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PREDICTORS OF PERSONAL TEACHING EFFICACY AND LOCUS OF CONTROL OF OHIO FAMILY AND CONSUMER SCIENCES TEACHERS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy in the
Graduate School of The Ohio State University

By

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ABSTRACT

Teacher personal and professional factors have an important impact upon the educational process. This study examined how these factors, including teachers' age, years in teaching, level of education, college attended, type of school district employed in, attitude about teaching, perceptions of adequacy of teacher preparation program, professional development preference, and student achievement scores were related to personal teaching efficacy and locus of control.

The design of the study was ex post facto/correlational. The population for the study was secondary Work and Family Life teachers who administered the Ohio Competency Analysis Profile (OCAP) tests during the 1996-97 school year. A comparison group of 250 teachers who did not participate in the testing program was also sampled. Those teachers participating in the Ohio Work and Family Life Teacher Leader Institute were examined as a separate group.

The instrumentation consisted of a mailed questionnaire. The Personal Teaching Efficacy Scale developed by Ashton, Olejnik, Crocker, and McAuliffe (1982) was used to measure efficacy. The Teacher Locus of Control scale by Rose and Medway (1981) was used to measure that construct.

For each of the variables of interest, descriptive statistics were computed including frequencies and measures of central tendency. Correlation coefficients
were used to determine relationships between variables. Regression analysis and multivariate statistics were used to determine variance accounted for by the model.

Findings indicated that the teacher leaders had significantly higher efficacy scores than others in the study. The best predictors of efficacy for all teachers were: perceptions of adequacy of teacher preparation program, attitudes about teaching, rural school type (a negative relationship), and professional development preference. There were no relationships between student achievement scores and efficacy. The best predictors of locus of control were: years in teaching, rural school type, suburban school type, attitudes about teaching, age, student achievement gain scores, and professional development preference.
DEDICATION

To Denny and Hillary, With Love
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The ability to complete a doctoral program requires support and encouragement from others as well as personal motivation. Numerous people have contributed to my success in this endeavor including:

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Dedication</td>
<td>iv</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>v</td>
</tr>
<tr>
<td>Vita</td>
<td>vi</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>xv</td>
</tr>
</tbody>
</table>

## Chapters:

1. Introduction ................................................. 1
   1.1 Purpose and objectives of the study .......... 3
   1.2 Research questions .................................. 5
   1.4 Assumptions ........................................... 6
   1.5 Limitations ........................................... 6
   1.3 Definition of terms .................................. 7

2. Review of Literature ....................................... 10
   Introduction ............................................. 10
   Research on teacher efficacy .......................... 11
   Teacher efficacy as an independent variable .... 14
   Teacher efficacy as a dependent variable ......... 17
   Locus of control research ............................. 22
   Effective teaching research ........................... 26
   Personal variables in effective teaching research . 29
   Context variables in effective teaching research . 32
   Process variables in effective teaching research . 33
   Product variables in effective teaching research . 36
   Student achievement ................................... 37
Family and consumer sciences education research 42
Chapter summary ..................................................... 47

3. Methodology .......................................................... 49
   Design of study ..................................................... 49
   Research variables ................................................ 50
   Research questions ................................................ 51
   Hypotheses ........................................................... 53
   Population and Sample ........................................... 53
   Instrumentation ..................................................... 54
   Instrumentation reliability ....................................... 56
   Human subjects information .................................... 56
   Data collection ..................................................... 57
   Data analysis ........................................................ 60

4. Findings and Discussion .............................................. 63
   Research question one ............................................ 64
   Research question two ........................................... 65
   Research question three ......................................... 68
   Age ................................................................... 68
   Gender ............................................................... 70
   Research question four ............................................ 70
   College degree ..................................................... 71
   Institution where teacher certification was obtained ... 72
   College major ..................................................... 73
   Type of district .................................................... 75
   Years in teaching ............................................... 77
   Attitudes about teaching ......................................... 79
   Perceptions of adequacy of teacher preparation program 80
   Contribution of teacher preparation program 82
   Preferred method of professional development .......... 84
   Research question five ............................................. 87
   Research question six ............................................. 93
   Research question seven ....................................... 96

5. Summary, Conclusions, Recommendations and Implications
   Summary ............................................................. 101
   Conclusions ........................................................ 114
   Implications ......................................................... 116
   Recommendations ............................................... 119
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Teacher groups used in study</td>
<td>59</td>
</tr>
<tr>
<td>2</td>
<td>Summary of research questions and analysis procedures</td>
<td>61</td>
</tr>
<tr>
<td>3</td>
<td>Personal teaching efficacy scores by teacher group</td>
<td>64</td>
</tr>
<tr>
<td>4</td>
<td>Teacher locus of control subscale scores by teacher group</td>
<td>66</td>
</tr>
<tr>
<td>5</td>
<td>Analysis of variance of teacher locus of control scores by teacher group</td>
<td>67</td>
</tr>
<tr>
<td>6</td>
<td>Relationship between teacher personal characteristics and personal teaching efficacy and locus of control</td>
<td>69</td>
</tr>
<tr>
<td>7</td>
<td>Teacher age by teacher category</td>
<td>69</td>
</tr>
<tr>
<td>8</td>
<td>Gender of Work and Family Life teachers</td>
<td>70</td>
</tr>
<tr>
<td>9</td>
<td>College degree level of Work and Family Life teachers</td>
<td>71</td>
</tr>
<tr>
<td>10</td>
<td>Relationship between teacher professional characteristics and personal teaching efficacy and locus of control</td>
<td>72</td>
</tr>
<tr>
<td>11</td>
<td>Highest degree received by teacher category</td>
<td>72</td>
</tr>
<tr>
<td>12</td>
<td>Teacher education institution of Work and Family Life teachers</td>
<td>73</td>
</tr>
<tr>
<td>13</td>
<td>College majors of Work and Family Life teachers</td>
<td>74</td>
</tr>
<tr>
<td>14</td>
<td>Type of district of Work and Family Life teachers</td>
<td>75</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Relationship between type of district employed in and personal teaching efficacy scores</td>
<td>76</td>
</tr>
<tr>
<td>16</td>
<td>School type by teacher category</td>
<td>77</td>
</tr>
<tr>
<td>17</td>
<td>Years in teaching of Work and Family Life teachers</td>
<td>77</td>
</tr>
<tr>
<td>18</td>
<td>Years in teaching by teacher category</td>
<td>79</td>
</tr>
<tr>
<td>19</td>
<td>Attitudes about teaching of Work and Family Life teachers</td>
<td>79</td>
</tr>
<tr>
<td>20</td>
<td>Perceptions of adequacy of teacher preparation programs in selected areas</td>
<td>81</td>
</tr>
<tr>
<td>21</td>
<td>Relationship between teacher preparation program adequacy ratings and efficacy and locus of control</td>
<td>82</td>
</tr>
<tr>
<td>22</td>
<td>Contribution of teacher preparation program in selected areas</td>
<td>83</td>
</tr>
<tr>
<td>23</td>
<td>Relationship between teacher preparation program adequacy ratings and efficacy and locus of control</td>
<td>83</td>
</tr>
<tr>
<td>24</td>
<td>Preferred methods of professional development of Work and Family Life teachers</td>
<td>84</td>
</tr>
<tr>
<td>25</td>
<td>Relationship between professional development method preference and personal teaching efficacy</td>
<td>85</td>
</tr>
<tr>
<td>26</td>
<td>Relationship between professional development preference and school type</td>
<td>86</td>
</tr>
<tr>
<td>27</td>
<td>Professional development preference by teacher category</td>
<td>87</td>
</tr>
<tr>
<td>28</td>
<td>Student achievement scores of Work and Family Life teachers</td>
<td>88</td>
</tr>
<tr>
<td>29</td>
<td>Relationship between personal teaching efficacy and teacher locus of control scores and student achievement</td>
<td>90</td>
</tr>
<tr>
<td>30</td>
<td>Relationship between teacher professional characteristics and student achievement</td>
<td>92</td>
</tr>
<tr>
<td>31</td>
<td>Relationship between teacher personal characteristics and student achievement scores</td>
<td>93</td>
</tr>
</tbody>
</table>
Table Page
32  Stepwise regression of personal teaching efficacy on the significant independent variables .....................................................95
33  Stepwise regression of locus of control on the significant independent variables .................................................................96
34  Personal teaching efficacy scores by teacher group .................................97
35  Analysis of variance of personal teaching efficacy scores by teacher group ..................................................................................97
36  Teacher locus of control subscale scores by teacher groups ........................98
37  Teacher leaders compared to those testing .....................................100
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>An integrated model of teacher efficacy</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>High school Work and Family Life conceptual framework</td>
<td>46</td>
</tr>
<tr>
<td>3</td>
<td>Predictors of personal teaching efficacy and locus of control</td>
<td>51</td>
</tr>
<tr>
<td>4</td>
<td>Revised model of predictors of efficacy of Work and Family Life teachers</td>
<td>112</td>
</tr>
<tr>
<td>5</td>
<td>Revised model of predictors of locus of control of Work and Family Life teachers</td>
<td>113</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

The impact of teachers on the educational process has been a topic of much research. Aspects of teachers and teaching that have been studied are numerous and range from personal factors such as educational background and age to professional characteristics such as attitudes about teaching, efficacy, and teaching methods. The answer to the question, "What makes an effective teacher?" has been sought in several ways. Factors impacting effective teaching have been identified in research as teacher personality, behaviors, attitudes, values, abilities, competencies, and others (Good, 1979; Biddle and Ellena, 1964; Cruickshank, 1990; Medley, 1977). These factors have recently been linked to student achievement in some studies, as interest in educational accountability has increased.

Cruickshank (1990) summarized earlier research on teacher effectiveness and found that teachers who hold high expectations for their students, feel responsible for student learning, have good listening skills, are able to overcome student stereotypes, and use guided discovery or indirect methods of teaching are more likely to be effective. He also identified personal characteristics such as warmth, trust, enthusiasm, encouragement, task-oriented, businesslike manner, tolerant, flexible, and being democratic as being associated with effective teaching.
Teacher efficacy has also been identified as a variable accounting for individual differences in teaching effectiveness (Gibson and Dembo, 1984). Teachers who believe that they can motivate students to achieve experience less stress and exhibit a more internal locus of control than do teachers who believe that neither they nor other teachers can affect student performance (Greenwood, Olejnik, and Parkay, 1990). Ashton (1984) maintained that teacher efficacy has demonstrated a consistent relationship to student achievement.

Recent studies show that teachers with high teaching efficacy are more humanistic in their pupil control ideology than those with low teaching efficacy (Woolfolk and Hoy, 1990). They also showed that teachers with a high sense of teaching efficacy believe that they have the ability to make a difference in student achievement (Woolfolk, Rosoff, and Hoy, 1991).

Student achievement has been measured by course grades throughout the history of education, but has only recently been more uniformly measured through proficiency and academic achievement tests. Until very recently, it has been impossible to link teacher characteristics and behaviors or patterns of behavior to any consistent measure of student achievement (Tyack, 1990). Student achievement can now be studied as a variable in some areas of educational research by using test data. The idea of basing decisions about teachers, teaching, and school funding on measures of how much students learn is one that the public and its elected officials find very appealing.

To increase educational accountability in Ohio, proficiency testing in four subject matter areas began in the early 1990's. The tests provided a measure of comparison across school districts to determine how well students were learning state-developed courses of study. In 1996, the Ohio Department of Education
began administering a student achievement test for students in high school Work and Family Life classes as well, providing scores that were used in this study. The Work and Family Life tests measure achievement on factors derived from the Ohio Competency Analysis Profile (OCAP), developed for each vocational education program in Ohio (Ohio Department of Education, 1992). The test results have presented an opportunity to examine the first state-wide student achievement data that has been available for this subject matter area.

Teachers were categorized into groups for analysis of differences between groups. Teachers participating in the testing program were compared to those not testing. In addition, participants in the Ohio Work and Family Life Teacher Leader Institute were compared to other teachers in the study. The Institute has been in existence for three years and prepares teachers to train other teachers on new curriculum and the testing program. It was believed that these teachers might score differently on the efficacy, locus of control, and student achievement measures than other teachers in the study.

This study attempted to demonstrate possible relationships between teacher personal and professional characteristics, including student achievement scores, with the personality constructs of efficacy and locus of control. Predictors of high efficacy and internal locus of control scores, indicating that teachers "believe they can make a difference in the classroom" were sought.

**Purpose and Objectives of the Study**

A review of research in Family and Consumer Sciences Education reveals a missing link in determining what factors impact teacher efficacy and locus of control, and subsequently, student achievement. Student factors, teacher factors and school/community factors all play a role in influencing student achievement.
Hall, 1994). This study examined teacher factors, such as sociodemographic and professional information and student achievement scores, and their possible relationship with teacher efficacy and locus of control scores of Work and Family Life teachers.

Specific objectives of this study included: 1.) identifying personal teaching efficacy and locus of control scores of Ohio Work and Family Life teachers, 2.) examining the personal and professional characteristics of Work and Family Life teachers 3.) determining student achievement on the Personal Development and Resource Management tests, 4.) investigating relationships between student achievement, personal and professional characteristics and personal teaching efficacy and locus of control scores and, 5.) identifying possible predictors of high personal teaching efficacy and locus of control scores of Work and Family Life teachers.

Rationale

This study adds to the body of knowledge available in the areas of efficacy and locus of control. It studies Work and Family Life teachers, a group of teachers in which these two variables has not been extensively studied. In addition, this is the first time that uniform student achievement data have been available for students taking a Work and Family Life course. For the first time, all Ohio Work and Family Life students are being taught the same curriculum, they are being measured by the same device, and a substantial sample of student scores and teachers are available for the study, allowing student achievement to be studied as a variable for the first time.

If certain teacher variables were linked to higher teacher efficacy and internal locus of control scores, and student achievement scores, important
implications for curriculum development, teacher professional development, and the preservice training of teachers might result.

Research Questions

The research questions to be answered were:

1. What are the personal teaching efficacy scores of Work and Family Life teachers in the study? These will be examined by the total sample and by two subsamples consisting of teachers participating in a student competency testing program and those not participating.

2. What are the locus of control scores of Work and Family Life teachers in the study? These will be examined by the total sample and by two subsamples consisting of teachers participating in a student competency testing program and those not participating.

3. How are teachers’ personal characteristics, namely a) age, and b) gender, related to personal teaching efficacy and locus of control scores?

4. How are teacher professional characteristics, namely a) college degree background, b) type of school district taught in, c) years in teaching, d) attitudes about teaching, e) perceptions of adequacy of teacher preparation program, and f) professional development preferences, related to personal teaching efficacy and locus of control scores?

5. How are the achievement scores of students in Work and Family Life teachers’ classrooms related to their personal teaching efficacy and locus of control scores?

6. What are the predictors of personal teaching efficacy and locus of control with regard to teacher’s age, years of experience, type of district, degree
level, feelings about teaching, perceptions of adequacy of teacher
teachers participate in the Work and Family Life Teacher
preparation program, teacher category and professional development
Leader Institute compare to Work and Family Life teachers who did not
preferences as variables?
participate on selected personal and professional characteristics?

7. How do teachers who participated in the Work and Family Life Teacher

Assumptions

It is assumed for the purposes of this study that the instruments used in
the study are accurate measures of personal teaching efficacy and locus of
control. It is also assumed that the Ohio Competency Analysis Profile (OCAP)
tests are an accurate measure of student achievement in Work and Family Life
courses.

Limitations

Certain data used in this study were collected by self-reporting
instruments, therefore the data are subject to limitations inherent in such
instruments. The study is also limited to generalizations about Ohio Work and
Family Life teachers. It is possible that teacher characteristics and attitudes could
be different with teachers in other subject matters or in other states or countries.

The study used a data base which is the property of the Ohio Department
of Education and subject to conditions for its use established by the Vocational
Instruction Materials Laboratory at The Ohio State University. Collection and reporting of the data was a new process and subject to the problems encountered when implementing any new system.

Definition of Terms

**Academic Achievement** - In this study academic achievement was operationally shown by students' mean gain scores on the Ohio Competency Analysis Profile (OCAP) test.

