Cromwell, CT.
(860) 635-4130
or
Advisor, Dr. Lyndon Furst
Educational Leadership
Andrews University
Berrien Springs, MI 49104
(616) 471-3475
If you have questions regarding your rights as a research participant you may contact the SCSU Institutional Review Board at (203) 392-5958.

I confirm that Margaret MacDonald, research investigator has explained to me the purpose of this research, the study procedures that I will undergo and the possible risks and discomforts as well as benefits that I may experience. I have read or have had read to me this consent form and I understand it. Therefore, I give my consent to participate as a research participant in Phase 2 of this research project.

_______________________________________ Date: ______________________________
Participant Signature
Each participant received a folder at the time of the focus group interview with copy of the informed consent form to keep (they had received the informed consent form in the mail prior to the focus group interview and were asked to sign it and return it at the time for the interview), the focus group instructions and focus group questions.

FOCUS GROUP INSTRUCTIONS

Thank-you again for participating today in this focus group interview. As I discussed with each of you individually, the purpose of this session is to gain information from you regarding the factors that you believe contribute to your reflective judgment.

The focus group will take approximately 45 minutes. I will audio tape the session and the tape will only be used for the purposes of the study. Anything that you say will be confidential and I will ask you to only identify yourself by your first name and please do not use anyone else’s last name. I sent the informed consent form to you in the mail with the confirmatory letter and have received signed forms back from each of you. I have included in the folder in front of you a copy of the informed consent which provides information to you on how the information you provide today will dealt with to ensure confidentiality.

I have also included in the folder the questions I will ask during the session. I will ask the questions, but I encourage you to talk to each other and have an open discussion. You may ask each other questions, make comments, or request clarification. Because this is being audio-taped, it is important that only one person speak at a time.

You may write anything you wish next to each question either before or after you respond. Please continue to write or delete your ideas as others present their thoughts. Your written comments will be included in the research data as well. Feel free to use the back of the paper if you need more space.

Do you have any questions now before the process begins?

Please turn to the page entitled Focus Group Questions. I will give you some time to read the three questions and to write some initial notes before the discussion.
FOCUS GROUP QUESTIONS

*Question 1:* Each of you scored as a reflective thinker on the Reasoning about Current Issues Test. Describe some of the things that you believe have contributed to your reflective thinking. Please share and explain to the group.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

*Question 2:* Which of the contributory factors do you think have had the greatest impact on your reflective thinking?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Question 3: Imagine that you are responsible for the development of curriculum and pedagogy to enhance reflective judgment in educational leadership students, what would you teach them and how would you teach it to them?
REFERENCE LIST


Jackson, B. (2001, September). *Exceptional and innovative programs in educational leadership*. Paper presented at the annual meeting of the National Commission for Advancement of Educational Leaders Preparation Programs, Racine, WI.


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