**Effective Teaching** - “how to best bring about the desired pupil learning by some educational activity” (Kyriacou, 1986, p. 9).

**Effective Teacher Behavior** - Effective teacher behavior includes seven clusters: 1.) teacher character traits, 2.) what the teacher knows, 3.) what the teacher teaches, 4.) how the teacher teaches, 5.) what the teacher expects, 6.) how the teacher reacts to students, and 7.) how teachers manage (Cruickshank, 1990).

**Efficacy** - the extent to which teachers believe that they have the capacity to affect student performance (Ashton and Webb, 1986).

**External Locus of Control** - the degree to which teachers attribute the cause of student behavioral outcomes to forces beyond the teachers' control (Rose and Medway, 1981).

**Family and Consumer Sciences Education** - The courses which prepare learners for competence in the work of the family, home economics related occupations, and the successful interrelating of work and family life (Ohio Department of Education, 1996).
Internal Locus of Control - the degree to which teachers attribute the cause of student behavioral outcomes (e.g., academic performance) to forces within the teachers control (Rose and Medway, 1981).

Locus of Control - teachers' generalized expectancies for internal-external control over student success and failure in the classroom.

Ohio Competency Analysis Profile (OCAP) - The employer verified competency list that outlines the knowledge, skills, and attitudes needed to enter and remain in a given occupational area or, in the case of nonoccupational programs, to succeed in applied academics, dropout prevention or Work and Family Life program (Ohio Department of Education, 1996).

Ohio Work and Family Life Teacher Leader Institute - a professional development program in which nominated teachers were trained to provide inservice activities to other teachers to help with the adoption of a new state curriculum and testing program.

Personal Development - One of the six core Work and Family Life courses which focuses on the following content: taking responsibility for self and others, building relationships with family and peers, managing stress and conflict, planning for future careers, and making responsible choices regarding sexuality and parenting (Vocational Instructional Materials Lab, 1995).

Resource Management - One of the six core Work and Family Life courses which focuses on the following content: managing resources to achieve personal and family goals, making informed consumer choices, creating and maintaining a living environment, selecting and maintaining clothing, making food choices, and preparing and serving nutritious food (Vocational Instructional Materials Lab, 1995).
Teaching - “a system of intentional actions aimed at inducing the learning of skills, knowledge and values” (Hoy and Forsyth, 1986, p. 33).

Work and Family Life Teachers - teachers in high school Work and Family Life (formerly consumer homemaking) programs who are receiving unit funding through the Ohio Department of Education.
CHAPTER 2
REVIEW OF LITERATURE

Introduction

Effective teaching is important to the educational process. The impact of the teacher cannot be denied. Fleck (1980) stated, “Teachers make the difference in the educational achievement of their students. An effective teacher can facilitate student achievement, help students find meaning in their lives, and gain insight into the lives and feelings of others” (p. 67).

Personal teaching efficacy and locus of control have been studied as factors that impact upon effective teaching and ultimately student achievement. Student achievement is the end product desired in education and hopefully is a result of effective teaching. Redick (1991) underscored the important relationship between effective teaching and student achievement when she stated, “Student achievement is one of the basic goals of effective education. Teachers can help facilitate student achievement through various means. Effective education deals with what and how much a student learns or achieves” (p. 2).

This chapter will address these topics by reviewing the following literature: 1) teacher efficacy and locus of control research, 2) teachers and teaching, including effective teaching research, 3) student achievement research, 4) Family and Consumer Sciences Education research, and 5) summary of literature review.
Research on Teacher Efficacy

Ashton and Webb (1986) defined teacher efficacy as the extent to which teachers believe that they have the capacity to affect student performance. Modern definitions of teacher efficacy vary, but most can be traced to the early research of Heider (1958) or White (1959). Teaching efficacy was first studied in two Rand Corporation studies of program effectiveness evaluation (Armor, Conry-Osequera, Cox, Kin, McDonnel, Pascal, Pauly, and Zellman, 1976; Berman, McLaughlin, Bass, Pauly, and Zellman, 1977).

Bandura (1977) provided the theoretical framework for the self-efficacy concept. He identified two components to self-efficacy: outcome expectancy and efficacy expectations. Outcome expectancy is the belief that certain behaviors can lead to specific outcomes in a generalized sense (general efficacy). Efficacy expectations are individuals' beliefs about their own competence to bring about the outcome (personal efficacy). Outcome and efficacy expectations are differentiated because individuals can believe that certain behaviors will produce certain outcomes, but if they do not believe that they can perform the necessary activities, they will not initiate the relevant behaviors (Benz, Bradley, Alderman, and Flowers, 1992).

When Bandura's theory is applied to the construct of teacher efficacy, outcome expectancy reflects the degree to which teachers believe the environment can be controlled, that is, the extent to which students can be taught given such factors as family background, IQ, and school conditions. Self-efficacy beliefs indicate teachers' evaluation of their abilities to bring about positive student change. Bandura suggested that persons high on both variables would give up readily if they do not get results (Gibson and Dembo, 1984).
Other researchers have come to believe that efficacy has more than one dimension as well. Gibson and Dembo argued it may be necessary to further distinguish general teaching efficacy from personal teaching efficacy, as suggested by Bandura (1977). They stated that teachers may believe that certain practices or teaching behaviors will affect student performance (general) but, at the same time, may not believe that they can perform those necessary activities (personal). They contended that teachers who believe student learning can be influenced by effective teaching and have confidence in their own teaching abilities “should persist longer, provide a greater academic focus in the classroom, and exhibit different types of feedback than teachers who have lower expectations concerning their ability to influence student learning”. They make the case for separating teaching efficacy and personal teaching efficacy in studies.

Ashton, Olejik, Crocker, and McAuliffe (1982) also outlined two components to a sense of efficacy. Teaching efficacy is the more generalized belief about the relationship between teaching and learning. Personal teaching efficacy is a teacher’s belief about her or his own effectiveness in teaching. The Gibson and Dembo scale (1984) contains these two dimensions (general efficacy and personal efficacy), as does the Ashton et al. scale used in this study.

Teachers with high levels of personal teaching efficacy are more likely to expect that all students can learn and to feel responsible for that learning than are teachers with low efficacy measures (Ashton and Webb, 1986). A sense of efficacy is especially important in classrooms with large concentrations of low-achieving students, according to Ashton, Webb, and Doda (1982). There is
evidence that teachers with a high sense of efficacy are those who are the least likely to engage in classroom behaviors that transmit lower expectations to low achievers.

In their research, Gibson and Dembo (1984) predicted that teachers who score high on both teaching efficacy and personal teaching efficacy would be more assured in their responses to students, would persist longer, would provide a greater academic focus in the classroom and would exhibit different types of feedback than teachers with lower expectations. More specifically, they found that teachers with a higher sense of efficacy were less likely to criticize a student for an incorrect response and were more likely to persist with students in danger of failure. These findings have been supported in other studies.

Sometimes distinctions are made between teacher efficacy and teachers’ perceptions of personal responsibility for student learning as described by Guskey (1987). The only major difference between perceptions of efficacy and responsibility, however, appears to be in the tense. Efficacy refers to projected potency in a particular situation and is generally present or future directed. It is a teacher’s belief that “I can make a difference”. Responsibility is an attribution reference that is directed toward the past and reflective. It is a teacher’s belief that “I made a difference” (Guskey, 1987). Guskey (1987) argued that efficacy is multidimensional and that three context variables affect teacher efficacy: the nature of student performance outcome (positive or negative), the ability of the student involved (high or low) and the scope of influence (single student or group).

Efficacy has been studied as both an independent and dependent variable in research. The research on efficacy as an independent variable follows.
Teacher Efficacy as an Independent Variable

Berman et al. (1977), in their evaluation of 100 Title III projects of the Elementary and Secondary Education Act, found that the most important characteristic determining the effectiveness of change-agent projects was teachers’ sense of efficacy. The authors concluded that teaching efficacy was one of the best predictors of increases in student achievement scores.

Other teacher efficacy studies showed that effective teachers had a high sense of efficacy. They created a businesslike, task-oriented environment. Through clear instructions to students, monitoring behavior, and their choice of materials and activities, they created classrooms in which students were held accountable for their work (Rosenshine, 1979).

Stein and Wang (1988) looked at use of new teaching methods and found a relationship between successful implementation of new teaching approaches and self-efficacy. The successful implementers showed marked gains in self-efficacy, whereas the less successful implementers showed a decline. The implementation improvement preceded the gain in self-efficacy.

Efficacious teachers tend to use elements of direct instruction that include a pattern of behavior used by effective elementary teachers: structured academic activities supervised by the teacher, extensive content coverage, monitoring of student performance, specific questioning of students with immediate feedback, and use of large group instruction. There may also be differences in teacher feedback patterns between high-and low-efficacy teachers (Gibson and Dembo, 1984).

Saklofske, Michayluk, and Randhawa (1988) studied the correlations between teacher efficacy and teacher behaviors. Student teachers and
supervising teachers completed a teacher efficacy self scale prior to the student teaching experience. Personal teaching efficacy was found to have small but positive correlations with three of the categories of teaching behaviors: a) lesson presenting behaviors, b) classroom management behaviors, and c) questioning behaviors. The positive correlation led researchers to conclude that a relationship did exist between personal teaching efficacy and teachers' behaviors.

Meijer and Foster (1988) explored the relationship between the characteristics of teachers and the likelihood that they would refer students to special education. Case studies were designed by the researchers describing students. Self-efficacy was measured by designing Likert scale items based on the work of Gibson and Dembo (1984). Only personal teaching efficacy was measured. After answering the teacher characteristics questions and reading the description of a particular student and situation, the teacher indicated the likelihood that a student posed a problem and whether he or she would refer the student for special education.

Data analysis showed that teachers having higher personal teaching efficacy were less likely to refer students than teachers having lower personal teaching efficacy. Although the correlations were significant, the researchers suggested further research which would deal with the relationship between self-efficacy and referral.

Several studies have examined the relationship between efficacy and school climate. Brookover and Lezotte (1979) looked at efficacy and school climate and found through interviews with school personnel that those in more effective schools had a stronger sense of efficacy and tended to feel more responsible for learning than did those in less effective schools.
A study by Moore and Esselman (1992) examined the relationships among sense of efficacy, teacher empowerment, and school climate and delineated the extent of the relationship between these three variables and student achievement. The researchers found that the contribution of the three variables to achievement differed across levels, grades, and test content. They also found that personal efficacy and teaching efficacy were highly, although inversely, related.

Some studies have linked efficacy to how teachers feel about teaching. Guskey (1987) found that greater efficacy was related to more positive attitudes about teaching, as well as a high level of confidence in teaching abilities on a measure of teaching self-concept. Efficacy was also found to be related to how beginning teachers rated the quality of their teacher preparation programs and the difficulty of teaching as a profession. Efficacious teachers had greater optimism that they would remain in teaching, viewed teaching as less difficult, and gave higher ratings to their teacher education programs (Burley, Hall, Villeme, and Borckmeier (1991).)

Several studies have looked at teachers' efficacy beliefs in relation to student outcomes. Newman (1993) studied the relationship between teacher efficacy, locus of control, and enthusiasm, and assessed their effect on student on-task behavior and in-class achievement in the middle school. Results suggested that teachers with high efficacy have students who have higher grades in class.

Hall (1992) examined attributions that teachers hold for students' academic success and failure, and the relationship between these attributions and teaching level and teacher perceptions of efficacy. Results indicated that attributions held
about students' academic performance varied depending upon the efficacy beliefs held by the teacher. Teachers high in personal teaching efficacy beliefs emphasized the role of the teacher and instructional program in explaining student success, while de-emphasizing home influences. Teachers with a strong sense of personal teaching efficacy saw themselves as responsible for student learning outcomes, regardless of whether those learning outcomes connoted success or failure.

Student attitudes and beliefs have also been examined in relation to teacher efficacy. Moffett (1992) studied how the beliefs or attitudes of students related to teacher efficacy. He found that students with highly efficacious teachers became more positive and displayed less negative changes from the beginning to the end of the school year. Also, the beliefs or attitudes of students with low efficacy teachers became more negative as the school year progressed.

A study done by Midgley, Feldlaufer, and Eccles (1988) compared relationships between a student's belief in math and their math teacher's sense of efficacy. They found a positive relationship between the teacher's efficacy and the student's belief about his/her current performance and his/her projected success in math. They were looking for the overall effect of attitudes about the difficulty of the subject.

**Teacher Efficacy as a Dependent Variable**

Teaching efficacy has also been studied as a dependent variable. Armor et al. (1976) looked at efficacy when evaluating the effectiveness of the School Preferred Reading Program in Los Angeles. The researchers reported that the greater the teachers' efficacy, the more their students advanced in reading.
achievement. Ashton et al. (1983) also found a strong and significant relationship between teachers' sense of efficacy and increases in students' scores on achievement tests.

Teacher efficacy and locus of control were shown to relate significantly to student achievement (Brophy, 1979) and teacher's classroom management strategies (Ashton and Webb, 1986). Ashton (1984) maintained that no other teacher characteristic has demonstrated such a consistent relationship to student achievement. Burrell (1994), however, studied and concluded that there was no significant relationship between teacher efficacy and student achievement scores.

Woolfolk et al. (1991) showed a relationship between a teacher's sense of efficacy and their beliefs about how students should be managed. This study examined the relationships between each dimension of efficacy and several measures of teachers' orientations toward management, control, and student motivation. The study of 55 religious school teachers showed a relationship between a teacher's sense of personal efficacy and their pupil control orientation. The greater the teacher's sense of personal and general efficacy the more humanistic their control ideology tended to be.

Woolfolk and Hoy (1990) found evidence that general and personal teaching efficacy are two independent dimensions in their study of prospective teachers and school climate. The prospective teachers' beliefs about the two dimensions of efficacy were significantly related, but in opposite dimensions to their bureaucratic orientation. They concluded that the two dimensions of efficacy were simply two different kinds of efficacy expectations. They suggested that the general teaching efficacy dimension had much in common with teachers' beliefs about the nature of ability and whether it was a fixed trait or could be changed.

18
The results of the two studies above suggested that the tasks of managing and motivating students play a role in teachers' sense of efficacy. It is also suggested that the link between teacher efficacy and student achievement was through teacher's ability to manage the class.

Ross (1994) analyzed 88 studies of the antecedents and consequences of teacher efficacy and found that personal attributes and organizational characteristics were associated with higher teacher efficacy. Higher efficacy was associated with: being female, the teacher's attribution of student success and failure to forces within their control, low stress schools, and teachers' willingness to implement innovative programs. Teachers at the elementary level also had higher efficacy scores than middle and high school teachers.

Efficacy has also been shown to be a factor in teacher practice in the classroom. A study by Allinder (1994) found that personal teaching efficacy was related to instructional experimentation among special education teachers. This included a willingness to try new materials and approaches, the desire to find better ways of teaching, and implementation of innovative instructional methods. The researcher also found that personal teaching efficacy was related to the level of organization, planning, and fairness a teacher displayed, as well as to clarity and enthusiasm in teaching.

Efficacy has also been studied as a dependent variable along with administrative styles. A study by Fuller and Izu (1986) found that when principals displayed strong leadership, encouraged innovation and were responsive to teachers' concerns, teachers had a greater sense of efficacy. They also found that teachers had higher mean efficacy scores in schools where the collective sense of efficacy was higher.
A study to identify variables that accounted for differences in teacher
efficacy or the responsibility that teachers assume for student success or failure
was conducted by Cotton (1995). One-way analysis of variance (ANOVA) and
post hoc procedures showed that certification level, years of experience, place of
residence, and grade level were significantly related to certain efficacy factors.
She found that teachers who experienced a great deal of support from
administrators, parents, and family members were more likely to assume
responsibility for academic outcomes.

Dean and Cruz (1992) discovered variables of significant predictability for
teacher efficacy among preservice educators. They found grade point average,
student satisfaction with the preservice program, and the higher education
institutions' responsiveness to student needs to be significantly relevant to the
amount of efficacy of the preservice student. They found grade point average to
be negatively related to self-efficacy.

Another study looked at how efficacy beliefs change across stages of a
career. Brown and Gibson (1982) found that teachers at later stages in their
career had a lower sense of efficacy. However, Hoy and Woolfolk (1993) found
that teachers with more teaching experience had higher levels of personal and
general teaching efficacy. A study by Pigge and Marso (1993) showed no
difference across career stages.

Tschannen-Moran, Hoy, and Hoy (1997) stated that teacher efficacy is
context-specific. For example, an efficacious math teacher might feel
inefficacious teaching kindergarten. A teacher that feels highly effective with a
first period class may feel less efficacious with a class later in the day. Teachers' feelings of efficacy vary with students, subjects and settings, and can be more or less efficacious under different circumstances.

Tschannan-Moran et al. (1997) developed an integrated model of teacher efficacy that includes both general efficacy and perceived self-efficacy strands. It incorporates four sources of information about efficacy described by Bandura (1997), including mastery experience, physiological arousal, vicarious experience, and verbal persuasion. In the analysis of teaching tasks, factors that act as constraints on the teaching task are weighted against an assessment of available resources that facilitate learning. In assessing the self-perceptions of teaching competence, one looks at capabilities such as skills, knowledge, and personality traits balanced against personal weaknesses or liabilities brought to the teaching context. (Figure 1)

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<th>Past</th>
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<td>Mastery Experience</td>
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<td>Physiological Arousal</td>
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<td>Vicarious Experience</td>
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<td>Verbal Persuasion</td>
<td>Assessment of Personal Competence</td>
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Figure 1: An integrated model of teacher efficacy
The authors suggested that further refinement of the model is needed, including a look at how teachers analyze the teaching task. An examination of the consequences of self-efficacy in terms of goal level, persistence, risk taking, and other aspects of teacher motivation is also needed. They suggested that greater understanding of the factors that facilitate or inhibit the development of efficacy beliefs among teachers across stages of their career would be valuable. Longitudinal studies across teacher preparation programs and across the first several years of teaching are also needed to map the development of efficacy beliefs and the impact of teacher preparation programs.

**Locus of Control Research**

Teacher efficacy and locus of control are two closely related concepts (Lefcourt, 1981). Efficacy is often confused with locus of control, principally in the area of internality. Bandura (1977) defined locus of control as an outcome expectancy, a person’s estimate that a given behavior will lead to certain outcome as compared to efficacy expectation, which is the conviction that one can successfully execute the behavior required to produce the outcome.

Locus of control research was derived from Rotter’s (1966) social learning theory which hypothesized that individual differences existed as to perceived responsibility for one’s own actions and the individual’s sense of personal control or reinforcement. Social learning theory concerns how choices are made by individuals from the choices of potential behaviors available to the person. Social learning theorists view the locus of control construct as a generalized expectancy concerning reinforcement (Rogerson, 1978).
In applying locus of control to teaching, teachers' locus of control is defined by Brookover and Lezotte (1979) as their perceptions of personal control over or responsibility for student achievement, in short, whether teachers see themselves as capable or incapable of influencing the achievement of their students. Teachers with a generalized expectancy of internal control perceive classroom events, such as student performance, as being a consequence of their own actions and under their personal control. Teachers with an expectancy of external control perceive little contingency between their actions in the classroom and student behavior.

The degree of contingency expected by individuals between their behavior and its effect was first conceptualized by Rotter (1966). He concluded that persons who usually attribute their successes and/or failures to themselves are designated as internals. In contrast, those who usually attribute their successes and/or failures to chance, fate, or powerful others are designated as externals.

To further distinguish locus of control from efficacy, Bandura (1977) argued that locus of control is primarily concerned with causal beliefs about action-outcome contingencies, while personal efficacy is concerned with the conviction that one can successfully execute the behavior required to produce the outcomes. Bandura provided data to show they are not the same concept measured at different levels of generality. He stated that beliefs about whether one can produce certain actions (self-efficacy) are not the same as beliefs about whether actions affect outcomes (locus of control). His data showed that self-efficacy and locus of control bore little or no empirical relationship with each other and that self-efficacy was a strong predictor of behavior but locus of control was not.
Tscannan-Moran et al. (1997) agreed that efficacy and locus of control bear little theoretical or empirical relationship to each other and should be studied as separate dimensions.

The research that has been done on student achievement indicates that teachers with internal tendencies had better achievement in school (Cooper and Baron, 1977; Brophy, 1979; Sherman and Giles, 1981; Rose and Medway, 1981). In a study of the relationship between teacher factors and student achievement, Rose and Medway (1981a) found that internal teachers tended to have classes of higher achieving students than external teachers, but they were unable to make the link between locus of control and student achievement.

Murray and Staebler (1974) studied ten female fifth-grade teachers using Rotter's (1966) Internal-External Control Scale and found that students in the five classrooms taught by the internal teachers gained more on the achievement measures than did the fifth graders in the five classrooms taught by external teachers.

In other student achievement research, the relationship between locus of control and academic achievement was present only indirectly, in the sense that more internal teachers felt themselves more responsible for student success and failure, had more initiative, and were more persistent (Guskey, 1981). Internal teachers rejected student autonomy by assuming responsibility for class control (Janzen et al., 1973). McIntyre (1984) found that teachers with a tendency to externality had more tendency toward helplessness.

Findley and Cooper (1983) did an extensive literature search and reported nearly 100 research studies showing the link between locus of control and academic achievement. Murray and Staebler (1974) examined teacher locus of
control and student achievement on several standardized tests. The results indicated that both male and female students, regardless of their locus of control, gained more on the achievement tests under internal teachers than under external teachers.

Several studies have examined the relationship between locus of control and other teacher characteristics (Sadowski, Blackwell, and Willard, 1985; Rose and Medway, 1981a). Internal teachers were more likely to implement successful innovative techniques and motivate students. Other studies examined teacher variables of age, gender, and race and indicated that internality increased with age and that females appeared to be more internally controlled than males (Richardson, 1987).

Rose and Medway (1981b) found that teachers who were higher in internal responsibility for student learning in schools with more disadvantaged students gave fewer disciplinary commands. High-internal teachers who taught among more upper class students called on non volunteers more frequently and more often had students engaged in self-directed activities.

Greenwood et al. (1990) examined the relationships between four teacher efficacy belief patterns and teachers' feelings of stress, locus of control, and several demographic variables. Researchers found evidence that teachers who believed that they could motivate students to achieve showed less evidence of stress and more internal locus of control than teachers who believed that they could not affect student performance.

Locus of control research has tended to focus more on individuals and students than on teachers. The bulk of locus of control studies have been done on individuals such as drug addicts and prisoners. They have established a link
between external control and drug addiction and incarceration (Tompkins, 1993). Locus of control studies have also been done extensively on students in the classroom. Studies have shown that internal children had greater school achievement than those who were externally-motivated (Coleman et al. 1966; Barros, 1989).

Scores on the Teacher Locus of Control (TLC) Scale (Rose and Medway, 1981a) have been weakly but significantly related to the individual Rand efficacy items, as well as to the sum of the two Rand items (Parkay, Greenwood, Olejnik, and Proller, 1988). To further examine the TLC and Rand items, Greenwood, Olejnik, and Parkay (1990) dichotomized teachers' scores on the two questions and categorized them into four efficacy patterns. They found that teachers low in both personal and general efficacy had higher stress than teachers with low personal but high general efficacy. They also found that teachers with high efficacy on both measures had more internally-oriented scores on the TLC for both student success and student failure than teachers who scored low on both.

Effective Teaching Research

Effective teaching research lends insight into teacher behaviors and personality factors as researchers attempt to determine the impact of the educational process on students. Research has followed several approaches in attempting to identify effective teaching. According to Medley (1979), research has reflected many changes over time in how effectiveness was determined and defined. Originally, effectiveness was perceived as the consequence of certain personality traits or characteristics possessed by the teacher. Later, effectiveness was perceived by teaching methods used. After that, effectiveness
was seen as dependent on the climate created by the teacher. In more recent years, effectiveness has been viewed as student mastery of a repertoire of competencies and the ability to use them appropriately.

Prior to the 1960's, effective teaching research focused primarily on identifying teacher traits or characteristics considered exemplary. Researchers sought to determine the extent in which teacher evaluators agreed on the characteristics of good teachers and how well evaluators agreed when evaluating the same teacher. A common research topic was determining whether good teachers could be separated from bad ones on the basis of administrator ratings (Ryan, 1978).

In summarizing earlier research on teacher effectiveness, it appears that we have come a long way since the 1960's. Howsam stated in 1960, “Traits or characteristics, taken by themselves, cannot be used to predict teacher effectiveness, nor have researchers been successful in combining the traits in such a way that they produce a useful index. People cannot expect to be in close agreement when they evaluate teaching.” Biddle and Ellena (1964) stated, “Few, if any, facts are now deemed established about teacher effectiveness and many former findings have been repudiated. It is not an exaggeration to say that we do not know today how to select, train for, or evaluate teacher effectiveness.”

The more recent models of teaching effectiveness research have tended to examine dynamic models of teaching, which recognized that not all learning goals are preplanned. Teachers' thinking and decision making in the classroom were studied. According to (Alkin, 1992), in the 1990's the term “effective” implied a search for alternative ways in which specific subject matter could be acquired and learning goals could be addressed for certain students in a specific context.
Medley (1985) outlined the problem of conflicting terms when evaluating teachers and teaching. The terms teacher competence, teacher competency, teacher performance, and teacher effectiveness are often used interchangeably, when, in fact, clear distinctions among the four terms are necessary for effective dialogue.

Teacher effectiveness has often been equated with student outcomes. Good (1979) defined teacher effectiveness as "the ability of a classroom teacher to produce higher-than-predicted gains on standardized achievement tests" (p. 8). Shavelson et al. (1986) stated, "A teacher is effective if, within the time period studied, students, averaged over the whole class, answered more questions correctly on multiple-choice standardized achievement tests than expected, based on the pretest performance. Under these conditions, the students in the effective teacher's class are said to have learned more than expected." (p. 83).

Along the way, researchers began to categorize measures of teacher effectiveness. Soar, Medley, and Coker (1972) fit teacher effectiveness measures into three categories. The first, presage measures, were those that described teachers before they entered the classroom. Examples included such things as IQ, National Teacher's Exam (NTE) scores, degree status, graduate courses, and years of experience. The second category was process measures, including classroom organization and interactions between teacher and pupil. The third category was product measures, or measures of change that occurred in students as a result of spending time in the classroom. The most common outcome measure was academic achievement, but attitude measures were also used.
Troisi (1983) added a fourth area as he outlined variables that have generally been looked at in effective teaching research. They included:

1. Personal - the training/teaching experience and out-of-school experiences, beliefs, and personality of the teacher;

2. Context - the classroom environment, classroom space, the geographical location (suburban, urban, or rural), number of students, student ability, quality of home nurturing;

3. Process - the learning activities in which teachers and students participate;

4. Product - what happens as a result of teaching, what students have learned as measured by tests, how they feel about the knowledge areas.

Kyriacou (1986) summarized the types of teacher effectiveness studies as follows:

1. studies based on teachers' opinions regarding effective teaching;
2. studies based on students' opinions regarding effective teaching;
3. studies based on classroom observations by an outside observer;
4. studies based on rated teaching ability based on a mixture of information;
5. studies based on teachers' descriptions of their own teaching practices;
6. studies by teachers of their own teaching.

The four categories of Troisi (1983) are used to categorize the research that follows on effective teaching.

**Personal Variables in Effective Teaching Research**

Good and Brophy (1986) stated that early concern with teachers' personal characteristics led to presage-product rather than process-product studies. Presage variables included teacher traits such as appearance, intelligence, leadership, and enthusiasm.

Several researchers have linked teacher expectations with student performance. Good and Brophy (1970) found that teachers form expectations for student performance and treat students differently depending on these
expectations. These teacher expectations for student performances have been shown to relate to measures of student academic achievement.

Simpson (1977) conducted research to determine the relationship between selected characteristics of food service job training teachers and their effectiveness as teachers. The seven teacher characteristics examined included age, sex, industrial experience, teacher experience, level of education, teacher perception of concern for students, and occupational specialization. Teacher effectiveness was measured by the Teacher's Estimate of Teacher Concern (TETC) and the Pennsylvania Competency Examination for Quantity Foods. She found that occupational specialization yielded a significant relationship with achievement, indicating that teachers with more concentrated and varied experiences had developed a curriculum focusing on competencies measured by the test.

Teacher background characteristics have also been examined. A study by Walberg (1967) supported the importance of college grades as determinants of professional success for new teaching graduates. A study by Bodenhausen (1988) investigated the relationship between the academic background of teachers of advanced placement (AP) classes and the scores of their students on the nationally administered advanced placement examinations. Teacher variables examined included number of years the teacher taught AP, the teacher's undergraduate grade point average in the AP subject, and whether or not the teacher had a graduate degree.

Bodenhausen found the effect of teacher characteristics on the exam scores to be significant. Classes which did poorly on the exams were likely to have had teachers with weak educational backgrounds. Also, classes that had
less experienced teachers did less well than classes of teachers who had more than 10 years experience teaching advanced placement classes.

Phillips and Rosenberger (1983) reported on teacher effectiveness as related to a school improvement project at George Washington H.S. in Indianapolis. The project was funded through the Lilly Endowment and Charles F. Kettering Foundation. School improvement was documented by examining scores which had improved on the Iowa Basic Skills Test. Teachers modeled continuous improvement by engaging in self-improvement efforts in their own personal and professional lives. Teachers taught about themselves, personally, so as to be effective role models, as well as the content of the course. Students exhibited significant improvement in attendance, achievement, and discipline due to increased expectations and the adult modeling.

Porter and Brophy (1988) summarized the work of the Institute for Research on Teaching at Michigan State University. They found that effective teachers had the ability to plan and negotiate a number of classroom goals, including academic and socialization goals. They also found that effective teachers accepted personal responsibility for pupil learning and behavior. Effective teachers were clear on what was to be learned and how this related to what had been previously learned. Effective teachers were also able to anticipate and correct student misconceptions.

Another personal factor examined has been teachers' professional development. A study by Sunal (1991) looked at teacher professional development in relation to student achievement. A factor analysis identified groupings related to science achievement that included teacher variables, student and teacher attendance and teacher in-service education variables. He found
that high science achievement correlated with higher teacher ratings of effectiveness of science education-related inservice programs and greater access to university courses.

Research regarding teachers' personal characteristics produced some information on virtues considered desirable in teachers, but not enough information on linkages between specific teacher behaviors and measured student achievement. That was to be further developed in the process-product research.

**Context Variables in Effective Teaching Research**

As the 1980's approached, teacher effectiveness studies widened in scope as curriculum, subject matter, teaching methods and learning strategies were examined in research. Medley (1985) outlined four types of context factors that were important to consider when validating measures of teachers and teaching. He stated that context factors were not under the control of the teacher, but their influence on assessment was too strong to be ignored. Type A factors included characteristics of professional training which directly influenced teacher competence. Type B factors included school and community characteristics which directly influenced teacher performance. Type C factors included characteristics of the teacher's class which influenced the learning experiences of students in that class. Type D factors included individual student characteristics that directly influenced learning outcomes.

Brookover and Lezotte (1979) looked for relationships between school input variables such as personnel, and school climate, and achievement on the Michigan School Assessment Test. They found that teachers and principals in
schools where achievement scores were improving had higher expectations for
their students than the staffs in schools where achievement was declining.

Bhushan (1985) examined the relationship between teachers’ attitudes and
the class environment using the Minnesota Teacher Attitude Inventory (MTAI).
Students’ perceptions of the learning environment were measured by the
Learning Environment Inventory (LEI). The researcher concluded that a
relationship existed between teacher attitude and the learning environment and
that authoritarian, pessimistic, repressing, reproachful evaluations of the students
by the teacher created dissatisfaction in the class, which reduced learning in most
areas.

**Process Variables in Effective Teaching Research**

Research on teacher effectiveness has also looked at the process of
teaching, or specific teacher behaviors, when students were succeeding.
Researchers sought to show that the Coleman et al. report (1966), which
discounted the importance of teachers in the educational process, was wrong.
This decade of the 1960’s brought the development of many classroom
observation instruments to document student and teacher behaviors
(Cruickshank, 1990).

During the 1970’s, process-product research on teacher effectiveness was
at its height. In these studies, measures of teacher behavior (process) and
teacher effectiveness (product) were gathered from a large sample of classrooms
and grade levels. The model that guided these research efforts was
conceptualized as a causal chain that consisted of a.) teacher beliefs, b.)
teacher behavior, c.) student behavior, and d.) student achievement (Rose and
Medway, 1981). According to Shavelson, Webb, and Burstein (1986), the
measures of teacher behavior were derived from systematic observation of classrooms in virtually all studies. Measures of teacher effectiveness were based on gains in student achievement. Earlier studies were typically correlational.

For example, Rosenshine and Furst (1971) identified teacher behaviors consistently associated with student learning by aggregating and reviewing 50 studies previously done. Variables found to be most promising included: 1.) clarity, 2.) organization, 3.) enthusiasm, 4.) task-oriented, achievement-oriented, and/or businesslike behavior, 5.) student opportunity to learn the criterion material, and 6.) variability of instruction. At that time, they found that fewer than 25 studies had looked specifically at teacher behavior, and most of those were conducted at the elementary level.

Teaching methods used were studied by Comber and Keeves in a 1973 study to determine relationships between teacher characteristics and student achievement in science. They found that frequent use of drill materials was positively related to achievement on academic tests in science. They also found that teacher attendance at professional conferences was positively related to higher student performance.

Medley (1977) reviewed 289 studies that dealt with how the behavior of effective teachers differed from that of ineffective teachers. He found that a competent teacher was likely to develop positive student attitudes toward school and that behavior patterns of teachers effective with low socioeconomic status (SES) students differed considerably from those of teachers effective with high SES students. He also found that teachers who achieved maximum student gains were also likely to improve students’ self-concepts.
Brophy and Evertson (1976) believed that process-product research appeared to be the most direct way to identify successful teaching behaviors. They planned the Texas Teacher Effectiveness Project to discover teacher characteristics associated with student learning gains on the Metropolitan Achievement Tests. Variables shown to correlate positively with student learning gains included: 1.) classroom control or management, 2.) high expectations by teachers, 3.) using a patterned approach to call on students, 4.) maintaining an appropriate level of difficulty, 5.) providing immediate feedback 6.) using milder and more informative types of punishment, and 7.) allowing student-initiated questions.

Good (1979) summarized effective teaching research among elementary teachers. He found that teachers' managerial styles were positively related to student achievement in every study. He found that direct instruction (orderly classrooms, persistence on academic tasks, active involvement with students, and structured learning environment) was associated with increased learning gains.

Borich et al. (1979) examined the relationship of classroom management to teaching effectiveness. They concluded that direct instruction facilitated primary and lower level learning, but less structured teaching was important for higher level thinking and learning.

Connell and Bowers (1979) studied 43 high school algebra classes in 13 schools. They reported that in a direct instructional approach, student learning was related to:

1. Task orientation - the new information was presented in the context of past learning;
2. Clarity of presentation - the vocabulary was understood, the presentation was well-planned and logical, and the teacher could be heard and understood;

3. Frequent probing - good questions were asked and rephrased to elicit well-thought-out responses which indicated the student understands the material; and

4. Enthusiasm - the teacher was enthusiastic about the material being taught.

Medley (1979) contradicted his peers by concluding that the majority of the teaching methods studied during this time produced inconclusive results because the differences between teaching methods were not significant enough to produce meaningful differences in student achievement. Furthermore, the significant differences that did appear tended to contradict one another.

In more recent years, Grayson and Martin (1988) conducted research on teacher practices in the classroom related to gender and student achievement. They collected observation data which recorded response opportunity and acknowledgement, wait time and physical closeness, probing and listening and higher level questioning. They compared these results with student scores on standardized tests in reading and mathematics to see if higher gain scores occurred when teachers used the aforementioned practices. Students in classes of teachers using these methods scored 2.1 percent higher in reading and seven percent higher in math, as assessed by the California Test of Basic Skills.

**Product Variables in Effective Teaching Research**

Product research measures what happens as a result of teaching, what students have learned as measured by tests and how they feel about the knowledge areas. Shavelson et. al. (1986) outlined the followed properties of effectiveness in process-product research:
1. Effectiveness assumes commonality of curriculum goals, objectives, and content coverage across classrooms because one standardized achievement test is used.

2. Effectiveness is strictly summative in its measurement of subject matter knowledge. It is not what students know or don't know that matters, but the accumulated quantity of their knowledge in comparison with students in other classrooms.

3. Performance on the effectiveness measure is equated with knowledge or skill in subject matter. Test taking skills, students doing less than their best effort, and guessing are generally not considered.

4. Effectiveness is strictly aggregated across students within a classroom. The class average is chosen to represent class performance.

They recommended that researchers need to identify the curriculum processes emphasized by teachers and do a direct accounting of the specific topics actually taught. They also stated that the major limitation of using standardized achievement tests is that the absence of information about curriculum content and processes provides an inadequate basis for judgments about the possible sources of performance gain that may be associated with teaching practices.

**Student Achievement Research**

Student achievement is one of the basic goals of education. But what factors make a difference in the academic achievement of students? The impact of teachers is often an area of study when student achievement is examined. The bulk of research on student achievement has occurred more recently than the research on teacher effectiveness.

Many different variables have been examined in the research on student achievement. Rossmiller (1978) studied reading and mathematics achievement and student self-concept in 28 elementary schools. He studied 134 input, output,
and process variables and reached the conclusion that several variables were consistently related to student achievement. These included: 1.) enrollment of teachers in a degree program 2.) years of teaching experience 3.) sex of the teacher 4.) social maturity of students 5.) social confidence of students 6.) teachers' perception of the principal's leadership 7.) job satisfaction expressed by teachers and 8.) teacher involvement in decision making.

Rossmiller further stated that a teacher's involvement in a degree program may be reflective of a professional attitude, a desire to keep up-to-date in the profession, or an aspiration toward upward mobility. He found a positive relationship between years of teaching experience and student achievement, but only during the early years of a teaching career. The study found male teachers to be more effective than females in the teaching of mathematics, but did not attempt to answer why.

Several other studies have focused on teachers' experience and student achievement. Teachers' experience was reported as having a significant positive effect on scores of different standardized achievement tests (Boardman, Davis, and Sanday, 1974).

A pilot study by the Vocational Instructional Materials Laboratory at Ohio State University (1965) was conducted to develop and validate tests of student achievement in twelfth grade vocational programs. Researchers found that instructor's occupational skills and knowledge were the two most important factors contributing to student achievement. Other significant findings included: 1.) Teacher personality, in terms of self-concept, was an indicator of student achievement 2.) Teacher age, grade level, education completed, years of teaching experience, and degrees held did not appear to be significant factors in
student success and 3.) Teachers' industrial experience was a significant, positive factor relating to student achievement.

A study by Hall (1962) evaluated teacher effectiveness by comparing teacher background with results on the Stanford Achievement Test. He concluded that fully certified teachers promoted greater student achievement and that hours of professional education yielded positive relationships with student gains on achievement tests.

A study by Cochran and Mills (1984) was undertaken which identified specific teaching competencies demonstrated by teachers whose students performed above average on a standardized proficiency test. Thirty-one classes having the highest and lowest scores on an English proficiency test were observed using a competency-based teacher observation instrument. The researchers experienced problems in measuring appropriateness of teacher behaviors and the lack of stability of many teacher behaviors, as well as the unknown predictive validity of standardized tests from specific teaching units, and thus found no significant correlation between the nine areas of teacher competency they examined and performance on standardized tests. They felt that by dichotomizing the test scores, a considerable loss of information resulted.

Ferko (1989) found teacher characteristics that have been positively associated with student achievement including teacher preparation, graduate education, inservice training, membership in professional associations, attendance at and participation in conferences and workshops, interest in and communication with students, participation in curriculum development, and having
input in school policy. The methodology included questionnaires designed to elicit information about student family and science background given to students, teachers, and school administrators.

Ferko found, however, that many factors associated with student achievement in science were those in which the school had little or no control. These included parent education levels and occupations, parent aspirations for students, parent attitudes toward school and science, community type, student family socioeconomic status, and student sex.

Evertson et al. (1980) examined teacher beliefs, expectations, assumptions about teaching, and instructional practices and compared them to student outcomes as measured by an achievement test. They found that teachers of high achieving math students were ranked high in general likability by students, took personal responsibility for management and discipline in their classes, and communicated to students the rules of class operation and expectations in their class. They found that teachers of high achieving English teachers used a whole classroom approach, stressed punctuation and capitalization, and demanded that students pay attention to instruction and make up missed work.

Harpole (1986) focused on the relationship between physics achievement as measured by a state proficiency test and selected teacher, student and school district characteristics. Questionnaires and attitude surveys were administered to teachers and data was correlated with scores on the Mississippi State University Physics Achievement Test. Harpole hypothesized that there would be no correlation between test scores and teacher preparation, areas of teacher certification, teaching experience, subjects taught, teaching load, undergraduate
grade point average in science, science in service training, gender and age of the teacher, teacher's attitude toward science, class and school size, and per pupil expenditures. Her results showed that the best predictor of achievement in physics was teacher certification in chemistry and the number of undergraduate hours the teacher had taken in physics.

Some researchers felt there were problems in the use of standardized tests to measure student achievement. Shavelson et al. (1986) contended that the ways in which standardized achievement tests were typically used as outcomes in teacher effectiveness studies reflected a flawed conception of how teaching can influence student learning. They believed the flaw stemmed from a limited view of the role of the teacher and teaching in the instruction-learning process and a limited measure of what learning is. They also stated that past research practices failed to take into account the mismatch between what was taught in a teacher's classroom and the content of standardized tests. Many studies of the past also have failed to control for curriculum variations.

Alkin (1992) stated that attempts to measure outcomes of teaching by use of standardized tests have not looked at noncognitive or social goals. He asserted that it is difficult for tests to maintain validity when they are used to measure teacher effectiveness, because teachers try to teach what is on the test. Only by using a comprehensive battery of tests could this be avoided because it is difficult to teach everything on such tests.

Medley (1985) discounted the role of the teacher in student achievement by asserting that student learning outcomes are directly affected by student learning experiences, but are affected only indirectly by teacher performance, and even less directly by teacher competence. He stated that this is reflective of the
fact that learning is something the student must do for himself, and that the role of the teacher is to see that students have learning experiences that will result in appropriate learning outcomes.

**Family and Consumer Sciences Education Research**

Numerous studies have been done in the area of Family and Consumer Sciences Education, but many are descriptive in nature and only few have looked at program or teacher effectiveness. Griggs and McFadden (1980) found that many studies suggested that Family and Consumer Sciences programs were effective but did not attempt to answer why. In addition, many research results have not been generalizable because there was no uniformity in program content, teaching methods, curriculum or evaluation. They recommended research to determine factors that influence learners in Family and Consumer Sciences programs.

A few studies on program effectiveness have been done in Family and Consumer Sciences. Quantitative and qualitative data were used by Murphy and Fulton (1990) to measure effectiveness of a teen parenting program in Family and Consumer Sciences. Knowledge of parenting was significantly higher, child abuse potential was significantly lower, and self-esteem did not change during the program. Teacher, student, and community factors were not considered in the study. Pestle and Baum (1991) compared students who had taken Family and Consumer Sciences courses with those who had not and found that mean scores on a consumer education behavior inventory increased with the number of courses taken.

42
White (1997) conducted a study at The Ohio State University regarding school and student factors that influenced student achievement scores on Work and Family Life competency tests. She examined the elements of parental involvement, school climate, school location, school size, curricular factors and student personal characteristics. She found that grade level and gender were significant predictors of post-test scores on the Personal Development test. Suburban school location accounted for variance on the Personal Development gain score. Grade level and gender also accounted for variance on the Resource Management post-test score. Whether the score counted for a grade accounted for an additional variance on the post-test score. Only school location accounted for variance explained for gain scores on the Resource Management test.

Regarding teacher professional characteristics, Gallup (1992) examined differences between the levels of self-efficacy among traditional-aged and nontraditional-aged beginning secondary teachers. No significant differences between age groups were found. VanderWerf (1994) did a similar study on teacher efficacy and also found no differences between the two age groups.

Wilder (1986) examined the perceptions of secondary Family and Consumer Sciences teachers concerning the adequacy of their teacher preparation program. Of the respondents, 60 percent felt well prepared in the subject matter area, 40 percent felt well prepared in the common body of knowledge in professional education, and 90 percent were aware of trends and social problems affecting Family and Consumer Sciences Education.

43
Ko (1994) investigated how Family and Consumer Sciences teachers evaluated themselves as effective teachers. The teachers identified problems that impacted on their teaching effectiveness as: lack of student interest, student behavior, lack of time, and lack of teaching experience.

Stratton and Zimmerman (1988) studied Family and Consumer Sciences teachers' attitudes toward change and found that they were influenced by teaching experience, marital status, number of activities, program change, workshops, and/or extracurricular activities. Teachers who lived in states where major curriculum revision occurred were more likely to implement the curriculum if they had attended inservice programs on the changes (Laster, Schmidt, Sullivan, and Kister, 1987).

Professional development of Family and Consumer Sciences teachers was studied by Loyd and Redick (1989) who found that teachers recognized the importance of personal activities, such as inservice, as a means of professional development. Richards (1989) found that most vocational teachers, including Family and Consumer Sciences teachers, were least likely of all teachers to attend inservice programs. Inservice programs appeared to be the preferred method of professional development in studies by Butts (1993), Beavers and Charlson (1986) and Kinoshita, Rader and Tuveson (1986).

Gray (1991) found that beginning teachers placed high priority on the professional development needs of self development, teaching skills, and organization skills, and high priority on the support area of encouragement. Teachers identified their professional development needs as being in the areas
of discipline techniques, student motivation, and stress management. They identified recognition and respect from students as a high priority need in the support area.

In a study of teacher leadership by Vail (1991), it was found that leadership could be predicted by teacher personal and professional characteristics, teacher leadership importance, and school health. Vail found that vocational and nonvocational teachers agreed that teacher leadership behaviors were important to perform; however, they also confirmed that they seldom performed these behaviors. Vocational teachers were slightly more involved in the performance of teacher leadership behaviors than were non-vocational teachers. It was also noted that when Family and Consumer Sciences teachers believed leadership behavior important, they were more likely to be moved to leadership action.

In summarizing the research in Family and Consumer Sciences Education for the most recent decade, Redick (1996) stated that, "Many studies have been done on programs and teachers but they tend to describe or relate aspects rather than determine effectiveness or show relationship to student achievement. What is lacking, however, is depth of research on given topics that could more clearly and precisely direct practice in the field. And, missing are studies on...what makes Family and Consumer Sciences teacher preparation programs effective." (p. 313).

Even greater than the call for additional research was the need to develop accountability measures to show stakeholders that existing programs in education were effective. Accountability in all areas of vocational education was increased in 1990, with the call for the modernization of vocational education by the Ohio State Board of Education. As part of the modernization plan, the Ohio
Department of Education developed employer-verified competency lists in all areas of the curriculum, including Family and Consumer Sciences courses. In addition, competency tests (OCAP tests) were developed for Personal Development and Resource Management courses (Ohio Department of Education, 1990). The results from these tests were used in this study.

Figure 2 shows the conceptual framework for the Resource Management and Personal Development courses. The framework includes core process competences that are taught in all Work and Family Life Courses and the core course areas for both courses.

**High School Work and Family Life Conceptual Framework**

**for Personal Development and Resource Management**

Core Process Competencies
(to be integrated in every course)

<table>
<thead>
<tr>
<th>Managing Work &amp; Family Responsibilities</th>
<th>Solving Personal and Family Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>-expanding the concept of work and family</td>
<td>-clarification of issues</td>
</tr>
<tr>
<td>-interaction of work and family roles</td>
<td>-making decisions for self and others</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relating to Others</th>
<th>Assuming a Leadership Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>-positive, caring relationships</td>
<td>-citizenship and leadership</td>
</tr>
<tr>
<td>-effective communication</td>
<td>-using the planning process to achieve goals</td>
</tr>
<tr>
<td>-conflict management</td>
<td></td>
</tr>
</tbody>
</table>

Core Course Areas
(minimum offering: one semester per core course area)

<table>
<thead>
<tr>
<th>Personal Development</th>
<th>Resource Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>-taking responsibility for self and others</td>
<td>-achieving personal goals</td>
</tr>
<tr>
<td>-enhancing self esteem</td>
<td>-making consumer choices</td>
</tr>
<tr>
<td>-forming relationships with family and peers</td>
<td>-creating a living environment</td>
</tr>
<tr>
<td>-managing stress and conflict</td>
<td>-making clothing decisions</td>
</tr>
<tr>
<td>-achieving career goals</td>
<td>-planning food choices and meal preparation</td>
</tr>
<tr>
<td>-parenting responsibility</td>
<td>-taking responsibility for a global environment</td>
</tr>
</tbody>
</table>

Figure 2: High school Work and Family Life conceptual framework
(Ohio Department of Education, 1994)
Tests in four job training areas in Family and Consumer Sciences were also developed. The Ohio Department of Education hopes to use testing results as one measure of program effectiveness.

Summary

Research knowledge is needed to inform practice in the field of education. Cruickshank (1990) identified four types of knowledge needed in education. These types of knowledge are: 1) what makes schools effective; 2) what makes educational programs effective; 3) what makes teachers effective; and 4) what makes teacher preparation programs effective. This knowledge is needed by both teachers in the field and by teacher educators who prepare these professionals. This study will shed light on some factors that make teachers, and ultimately their students, effective.

The review of literature for this study shows that much of the historical research on effective teaching was descriptive in nature, examining only teacher variables, with no linkage to student achievement scores. More recent research has made the link with student achievement scores, but the tests used to measure achievement have only loose ties to the curriculum. Research using student achievement scores has been very limited in the Family and Consumer Sciences area. Efficacy and locus of control have also not been studied to any great extent in Family and Consumer Sciences.

It is known that teacher factors, student factors, and community factors all have an impact upon the educational process. Because teacher factors are known to be significant and have a major impact upon a student’s achievement in
school, they are being focused on in this study. The results will be useful not only to teacher educators, but also to administrators, who help guide teachers and provide a climate that is conducive to teaching and learning.
CHAPTER 3

METHODOLOGY

The purpose of this study was to identify teacher variables which impacted personal teaching efficacy and locus of control scores. Variables studied included teacher personal and professional characteristics and student achievement.

Specific objectives of this study included: 1.) identifying personal teaching efficacy and locus of control scores of Ohio Work and Family Life teachers, 2.) examining the personal and professional characteristics of Work and Family Life teachers, 3.) determining student achievement on the Personal Development and Resource Management tests, 4.) investigating relationships between student achievement, personal and professional characteristics and personal teaching efficacy and locus of control scores and 5.) identifying predictors of high personal teaching efficacy and locus of control scores of Work and Family Life teachers.

This chapter will address the methodology to be used in this study. The variables of interest, research design, sampling procedures, instrumentation, data collection, and data analysis techniques will be discussed.

Design of the Study

The variables examined in this study were not subject to true experimental manipulation, classifying it as an ex post facto/correlational study using multiple regression. Gay (1992) describes this as descriptive research since it describes
conditions that already exist. However, it also attempts to determine reasons, causes, and relationships of the phenomena under study. Correlational research is most appropriate when variables are complex and do not lend themselves to manipulations. There are limitations to correlational research, however, as cause and effect relationships cannot be established.

Multiple regression uses all variables that individually predict the criterion to make a more accurate prediction, since a combination of variables usually results in a more accurate prediction than any one variable. The statistical procedure weights each predictor so that the predictor variables in combination give the optimal prediction of the criterion (Gay, 1992).

Research Variables

The variables of interest for this study were derived from the review of literature. The independent variables investigated in this study included: 1) personal characteristics: a) age and b) gender; 2) professional characteristics: a) level of education, b) college attended, c) type of school district employed in, d) years in teaching, e) attitudes about teaching, f) perceptions of adequacy of teacher preparation program and e) preferred professional development method; and 3) student achievement scores.

The dependent variables were personal teaching efficacy and locus of control. Figure 3 represents the variables included in the study.
Figure 3: Predictors of personal teaching efficacy and locus of control

Research Questions

The following questions gave direction to this research study:

1. What are the personal teaching efficacy scores of Work and Family Life teachers in the study? These will be examined by the total sample and by two subsamples consisting of teachers participating in a student competency testing program and those not participating.

2. What are the locus of control scores of Work and Family Life teachers in the study? These will be examined by the total sample and by two
subsamples consisting of teachers participating in a student competency testing program and those not participating.

3. How are teacher personal characteristics such as a) age and b) gender related to personal teaching efficacy and locus of control scores?

4. How are teacher professional characteristics such as a) college degree background, b) type of school district taught in, c) years in teaching, d) attitudes about teaching, e) perceptions of adequacy of teacher preparation program, and f) professional development preferences related to personal teaching efficacy and locus of control scores?

5. How are the achievement scores of students in Work and Family Life teachers' classrooms related to their personal teaching efficacy and locus of control scores?

6. What are the predictors of personal teaching efficacy and locus of control with regard to teacher's age, years of experience, type of district, degree level, feelings about teaching, perceptions of adequacy of teacher preparation program, teacher category and professional development preferences as variables?

7. How do teachers who participated in the Work and Family Life Teacher Leader Institute compare to Work and Family Life teachers who did not on selected personal and professional characteristics?
Hypotheses

The research hypotheses established for this study were:

1. Work and Family Life teachers have varying levels of personal teaching efficacy. Significant positive relationships exist between personal teaching efficacy scores and attitudes about teaching.

2. Work and Family Life teachers have varying levels of personal teaching efficacy. Significant positive relationships exist between teaching efficacy scores and student achievement scores.

3. Work and Family Life teachers have varying levels of locus of control scores. Significant positive relationships exist between internal (I+) locus of control scores and personal teaching efficacy.

4. Positive attitudes about teaching will be predictive of higher personal teaching efficacy scores.

5. Higher teacher efficacy scores and internal locus of control scores will be predictive of higher student achievement scores.

Population and Sample

A teacher utilizing the Work and Family Life OCAP tests in the Fall/Winter of 1996-1997 was the unit of analysis for this study. The population consisted of 488 of such secondary Work and Family Life teachers in Ohio. The population frame was obtained by the Vocational Instructional Materials Laboratory at The Ohio State University, which is responsible for administering the testing program.

A comparison group of 250 teachers who did not participate in the testing group were also sampled. They were selected at random from the approximately 850 teachers who taught Personal Development or Resource Management courses during the 1996-1997 school year, having first eliminated the teachers
included in the population of 488. The population frame was obtained from the Ohio Department of Education, Division of Vocational and Adult Education.

Instrumentation

A teacher survey was designed and administered in the spring of 1997 to gather demographic information, personal teaching efficacy scores and locus of control scores. The instrumentation consisted of a mailed questionnaire with three separate sections.

The Personal Teaching Efficacy Scale developed by Ashton, Olejnik, Crocker, and McAuliffe (1982) was used to measure teacher efficacy. This instrument consists of 15 specific situations that confront classroom teachers. The specific scenarios represent personal teaching efficacy. Respondents were asked to rate how effective they would be in handling each situation on a seven-point scale ranging from "extremely effective" to "extremely ineffective".

Locus of control scores were obtained by using the Rose and Medway Teacher Locus of Control (TLC) Scale (1981), which is a 28-item forced-choice scale with internal consistency. The items require teachers to endorse an option indicating either internal or external control of various classroom events. Half of the items describe positive or success situations, and the other half describe negative or failure situations. Separate scores are provided for beliefs in internal responsibility for student success (I+) and failure (I-). One point is awarded for each internal alternative. Separate scores are obtained for success and failure situations, because teachers' attributions of causality have been shown to depend on the nature of classroom and performance outcomes. Higher scores indicate higher internality or greater tendency to accept personal responsibility for classroom events (Rose and Medway, 1981).
Validation studies have indicated that the scale is predictive of teachers' behaviors in the classroom, including their willingness to adopt new instructional techniques following inservice training. In addition, the TLC Scale has demonstrated significant correlations with teachers' ability to use disciplinary actions effectively and maintain student involvement in instructional activities (Greenwood, et al., 1990).

Student achievement scores were provided by the Vocational Instructional Materials Laboratory. They were determined by using the Personal Development pretest and post test and the Resource Management pretest and post test, also developed by the Vocational Instructional Materials Lab. Each test consists of 40 multiple choice items measuring student knowledge of process and content competencies. Pretest and post test bank items were developed by Barbara and Phillip Newman, professors in the College of Human Ecology at The Ohio State University. Items were reviewed and revised by subject matter experts and others including: Ruth Dohner, professor, Home Economics Education, The Ohio State University; Denise Sharp, supervisor of Child and Family Programs for Springfield City Schools; Lynne Hall and Sandra Laurenson, state supervisors of Family and Consumer Sciences, Ohio Department of Education; Debra Tartell Matthews, teacher in Lancaster City Schools; and Heather Boggs, educational consultant.

A group of 20 Work and Family Life teachers reviewed the questions for content validity. Test questions were piloted with Work and Family Life students in the winter and spring of 1995. Cronbach's alpha for the Personal Development test was .91. Cronbach's alpha for the Resource Management test was .89. The Ohio Department of Education chose to administer equivalent
forms of the Personal Development test and Resource Management test. Equivalent forms were developed to assist in the pretest/post test design and to avoid testing effects on the post test. Scores reported are aggregated by class, teacher (a combination of all classes a teacher teaches), and/or school building, and allow an opportunity to compare test results by these variables.

Teacher personal and professional characteristics were measured by selected questions from the Perception of Professional Development instrument by Redick, Loyd, and Chatraphom (1989) and the National Survey of Students in Secondary Education Programs by Howey (1990).

Instrumentation Reliability

Rose and Medway (1981) reported Kuder-Richardson formula 20 reliabilities of .81 and .71 respectively for the I- and I+ scales of their TLC scale. The internal consistency reliability coefficients obtained for the present study with Cronbach's alpha were .7925 and .8005 respectively for I- and I+. Teacher efficacy was measured by the Personal Teaching Efficacy Scale developed by Ashton et al. (1982). It has been used as a means of differentiating more effective from less effective teachers, especially in terms of student achievement (Ashton and Webb, 1986). A reliability analysis was performed using the returned data on the efficacy items. Cronbach's Alpha was used as the reliability coefficient. The reliability coefficient for the Personal Teaching Efficacy Scale (15 items) was .8899.

Human Subjects Information

The researchers requested a waiver from the Human Subjects Institutional Review Board at The Ohio State University based upon the following reasons: a) the study used existing test data from the Ohio Department of Education, b) all
subjects were over the age of 18 and c) participation was voluntary and all information was to be kept confidential and was not used by anyone other than the researchers.

Included in the materials submitted to the review board were a brief description of the research, the questionnaire developed for the research, and an assurance that participation in the study was voluntary. The Human Subjects Institutional Review Board approved the study unconditionally.

Data Collection

A cover letter with questionnaire was mailed to the selected teachers from the Ohio Department of Education in early April 1997. Self-addressed and stamped return envelopes were provided for return of the questionnaire. The cover letter was sent on Ohio Department of Education letterhead and was signed by the Assistant Director for Family and Consumer Sciences and the researcher. The letter insured participant anonymity and explained the importance of the study. Teachers were offered the incentive of being entered in a drawing for a free teaching resource if they completed the survey.

Teachers were requested to complete the questionnaire within two weeks. There were approximately 415 surveys (56 percent) returned during this time frame. The instruments were coded to enable non-respondent follow-up letters. Follow-up letters were sent from The Ohio Department of Education in late April to non-respondents. Only questionnaires returned by the end of the school year were included in the data analysis. An additional 123 surveys were returned after the follow-up letter went out for a final return rate of 73 percent (n=538).
The unit of analysis of this study sample was the Work and Family Life teacher who taught Personal Development and/or Resource Management courses during the 1996-97 school year. Both teachers who participated in the OCAP testing program and those who did not were sampled so that student achievement gain scores could be examined as one of the variables. OCAP testing was suggested but not required by the Ohio Department of Education, making the testing program voluntary in its first year.

Four hundred eighty-eight teachers who had ordered the OCAP pretests for either course were surveyed. The list of these teachers was obtained from the Vocational Instructional Materials Lab (VIML), which administers the test. In addition, a comparison group of 250 teachers who taught the Personal Development and/or Resource Management courses but were not participating in the testing program were selected from a list of 850 total teachers who taught the courses during the 1996-97 school year. This list was obtained from the Ohio Department of Education, Division of Vocational and Adult Education. It was later discovered that there were three inaccurate names and/or addresses on the VIML list, reducing the total population to 735.

Five hundred thirty-eight teachers (73 percent) responded to the questionnaire, including both teachers who tested and those who did not. Of the respondents, 30 were participants in the Ohio Work and Family Life Teacher Leader Institute, which is a professional development program to help teachers learn from other teachers about the new curriculum and testing program being used in Ohio. The institute has been in place for three years, accepting 25-30
teachers per year. Of those 30, 22 teachers had been participating in the institute for two or more years, while four had been participating for one year and five had been participating for less than one year.

Three hundred sixty-four teachers participating in the study ordered Personal Development and/or Resource Management pretests for the 1996-97 school year. However, many teachers did not do post-testing after the first semester, the time frame during which this study was done, thus reducing the number of teachers for whom gain scores were available. Of the teachers participating in the testing program, 67 did post-testing in Personal Development and 47 did post-testing in Resource Management. Some teachers used both tests, resulting in 106 total teachers participating in the testing program. These are the teachers for whom gain scores could be used to measure student achievement.

Teachers were analyzed in three groups for purposes of this study. They are listed in Table 1.

<table>
<thead>
<tr>
<th>Teacher Group</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison Group (No testing)</td>
<td>402</td>
<td>74.7</td>
</tr>
<tr>
<td>Teachers Giving OCAP Tests</td>
<td>106</td>
<td>19.7</td>
</tr>
<tr>
<td>Teacher Leader Institute Participants</td>
<td>30</td>
<td>5.6</td>
</tr>
<tr>
<td>Total</td>
<td>538</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 1: Teacher groups used in study
Data Analysis

Data were coded and analyzed to answer each of the research questions. A range of statistical analyses was used in this study. Descriptive statistics including frequencies and measures of central tendency were tabulated for personal and professional data. Various correlation coefficients were used to determine relationships between variables. Multiple regression was used to explain the variability (variance) of the dependent variable through the linear relationships of the independent variables.

The Statistical Package for Social Sciences (SPSS) computer program (personal computer version) was used to analyze the data. Figure 3 shows the statistical techniques used in this study. These included descriptive statistics, t test for comparison of means, analysis of variance and Chi-square to determine the differences among group means, and Pearson Product Moment for determining relationships among variables. In cases where dichotomous variables were analyzed, point biserial correlation was used. Multivariate analysis was done to analyze multiple measurements related to student achievement, which included stepwise multiple regression and hierarchical regression (Table 2).
<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Variables</th>
<th>Analysis Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the personal teaching efficacy scores of Work and Family Life teachers in the study?</td>
<td>Efficacy Scores</td>
<td>ANOVA</td>
</tr>
<tr>
<td>2. What are the locus of control scores of Work and Family Life teachers in the study?</td>
<td>Locus of Control Scores</td>
<td>ANOVA</td>
</tr>
<tr>
<td>3. How are teacher personal characteristics such as a) age, and b) gender related to personal teaching efficacy and locus of control scores?</td>
<td>Teacher personal characteristics</td>
<td>Descriptive statistics Correlation Pearson Product Moment</td>
</tr>
<tr>
<td>4. How are teacher professional characteristics such as a) college degree background, b) type of school district taught in, c) years in teaching, d) attitudes about teaching, e) perceptions of adequacy of teacher preparation program and f) professional development preference related to personal teaching efficacy and locus of control scores?</td>
<td>Teacher professional characteristics</td>
<td>Point BiSerial Correlation Pearson Product Moment Correlation ANOVA</td>
</tr>
<tr>
<td>5. How are the achievement scores of students in Work and Family Life teachers' classrooms related to their personal teaching efficacy and locus of control scores?</td>
<td>Gain Scores Efficacy Scores Locus of Control Scores</td>
<td>Correlation</td>
</tr>
</tbody>
</table>

Table 2: Summary of research questions and analysis procedures
Table 2 continued

6. What are the predictors of personal teaching efficacy and locus of control with regard to teacher’s age, years of experience, type of district, degree level, feelings about teaching, perceptions of adequacy of teacher preparation program, teacher category and professional development preferences as variables?

<table>
<thead>
<tr>
<th>Teacher Efficacy Scores</th>
<th>Correlation Chi-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal &amp; Professional Characteristics</td>
<td>Locus of Control Scores</td>
</tr>
</tbody>
</table>

7. How do teachers who participated in the Work and Family Life Teacher Leader Institute compare to Work and Family Life teachers who did not on selected personal and professional characteristics?

The following descriptive scale, developed by Davis (1971), was used to describe the degree of relationships among the variables:

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.70 or higher</td>
<td>very strong relationship</td>
</tr>
<tr>
<td>.50 to .69</td>
<td>substantial relationship</td>
</tr>
<tr>
<td>.30 to .49</td>
<td>moderate relationship</td>
</tr>
<tr>
<td>.10 to .29</td>
<td>low relationship</td>
</tr>
<tr>
<td>.01 to .09</td>
<td>negligible relationship</td>
</tr>
</tbody>
</table>

Table 2: Summary of research questions and analysis procedures

The following descriptive scale, developed by Davis (1971), was used to describe the degree of relationships among the variables:
CHAPTER 4

FINDINGS AND DISCUSSION

The purpose of this study was to determine if selected personal and professional characteristics of Work and Family Life teachers were related to personal teaching efficacy and locus of control scores. Possible predictors for high personal teaching efficacy and locus of control scores were also examined.

This chapter presents the findings related to teachers’ personal and professional characteristics, and their personal teaching efficacy and locus of control scores. The chapter concludes with an examination of possible predictors of high personal teaching efficacy and locus of control scores.

The independent variables of the study were personal characteristics: a) age and b) gender, and professional characteristics: a) college degree background, b) type of school district employed in, c) years in teaching, d) attitudes about teaching, e) perceptions of adequacy of teacher preparation program f) professional development preference, and e) student achievement gain scores. The dependent variables were personal teaching efficacy and teacher locus of control. Personal teaching efficacy scores were calculated using the Ashton, Webb, Crocker, and McAuliffe (1982) Personal Teaching Efficacy Scale and locus of control scores were determined using the Rose and Medway Teacher Locus of Control Scale (1981).
The sample included Work and Family Life teachers who voluntarily participated in the Ohio Competency Analysis Profile (OCAP) testing program (106) and those who did not (432). There were also 30 teachers who participated in the Ohio Work and Family Life Teacher Leader Institute who were studied separately in one of the research questions. The research questions are used to organize the findings and discussion presented in this chapter.

**Research Question One**

What are the personal teaching efficacy scores of Work and Family Life teachers in the study? These will be examined by the total sample and by two subsample of teachers participating in a testing program and those not participating.

Efficacy scores were measured on a 15-item, seven-point scale developed by Ashton, Olejik, Crocker and McAuliffe (1982). On this scale, answers range from seven (extremely effective) to one (extremely ineffective). Mean scores on the Personal Teaching Efficacy Scale ranged from 2.67 (n=1) to 6.8 (n=1). The mean score for all teachers completing the survey was 4.97 and the median was 5.0. The standard deviation was .749.

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers Not Testing</td>
<td>430</td>
<td>4.98</td>
<td>.722</td>
</tr>
<tr>
<td>Teachers Testing</td>
<td>106</td>
<td>4.90</td>
<td>.848</td>
</tr>
<tr>
<td>Total</td>
<td>536</td>
<td>4.97</td>
<td>.749</td>
</tr>
</tbody>
</table>

7=extremely effective, 4=moderately effective, 1= extremely ineffective

Table 3: Personal teaching efficacy scores by teacher group
When teachers were compared by category, mean scores for the teachers not participating in the testing program were higher (4.98) than those participating in the testing program (4.90), but when analysis of variance (ANOVA) was conducted the difference was not significant.

**Research Question Two**

What are the locus of control scores of Work and Family Life teachers in the study? These will be examined by the total sample and by two subsamples consisting of teachers participating in a student competency testing program and those not participating.

Locus of control scores were measured using a 28-item forced choice questionnaire developed by Rose and Medway. Teachers responded to situations about students and teaching by selecting the one response they more strongly believed to be true. Separate scores were given for beliefs in internal responsibility for student success (I+) and failure (I-).

The possible range of scores is 0-14 on each subscale. The scores on the I+ subscale ranged from 0 (n=10) to 13 (n=9). The mean for all teachers for the I+ subscale was 6.55 and the median was 7.0 (SD=2.87). The scores on the I- subscale ranged from 0 (n=34) to 12 (n=5). The mean on the I- subscale was 4.70 and the median was 4.80 (SD=2.73). (Table 4).
The teachers not participating in the testing program had higher mean scores (6.64) than the overall teacher group (6.55) and the teachers testing (6.22), meaning they are more internal. An explanation for this could be that the teachers testing are more externally motivated (thus they would agree to administer a test that the state asked them to), which is reflected by lower TLC scores on the I+ (internal) subscale. Rose and Medway’s (1981) original research on the scale showed mean scores of 6.89 on the I- (external) subscale and 8.07 on the I+ subscale, which were higher than the means in this study.

The ANOVA represented in Table 5 shows significant differences in teacher locus of control scores on the I+ subscale when classified by teacher group, that is the teachers not testing scored higher than those testing. There were no significant differences on the I- subscale.

Table 4: Teacher locus of control subscale scores by teacher groups

<table>
<thead>
<tr>
<th>Teacher Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers Not Testing</td>
<td>432</td>
<td>6.64</td>
<td>2.831</td>
<td>4.69</td>
<td>2.645</td>
</tr>
<tr>
<td>Teachers Testing</td>
<td>106</td>
<td>6.22</td>
<td>2.987</td>
<td>4.71</td>
<td>3.060</td>
</tr>
<tr>
<td>Total</td>
<td>538</td>
<td>6.55</td>
<td>2.865</td>
<td>4.70</td>
<td>2.729</td>
</tr>
</tbody>
</table>

Table 4: Teacher locus of control subscale scores by teacher groups
Table 5: Analysis of variance of teacher locus of control scores by teacher group

There was a significant low relationship between teacher efficacy and the 1+ subscale score on the Teacher Locus of Control Scale ($r=.27$, $p=.000$). There was no relationship between teacher efficacy and the 1- subscale score on the Teacher Locus of Control Scale ($r=-.05$, $p=.244$). There was a significant low relationship between mean scores on the 1+ scale and mean scores on the 1- scale ($r=.26$, $p=.000$).

Scores on the Teacher Locus of Control Scale had a weak but significant relationship to items on the Rand efficacy scale (Parkay, Greenwood, Olejnik, and Proller, 1988). Burrell (1994) found a significant relationship between TLC and efficacy among middle school teachers in Tennessee. Newman (1993) found a significant correlation between efficacy scores on the Gibson and Dembo Teacher Efficacy Scale and locus of control.
Research Question Three

How are teacher personal characteristics namely a) age and b) gender related to personal teaching efficacy and locus of control scores?

Personal Characteristics

Age. As presented in Table 6, the average age of all respondents was 43.2 years, with the age range being 22-69. The median age was 45.0 and the mode was 52.0

These findings were higher compared to the Darling-Hammond (1990) national study which found the average age of teachers to be 39. A 1991 study by Vail of 373 Ohio secondary vocational teachers found the average age to be 41.41 and the age range to be 24 to 64. Higher ages support recent studies that have shown Work and Family Life teachers to be highly experienced and nearing retirement (Hoying, 1994).

There was no relationship between Personal Teaching Efficacy and age ($r = -.01, p = .831$). There was also no relationship between Teacher Locus of Control (I+ subscale) and age ($r = .06, p = .170$). There was also no relationship between score on the I- subscale and age ($r = .03, p = .479$). (See Table 6). This is consistent with the findings of other studies, however, Coladarci and Breton (1995) did find higher efficacy scores among special education teachers who were older.
Personal Characteristic | Efficacy | TLC I+ | TLC I-
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$r$</td>
<td>$p$</td>
<td>$r$</td>
</tr>
<tr>
<td>Age</td>
<td>-.01</td>
<td>.831</td>
<td>.06</td>
</tr>
<tr>
<td>Attitudes about Teaching</td>
<td>.30</td>
<td>.000*</td>
<td>.15</td>
</tr>
</tbody>
</table>

Table 6: Relationship between teacher personal characteristics and personal teaching efficacy and locus of control

When teachers were compared by testing category, the teachers testing had higher percentages in the older age categories. (Table 7). The mean age of teachers testing was 45.22. The mean age of the teachers not testing was 43.88. The difference in age was not statistically significant.

<table>
<thead>
<tr>
<th>Age</th>
<th>Teachers Testing</th>
<th>Teachers Not Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>22-32</td>
<td>6</td>
<td>5.7</td>
</tr>
<tr>
<td>33-42</td>
<td>28</td>
<td>26.7</td>
</tr>
<tr>
<td>43-52</td>
<td>59</td>
<td>56.2</td>
</tr>
<tr>
<td>53-69</td>
<td>12</td>
<td>11.4</td>
</tr>
<tr>
<td>Totals</td>
<td>105</td>
<td>19.9</td>
</tr>
</tbody>
</table>

Table 7: Teacher age by teacher category

Gallup (1992) studied the self-efficacy and Vander Werf (1994) the teacher efficacy of traditional-aged (those entering college right after high school and entering teaching right after college) and nontraditional-aged beginning teachers (those entering teaching careers at an older age). They found no significant differences between groups when teachers were examined by age.
Gender. Of the 538 teachers who responded to the questionnaire, 532 (98.9 percent) were female and 5 (.9 percent) were male. There was one non-response. (See Table 8).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-response</td>
<td>1</td>
<td>.2</td>
</tr>
<tr>
<td>Female</td>
<td>532</td>
<td>98.9</td>
</tr>
<tr>
<td>Male</td>
<td>5</td>
<td>.9</td>
</tr>
<tr>
<td>Total</td>
<td>538</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 8: Gender of Ohio Work and Family Life teachers

These results are typical of other studies done in Ohio and nationally, as most Work and Family Life teachers are female. Gender was not used further in the study because of the small amount of male teachers in the sample. In addition, many researchers have found no gender effects on efficacy or locus of control (Guskey, 1988; Hoy and Woolfolk, 1993; Lee, Dedick, and Smith, 1991).

Research Question Four

How are teacher professional characteristics such as a) college degree background, b) type of school district taught in, c) years in teaching, d) attitudes about teaching, e) perceptions of adequacy of teacher preparation program and f) professional development preference related to personal teaching efficacy and locus of control scores?
**College Degree.** A majority of teachers held Bachelor's (N=273, 50.7 percent) or Master's (N=193, 35.9 percent) degrees. Sixty-nine teachers (12.8 percent) held the M.S. + 30 designation. One teacher had a doctoral degree and there were two who did not respond.

Redick, et al. (1989) found that 43 percent of Ohio vocational teachers had an advanced degree, which is a smaller percentage than was found in this study. Vail (1991) found that 52 percent of Ohio vocational teachers had a Master's degree, which is closer to the findings of this study.

<table>
<thead>
<tr>
<th>College Degree</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.S. or B.A.</td>
<td>273</td>
<td>50.7</td>
</tr>
<tr>
<td>M.S. or M.A.</td>
<td>193</td>
<td>35.9</td>
</tr>
<tr>
<td>M.S. +30</td>
<td>69</td>
<td>12.8</td>
</tr>
<tr>
<td>PhD</td>
<td>1</td>
<td>.2</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>.4</td>
</tr>
<tr>
<td>Total</td>
<td>538</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 9: College degree level of Work and Family Life teachers

There was a negligible relationship between college degree obtained and teacher efficacy (r=.09, p=.038). The relationship between college degree obtained and Teacher Locus of Control score on the I+ subscale (r=-.35, p=.055) was approaching significance but was a negative relationship. There was no relationship between score on the I- subscale and degree obtained (r=.10, p=.582).
Table 10: Relationship between teacher professional characteristics and personal teaching efficacy and locus of control

When teachers were compared by category of test participation, there was a higher percentage of more highly educated teachers among the teachers testing (Table 11).

Table 11: Highest degree received by teacher category

Institution Where Teacher Certification was Obtained. The largest number of teachers obtained their teacher certification from The Ohio State University (N=123 or 22.9 percent). The next most commonly attended colleges were Bowling Green State University (N=67, 12.5 percent), Kent State University (N=50, 9.3 percent) and Ohio University (N=47, 8.7 percent). University of Akron has 42 teachers who obtained their certification there or 7.9 percent and Ashland
University had 26 teachers or 4.8 percent. One hundred twenty-two (22.8 percent) of teachers received degrees from other universities, mainly outside Ohio. (See Table 12).

<table>
<thead>
<tr>
<th>Institution</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio State University</td>
<td>122</td>
<td>22.8</td>
</tr>
<tr>
<td>Bowling Green State University</td>
<td>67</td>
<td>12.5</td>
</tr>
<tr>
<td>Kent State University</td>
<td>50</td>
<td>9.3</td>
</tr>
<tr>
<td>Ohio University</td>
<td>47</td>
<td>8.8</td>
</tr>
<tr>
<td>Akron University</td>
<td>42</td>
<td>7.9</td>
</tr>
<tr>
<td>Miami University</td>
<td>41</td>
<td>7.6</td>
</tr>
<tr>
<td>Ashland University</td>
<td>26</td>
<td>4.8</td>
</tr>
<tr>
<td>Youngstown State University</td>
<td>11</td>
<td>2.1</td>
</tr>
<tr>
<td>Bluffton College</td>
<td>9</td>
<td>1.7</td>
</tr>
<tr>
<td>Other</td>
<td>122</td>
<td>22.8</td>
</tr>
</tbody>
</table>

Table 12: Teacher education institution of Work and Family Life teachers

There were no significant relationships between teacher certification institution and efficacy except among The Ohio State University graduates who had a small negative relationship ($r=-.10$, $p=.014$), meaning they had lower feelings of efficacy. A negligible relationship was seen between locus of control $I+$ (internal) subscale scores and Kent State University graduates ($r=.08$, $p=.048$). A significant low relationship existed between locus of control $I-$ (external) subscale scores and Ohio University as a teacher certification institution ($r=.12$, $p=.006$).

**College Major.** The majority of respondents (N=480) majored in home economics education in college (89.2 percent). Seventeen teachers (3.2 percent)
majored in general home economics and four teachers (.7 percent) majored in family/child studies. Only two teachers majored in general education (.4 percent). There were 32 teachers who majored in a subject matter area other than those listed on the survey, two teachers chose more than one response, and one teacher did not respond.

<table>
<thead>
<tr>
<th>College Major</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Economics Education</td>
<td>479</td>
<td>89.2</td>
</tr>
<tr>
<td>Family/Child Studies</td>
<td>4</td>
<td>.7</td>
</tr>
<tr>
<td>General Home Economics</td>
<td>17</td>
<td>3.2</td>
</tr>
<tr>
<td>General Education</td>
<td>2</td>
<td>.4</td>
</tr>
<tr>
<td>Other</td>
<td>32</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Table 13: College majors of Work and Family Life teachers

When teachers were examined by college major group, the Family/Child majors had the highest efficacy scores, with a mean of 5.22 on the 7-point scale. However, the number of teachers in this group was extremely small. Those indicating an "other" major had mean score of 5.02 and those with a home economics education major had a mean score of 4.98. General home economics majors had the lowest mean score of 4.58. Analysis of variance showed no significant differences between these mean scores when examined by college major.

When teachers were grouped by college major, the General Education majors had the smallest mean (1.50) on the I- subscale of the Teacher Locus of Control (TLC) Scale, a 14 point subscale. The Family/Child majors were next lowest with a mean of 2.75. The General Home Economics majors had a mean
of 4.44 and the Home Economics Education majors had a mean of 4.72. Analysis of variance showed there was no significant difference between mean scores of any of these groups.

On the I+ TLC Scale, teachers indicating a major of "Other" had the highest mean score of 6.99. Home Economics Education majors had a mean of 6.60 and Family/Child majors had a mean score of 6.25. General Home Economics majors had a mean of 5.80 and General Education majors had a mean of 4.50. Analysis of variance showed no significant differences among mean scores on the I+ subscale.

**Type of District.** The type of school district the teachers were employed in were rural (N=188, 34.9 percent), small city/town (N=158, 29.4 percent), suburban (N=111, 20.6 percent), and urban (N=79, 14.7 percent). Three teachers did not respond to this question. A study by Vail (1991) of Ohio vocational teachers showed that the teachers were almost equally divided among small towns (26.8%), suburbs (24.1%), and cities (24.2%) (Table 14).

<table>
<thead>
<tr>
<th>Type of District Employed In</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>187</td>
<td>34.8</td>
</tr>
<tr>
<td>Small Town</td>
<td>158</td>
<td>29.4</td>
</tr>
<tr>
<td>Suburban</td>
<td>111</td>
<td>20.6</td>
</tr>
<tr>
<td>Urban</td>
<td>79</td>
<td>14.7</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>.6</td>
</tr>
<tr>
<td>Total</td>
<td>538</td>
<td>100.1</td>
</tr>
</tbody>
</table>

Table 14: Type of district of Work and Family Life teachers
A small negative relationship between teachers who taught in rural districts and teacher efficacy was seen ($r = -0.10, p = 0.018$). A small positive relationship between teachers who taught in urban districts and teacher efficacy was seen ($r = 0.10, p = 0.016$).

The relationship between the $I-$ scale and rural school location was approaching significance ($r = 0.07, p = 0.066$). The relationship between suburban school location and the $I+$ scale was negligible but significant ($r = 0.09, p = 0.027$).

<table>
<thead>
<tr>
<th>Type of District</th>
<th>Efficacy</th>
<th></th>
<th>TLC I+</th>
<th></th>
<th>TLC I-</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$r$</td>
<td>$p$</td>
<td>$r$</td>
<td>$p$</td>
<td>$r$</td>
</tr>
<tr>
<td>Rural</td>
<td>$-0.10$</td>
<td>$0.018^*$</td>
<td>$-0.07$</td>
<td>$0.075$</td>
<td>$0.07$</td>
</tr>
<tr>
<td>Small City/Town</td>
<td>$-0.04$</td>
<td>$0.336$</td>
<td>$-0.01$</td>
<td>$0.744$</td>
<td>$-0.00$</td>
</tr>
<tr>
<td>Suburban</td>
<td>$0.08$</td>
<td>$0.058$</td>
<td>$0.09$</td>
<td>$0.027^*$</td>
<td>$-0.07$</td>
</tr>
<tr>
<td>Urban</td>
<td>$0.10$</td>
<td>$0.016^*$</td>
<td>$0.02$</td>
<td>$0.518$</td>
<td>$-0.01$</td>
</tr>
</tbody>
</table>

$^* = p < 0.05$

Table 15: Relationship between type of district employed in and personal teaching efficacy scores

Moore and Esselman (1992) found greater personal teaching efficacy scores among teachers who perceived a positive school atmosphere and those who had a greater influence in school-based decision making. With the lack of funding in many rural districts, teachers might feel less positive and able to influence decision making, resulting in lower efficacy scores. Ashton and Webb (1987) found a number of factors contributing to lower teacher efficacy, including excessive role demands, poor morale, inadequate salaries, low status, lack of recognition, professional isolation, and uncertainty. Many of these factors could be present in rural districts in Ohio.
When teachers were compared by category, there was a higher percentage of urban teachers among the teachers testing (19.8% vs. 13.5%) and less teachers in the small city/town school type (23.6% vs. 30.9%). (Table 16).

<table>
<thead>
<tr>
<th>School Type</th>
<th>Teachers Testing</th>
<th>Teachers Not Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Rural</td>
<td>36</td>
<td>34.0</td>
</tr>
<tr>
<td>Town</td>
<td>25</td>
<td>23.6</td>
</tr>
<tr>
<td>Suburban</td>
<td>24</td>
<td>22.6</td>
</tr>
<tr>
<td>Urban</td>
<td>21</td>
<td>19.8</td>
</tr>
<tr>
<td>Total</td>
<td>430</td>
<td>80.2</td>
</tr>
</tbody>
</table>

Table 16: School type by teacher category

Years in Teaching. The average years of teaching experience was 17.2 among all teachers in the study. Years in teaching ranged from less than one year to 40 years. The median number of years teaching was 18.0 and the mode was 25.0 years. (Table 17).

<table>
<thead>
<tr>
<th>Years in Teaching</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-8</td>
<td>95</td>
<td>17.7</td>
</tr>
<tr>
<td>9-16</td>
<td>134</td>
<td>24.9</td>
</tr>
<tr>
<td>17-25</td>
<td>227</td>
<td>42.2</td>
</tr>
<tr>
<td>26-40</td>
<td>82</td>
<td>15.2</td>
</tr>
<tr>
<td>Total</td>
<td>538</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 17: Years in teaching of Work and Family Life teachers
Ohio Work and Family Life teachers are well above the average number of years teaching identified by Darling-Hammond (1990), who found that the majority of teachers in the United States have slightly more than 15 years of teaching experience. These results compare similarly to the Vail (1991) study which found that the average number of years teaching for vocational teachers in Ohio was 17.06.

There was no relationship between Personal Teaching Efficacy Scale scores and years in teaching (r = .04, p = .370). Few studies have looked at the effects of years in teaching on efficacy beliefs, however, they are believed to be related to reaction to teaching, satisfaction, and the amount of stress experienced by teachers (Tschannen-Moran, Hoy, and Hoy, 1997). Brown and Gibson (1982) found that teachers at later stages in their career had a lower sense of efficacy, however, Hoy and Woolfolk (1993) found that teachers with more teaching experience had higher levels of both personal and general teaching efficacy. Another study by Pigge and Marso (1993) found no differences across career stages among outstanding teachers.

There was a significant positive relationship between mean score on the I-external scale and years in teaching (r = .12, p = .008). Burrell (1994) found no relationships between teaching experience and locus of control scores.

When teachers were compared by category, there were higher percentages of experienced teachers among the teachers who participated in the testing program (Table 18). The mean years in teaching of the teachers testing was 18.53. The mean years in teaching of the teachers not testing was 16.99. The difference was not statistically significant.
Attitudes about Teaching. In general, the teachers surveyed felt positive about their career choice. Two-hundred and fifteen teachers (40.0 percent) felt very positive, while 239 teachers (44.4 percent) felt somewhat positive. Thirty-one teachers (5.8 percent) felt neutral about their career. Thirty-eight teachers (7.1 percent) felt somewhat negative about their career and one teacher (.2 percent) felt very negative. There were 14 teachers who did not respond to this question. (Table 19).

<table>
<thead>
<tr>
<th>Attitudes About Teaching</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Positive</td>
<td>215</td>
<td>40.0</td>
</tr>
<tr>
<td>Somewhat Positive</td>
<td>239</td>
<td>44.4</td>
</tr>
<tr>
<td>Neutral</td>
<td>31</td>
<td>5.8</td>
</tr>
<tr>
<td>Somewhat Negative</td>
<td>38</td>
<td>7.1</td>
</tr>
<tr>
<td>Very Negative</td>
<td>1</td>
<td>.2</td>
</tr>
<tr>
<td>No response</td>
<td>14</td>
<td>2.6</td>
</tr>
<tr>
<td>Total</td>
<td>538</td>
<td>100.1</td>
</tr>
</tbody>
</table>

1-5 Scale: 1=Very positive, 3=Neutral, 5= Very negative

Table 19: Attitudes about teaching of Work and Family Life teachers
There was a moderate relationship between attitudes about teaching and teacher efficacy \((r=.30, p=.000)\). Ashton et al. (1982) found that teachers who scored higher on the efficacy scale evidenced more positive attitudes in their teaching style. Guskey (1984) also showed that greater efficacy was related to more positive attitudes about teaching. Newman (1992) found that teacher enthusiasm, as assessed by three instruments, was significantly correlated with efficacy.

There was also a small positive relationship between mean scores on the \(I+\) subscale and attitudes about teaching \((r=.15, p=.000)\). There was no relationship between scores on the \(I-\) subscale and attitudes about teaching \((r=.06, p=.149)\). These results were expected and can be compared with several other studies (Newman, 1993 and Burrell, 1994) which failed to make a strong link between locus of control and attitudes about teaching.

There was little difference between the two teacher categories on attitudes about teaching. The teachers testing had a mean score of 4.19 and the teachers not testing had a mean score of 4.20.

**Perceptions of Adequacy of Teacher Preparation Program.** Teachers were asked to what degree their teaching preparation program adequately prepared them in certain areas. They responded on a five-point scale with five meaning "well prepared" and one meaning "not prepared". In rank order, the means for each area were as follows: instructional planning (3.85); teaching methods (3.63); selection and use of instructional materials (3.62); curriculum development (3.45); evaluation student learning (3.37); working effectively with other teacher (3.25); classroom management (2.93); understanding and responding to student differences (2.88); diagnosing the needs of the learner.
(2.71); dealing with student misbehavior (2.39); and teaching with computers (1.32). (Table 20).

<table>
<thead>
<tr>
<th>Teacher Preparation Area</th>
<th>Mean</th>
<th>Mode</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional planning</td>
<td>3.85</td>
<td>4</td>
<td>.99</td>
</tr>
<tr>
<td>Teaching methods</td>
<td>3.63</td>
<td>3</td>
<td>1.09</td>
</tr>
<tr>
<td>Selection and use of instructional materials</td>
<td>3.62</td>
<td>4</td>
<td>1.09</td>
</tr>
<tr>
<td>Curriculum development</td>
<td>3.45</td>
<td>3</td>
<td>1.14</td>
</tr>
<tr>
<td>Evaluating student learning</td>
<td>3.37</td>
<td>3</td>
<td>1.03</td>
</tr>
<tr>
<td>Working effectively with other teachers</td>
<td>3.25</td>
<td>3</td>
<td>1.15</td>
</tr>
<tr>
<td>Classroom management</td>
<td>2.93</td>
<td>3</td>
<td>1.11</td>
</tr>
<tr>
<td>Understanding student differences</td>
<td>2.88</td>
<td>3</td>
<td>1.15</td>
</tr>
<tr>
<td>Diagnosing the needs of the learner</td>
<td>2.71</td>
<td>3</td>
<td>1.11</td>
</tr>
<tr>
<td>Dealing with student misbehavior</td>
<td>2.39</td>
<td>2</td>
<td>1.03</td>
</tr>
<tr>
<td>Teaching with computers</td>
<td>1.32</td>
<td>1</td>
<td>.81</td>
</tr>
</tbody>
</table>

1-5 Scale: 1=Not Prepared, 3=Prepared, 5=Well Prepared

Table 20: Perceptions of adequacy of teacher preparation program in selected areas

When scores on these individual items were correlated with efficacy and locus of control scores, significant relationships resulted. High ratings in all 11 areas were significantly related to efficacy scores. One of the areas (dealing with student misbehavior) showed a positive relationship with scores on the I+ TLC subscale and three of the areas (teaching methods, evaluating student learning, and classroom management) showed a significant negative relationship with the I- subscale. The relationship between two areas (teaching methods and selection of instructional material) and I+ subscale scores was approaching significance (Table 21).
Table 21: Relationship between teacher preparation program adequacy ratings and efficacy and locus of control

These findings are consistent with Dean and Cruz's (1992) research that found student satisfaction with the preservice program to be a significant predictor of teacher efficacy.

**Contribution of Teacher Preparation Program.** Teachers were asked how their teacher preparation program prepared them in specific areas. On a five-point scale, with five meaning "high contribution" and one meaning "little or no contribution", the means for each, in rank order were: academic, scholarly and intellectual qualities (3.73); aesthetic, expressive, and creative qualities (3.56); and critical thinking abilities (3.49). See Table 22.
Table 22: Contribution of teacher preparation program in selected areas

When ratings of these items were compared to efficacy scores, significant, positive relationships existed in all three areas. A significant positive relationship also existed between preparation in academic, scholarly, and intellectual qualities and scores on the TLC I+ scale (Table 23).

Table 23: Relationship between teacher preparation program adequacy ratings and efficacy and locus of control
These results compare similarly to those of Raudenbush, Rowen, and Cheong (1992) who found that teachers who felt “well prepared” had higher efficacy scores than those who felt “less than well prepared”.

**Preferred Method of Professional Development.** Teachers were asked their preferred method of professional development and the most preferred method was workshops (N=201, 37.4 percent). (See Table 25). The second most preferred method was professional association meetings with 121 responses (22.5 percent). University courses received 78 responses (14.5 percent) and state department of education inservices received 48 responses (8.9 percent). Thirty-six teachers preferred self-directed methods of professional development (6.7 percent). There were six non-responses to this question and 48 teachers who chose more than one answer, thus invalidating their responses.

<table>
<thead>
<tr>
<th>Professional Development Method</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshops</td>
<td>201</td>
<td>37.4</td>
</tr>
<tr>
<td>Professional Association Meetings</td>
<td>121</td>
<td>22.5</td>
</tr>
<tr>
<td>University Courses</td>
<td>78</td>
<td>14.5</td>
</tr>
<tr>
<td>State Department Inservices</td>
<td>48</td>
<td>8.9</td>
</tr>
<tr>
<td>Self-Directed Methods</td>
<td>36</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Table 24: Preferred methods of professional development of Work and Family Life teachers

As shown in Table 25, there were no relationships between Personal Teaching Efficacy and preferred method of professional development. Ross (1994) found efficacy beliefs to be quite stable regardless of exposure to workshops and new teaching methods. Teachers who attended an efficacy
seminar had higher efficacy scores immediately following the seminar, but the increases had disappeared six weeks later (Ohmart, 1992).

There was a small positive relationship between professional association meeting preference and the I+ subscale score (r=.09, p=.038). There was a small negative relationship between self-directed preference and the I+ subscale score (r=-.10, p=.025).

<table>
<thead>
<tr>
<th>Professional Development Method</th>
<th>Efficacy</th>
<th>LOC I+</th>
<th>LOC I-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshops</td>
<td>-.07</td>
<td>-.04</td>
<td>.347</td>
</tr>
<tr>
<td>Professional AssociationMeetings</td>
<td>.03</td>
<td>.09</td>
<td>.038*</td>
</tr>
<tr>
<td>University Courses</td>
<td>-.02</td>
<td>-.07</td>
<td>.121</td>
</tr>
<tr>
<td>State Department Inservices</td>
<td>.01</td>
<td>.03</td>
<td>.471</td>
</tr>
<tr>
<td>Self-Directed Methods</td>
<td>.02</td>
<td>-.10</td>
<td>.025*</td>
</tr>
</tbody>
</table>

Table 25: Relationship between professional development method preference and personal teaching efficacy

When professional development preference was correlated with school type, there was a small positive relationship between suburban school location and university course preference (r=.10, p=.017). There was a negligible relationship between rural school type and professional meeting preference (r=.09, p=.038). There was also a negligible relationship between town school type and Department of Education inservice (r=.08, p=.050). There was also a negligible negative relationship between suburban school type and professional meeting preference (r=-.09, p=.042). (Table 26).
<table>
<thead>
<tr>
<th>Category</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>.01</td>
<td>.849</td>
</tr>
<tr>
<td>Town</td>
<td>-.07</td>
<td>.113</td>
</tr>
<tr>
<td>Suburban</td>
<td>.10</td>
<td>.017*</td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>-.03</td>
<td>.429</td>
</tr>
<tr>
<td>Town</td>
<td>.04</td>
<td>.332</td>
</tr>
<tr>
<td>Suburban</td>
<td>-.00</td>
<td>.918</td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOE Inservice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>-.05</td>
<td>.232</td>
</tr>
<tr>
<td>Town</td>
<td>.08</td>
<td>.050*</td>
</tr>
<tr>
<td>Suburban</td>
<td>-.05</td>
<td>.279</td>
</tr>
<tr>
<td>Urban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Asso. Meeting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>.09</td>
<td>.035</td>
</tr>
<tr>
<td>Town</td>
<td>-.01</td>
<td>.728</td>
</tr>
<tr>
<td>Suburban</td>
<td>-.09</td>
<td>.042*</td>
</tr>
<tr>
<td>Urban</td>
<td>.00</td>
<td>.946</td>
</tr>
<tr>
<td>Self-Directed Activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>-.04</td>
<td>.351</td>
</tr>
<tr>
<td>Town</td>
<td>-.01</td>
<td>.829</td>
</tr>
<tr>
<td>Suburban</td>
<td>.02</td>
<td>.503</td>
</tr>
<tr>
<td>Urban</td>
<td>.02</td>
<td>.728</td>
</tr>
</tbody>
</table>

Table 26: Relationship between professional development preference and school type

When professional development preference was examined by teacher testing category, the teachers testing had higher percentages of teachers...
preferring university courses, Department of Education inservices, and professional association meetings. (Table 27).

<table>
<thead>
<tr>
<th>Professional Development Preference</th>
<th>Teachers Testing n</th>
<th>%</th>
<th>Teachers Not Testing n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Courses</td>
<td>18</td>
<td>17.1</td>
<td>60</td>
<td>14.1</td>
</tr>
<tr>
<td>Workshops</td>
<td>32</td>
<td>30.5</td>
<td>14</td>
<td>13.3</td>
</tr>
<tr>
<td>Department of Ed. Inservice</td>
<td>14</td>
<td>13.3</td>
<td>34</td>
<td>8.0</td>
</tr>
<tr>
<td>Professional Asso. Meetings</td>
<td>28</td>
<td>26.7</td>
<td>93</td>
<td>21.8</td>
</tr>
<tr>
<td>Self-Directed Activities</td>
<td>8</td>
<td>7.6</td>
<td>28</td>
<td>6.6</td>
</tr>
<tr>
<td>Chose More than One Type</td>
<td>5</td>
<td>4.8</td>
<td>43</td>
<td>10.1</td>
</tr>
<tr>
<td>Totals</td>
<td>105</td>
<td>19.7</td>
<td>427</td>
<td>80.3</td>
</tr>
</tbody>
</table>

Table 27: Professional development preference by teacher category

Research Question Five

How are the achievement scores of students in Work and Family Life teachers’ classrooms related to their personal teaching efficacy and locus of control scores?

Student achievement scores in Work and Family Life classes were measured by a 40-item multiple choice test for Personal Development and a 40-item multiple choice test for resource management. The pretest/post-test data was not available for as many teachers as had been initially hoped for due to the time frame in which the research was done. Many teachers did pretesting in the fall of 1996 but did not do post-testing at the end of the semester as instructed.
Reasons included having several calamity days at the end of semester when testing should have occurred. Some teachers also taught the content across the entire year instead of within a semester as designed.

Post-test and gain scores were available for 67 teachers who gave the Personal Development test and 47 teachers who gave the Resource Management tests. Some teachers gave both tests, and there were 106 total teachers that participated in some way in the testing program.

The mean post-test score of the teachers giving the Personal Development tests was 24.505. Scores ranged from 9.50 to 35.25. The mean gain score for the same group of teachers was 2.966 points. The gain scores ranged from -8.41 to 19.08. The mean post-test score of the teachers giving the Resource Management test was 23.342. Scores ranged from 9.00 to 33.60. The mean gain score for this group of teachers was 2.245 points. The gains, or lack thereof, ranged from -10.00 to 12.75. See Table 28 below.

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>Range</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Development</td>
<td>70</td>
<td>9.5-35.25</td>
<td>24.505</td>
<td>8.44</td>
</tr>
<tr>
<td>Resource Management</td>
<td>50</td>
<td>9.0-33.60</td>
<td>23.342</td>
<td>6.95</td>
</tr>
<tr>
<td>Gain Scores</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Development</td>
<td>70</td>
<td>-8.41-19.08</td>
<td>2.966</td>
<td>1.93</td>
</tr>
<tr>
<td>Resource Management</td>
<td>50</td>
<td>-10.0-12.75</td>
<td>2.245</td>
<td>1.41</td>
</tr>
</tbody>
</table>

Table 28: Student achievement scores of Work and Family Life teachers
White (1997) studied students of a different group of Work and Family Life teachers who had given the same tests and found lower mean scores and a greater range of scores. The sample of teachers was smaller but the study looked at individual student scores where this study looked at scores aggregated by teacher. She found the mean gain score on the Personal Development test to be 1.93 and the mean gain score on the Resource Management test to be 3.78. Post-test scores on the Personal Development test ranged from 1 to 39 in her study and post-test scores in the Resource Management test ranged from 2 to 40.

There were no relationships between personal teaching efficacy and any scores on any tests. This is in contrast to previous studies that did find a relationship. For example, Moore and Esselman (1992) found that students in the second and fifth grades who had teachers with a greater sense of efficacy outperformed their peers on the Iowa Test of Basic Skills. Significantly higher levels of student achievement were found for teachers with higher personal teaching efficacy in a study by Ross (1992). Watson (1991) found a relationship between efficacy and student achievement in reading and math among students in a variety of school district types.

Because of the newness of the Work and Family Life OCAP tests, it is difficult to tell if the lack of relationship found in this study is due to some factor related to the test, or another reason. For example, problems with test administration may have impacted results. It may also be possible that the test does not adequately measure what it is supposed to measure. This will be discussed more thoroughly in Chapter 5.
There was no relationship between student achievement scores and teacher locus of control. Burrell (1994) also showed no significant relationship between TLC scores and student achievement gains in a middle school core curriculum. See Table 29.

### Table 29: Relationships between personal teaching efficacy and teacher locus of control scores and student achievement

<table>
<thead>
<tr>
<th>Category</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Development Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I+ Score</td>
<td>-.02</td>
<td>.885</td>
</tr>
<tr>
<td>I- Score</td>
<td>-.02</td>
<td>.843</td>
</tr>
<tr>
<td>Personal Teaching Efficacy</td>
<td>.06</td>
<td>.621</td>
</tr>
<tr>
<td><strong>Personal Development Gain</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I+ Score</td>
<td>.06</td>
<td>.648</td>
</tr>
<tr>
<td>I- Score</td>
<td>-.07</td>
<td>.576</td>
</tr>
<tr>
<td>Personal Teaching Efficacy</td>
<td>.11</td>
<td>.384</td>
</tr>
<tr>
<td><strong>Resource Management Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I+ Score</td>
<td>.01</td>
<td>.958</td>
</tr>
<tr>
<td>I- Score</td>
<td>-.06</td>
<td>.667</td>
</tr>
<tr>
<td>Personal Teaching Efficacy</td>
<td>.12</td>
<td>.399</td>
</tr>
<tr>
<td><strong>Resource Management Gain</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I+ Score</td>
<td>.06</td>
<td>.655</td>
</tr>
<tr>
<td>I- Score</td>
<td>.09</td>
<td>.521</td>
</tr>
<tr>
<td>Personal Teaching Efficacy</td>
<td>.18</td>
<td>.204</td>
</tr>
</tbody>
</table>

Some relationships existed when student achievement scores were correlated with other variables examined. With regard to type of district, significant low relationships existed between Resource Management gain scores and teachers who taught in small towns (r=.28, p=.045). There was also a
significant low relationship between Resource Management total scores and teachers who taught in small towns \((r=.30, \ p=.033)\). There was a significant low relationship between Personal Development gain scores and teachers who taught in suburban districts \((r=.29, \ p=.015)\). A significant low relationship between Personal Development total scores and teachers who taught in suburban districts \((r=.24, \ p=.044)\).

Regarding the relationship between years teaching and student achievement scores, there was no relationship between years in teaching and personal development gain scores \((r=-.21, \ p=.075)\). There was also no relationship between years of teaching and resource management gain scores \((r=.12, \ p=.401)\). With regard to the relationship between teachers' feelings about teaching as a career and personal development gain scores, there was no relationship between the two variables \((r=.07, \ p=.551)\). There was also no relationship between teachers' feelings about teaching as a career and resource management gain scores \((r=.04, \ p=.741)\) (Table 30).
### Table 30: Relationship between teacher professional characteristics and student achievement

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of School and Personal Development Gain Scores</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>-.22</td>
<td>.068</td>
</tr>
<tr>
<td>Small town/city</td>
<td>-.01</td>
<td>.948</td>
</tr>
<tr>
<td>Suburban</td>
<td>.29</td>
<td>.015*</td>
</tr>
<tr>
<td>Urban</td>
<td>-.03</td>
<td>.835</td>
</tr>
<tr>
<td><strong>Type of School District and Resource Management Gain Scores</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>-.14</td>
<td>.348</td>
</tr>
<tr>
<td>Small town/city</td>
<td>.28</td>
<td>.045*</td>
</tr>
<tr>
<td>Suburban</td>
<td>-.26</td>
<td>.065</td>
</tr>
<tr>
<td>Urban</td>
<td>.12</td>
<td>.424</td>
</tr>
<tr>
<td><strong>Years Teaching and Personal Development Gain Scores</strong></td>
<td>-.29</td>
<td>.025*</td>
</tr>
<tr>
<td><strong>Years Teaching and Resource Management Gain Scores</strong></td>
<td>.18</td>
<td>.29</td>
</tr>
<tr>
<td><strong>Feelings About Teaching and Personal Development Score</strong></td>
<td>.07</td>
<td>.551</td>
</tr>
<tr>
<td><strong>Feelings About Teaching and Resource Management Score</strong></td>
<td>.04</td>
<td>.741</td>
</tr>
</tbody>
</table>

* p < .05

In regard to the relationship between teachers' age and student achievement scores, there was a significant negative relationship between Personal Development gain scores and age (r = -.26, p = .026). (See Table 31.) There was no relationship between age and Resource Management gain scores (r = .11, p = .433). An explanation for this may be that older teachers are less familiar with the Personal Development course and content because it is a new curricular area, which may be reflected in lower scores for their students.
Resource Management, on the other hand, has been a curricular area since the beginning, and one that older teachers would be more comfortable with.

When examining the relationship between college degree level and student achievement scores, there was no relationship between education level and Personal Development gain scores ($r=.21, p=.124$). There was no relationship between education level and Resource Management gain scores ($r=.21, p=.200$).

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age and Personal Development Gain Scores</td>
<td>69</td>
<td>-.29</td>
<td>.026*</td>
</tr>
<tr>
<td>Age and Resource Management Gain Scores</td>
<td>50</td>
<td>.11</td>
<td>.433</td>
</tr>
<tr>
<td>Education Level and Personal Development Gain Scores</td>
<td>70</td>
<td>.21</td>
<td>.124</td>
</tr>
<tr>
<td>Education Level and Resource Management Gain Scores</td>
<td>50</td>
<td>.21</td>
<td>.200</td>
</tr>
</tbody>
</table>

*p<.05

Table 31: Relationship between teacher personal characteristics and student achievement scores

Research Question Six

What are the predictors of personal teaching efficacy and locus of control with regard to teacher's age, years of experience, type of district, degree level, attitudes about teaching, perceptions of adequacy of teacher preparation program and professional development preferences as variables?
A stepwise multiple regression analysis was completed to determine a regression equation which could best predict high efficacy and internal locus of control scores. The multiple regression equation used for this analysis was:

\[ Y' = a + b_k(x_i) \ldots + b_k(x_j) \]

- \( a \) = intercept; the estimated value of \( Y' \) when all independent variables are equal to 0
- \( b_k \) = partial regression coefficients
- \( x \) = independent variable

Independent variables which correlated significantly at .10 or higher with the dependent variables were included in the stepwise regression analysis. This included for efficacy: attitudes about teaching, rural school type, two professional development method preferences and three items relating to perceptions of adequacy of teacher preparation program. The variables that correlated significantly with locus of control were: years in teaching, rural school type, suburban school type, attitudes about teaching, age, resource management gain scores, and professional meeting preference. Of the 32 variables in the efficacy regression, eight were significant (\( p=.05 \)). These variables and their multiple regression correlation coefficient account for 26.6% of the proportion of variance explained in the dependent variable. (Table 32).
### Table 32: Stepwise regression of personal teaching efficacy on the significant independent variables

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>$b_k$</th>
<th>$R^2$</th>
<th>$R^2$ change</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequacy in Dealing W/ Misbehavior</td>
<td>.121</td>
<td>.112</td>
<td>.112</td>
<td>65.85*</td>
</tr>
<tr>
<td>Attitudes About Teaching</td>
<td>.226</td>
<td>.178</td>
<td>.058</td>
<td>56.66*</td>
</tr>
<tr>
<td>Adequacy in Selecting Instructional Materials</td>
<td>.071</td>
<td>.216</td>
<td>.037</td>
<td>47.65*</td>
</tr>
<tr>
<td>Contribution to Academic and Intellectual Qualities</td>
<td>.099</td>
<td>.233</td>
<td>.016</td>
<td>39.28*</td>
</tr>
<tr>
<td>Adequacy in Diagnosing Needs of the Learner</td>
<td>.096</td>
<td>.243</td>
<td>.010</td>
<td>33.15*</td>
</tr>
<tr>
<td>Rural School Type</td>
<td>-.152</td>
<td>.251</td>
<td>.008</td>
<td>28.90*</td>
</tr>
<tr>
<td>University Course Preference</td>
<td>-.229</td>
<td>.257</td>
<td>.006</td>
<td>25.49*</td>
</tr>
<tr>
<td>Workshop Preference</td>
<td>-.151</td>
<td>.266</td>
<td>.009</td>
<td>23.27*</td>
</tr>
</tbody>
</table>

*If* > .01

Of the 18 variables in the I- locus of control regression, years teaching and rural school type were significant ($p < .05$). These variables and their multiple regression correlation coefficient account for 2.2% of the proportion of variance explained in the dependent variable. Of the 18 variables in the I+ locus of control regression, five were significant ($p < .05$). They included attitudes about teaching, age, suburban school type, resource management gain scores, and professional
meeting preference. These variables and their multiple regression correlation coefficient account for 6.8 percent of the proportion of variance explained in the dependent variable. (Table 33).

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>b_k</th>
<th>R²</th>
<th>R² change</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>I+ Subscale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude About Teaching</td>
<td>.504</td>
<td>.024</td>
<td>.024</td>
<td>12.68*</td>
</tr>
<tr>
<td>Age</td>
<td>.037</td>
<td>.037</td>
<td>.014</td>
<td>9.99*</td>
</tr>
<tr>
<td>Resource Mgt. Gain Score</td>
<td>-.052</td>
<td>.051</td>
<td>.014</td>
<td>9.36*</td>
</tr>
<tr>
<td>Prof. Meeting Preference</td>
<td>.694</td>
<td>.059</td>
<td>.008</td>
<td>8.25*</td>
</tr>
<tr>
<td>Suburban School Type</td>
<td>.672</td>
<td>.068</td>
<td>.089</td>
<td>7.65*</td>
</tr>
<tr>
<td>I- Subscale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years teaching</td>
<td>.042</td>
<td>.014</td>
<td>.014</td>
<td>7.67*</td>
</tr>
<tr>
<td>Rural School Type</td>
<td>.508</td>
<td>.022</td>
<td>.008</td>
<td>4.95*</td>
</tr>
</tbody>
</table>

* *p > .01

Table 33: Stepwise regression of locus of control on the significant independent variables

**Research Question Seven**

How do teachers who participated in the Work and Family Life Teacher Leader Institute compare to Work and Family Life teachers who did not on selected personal and professional characteristics?

When teachers were analyzed by group, participants in the Ohio Teacher Leader Institute showed higher personal teaching efficacy scores than all teachers combined. The mean of their scores was 5.32, compared to 4.96 for the total population (Table 34).
### Table 34: Personal teaching efficacy scores by teacher group

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Teachers</td>
<td>536</td>
<td>4.96</td>
<td>.749</td>
</tr>
<tr>
<td>Teacher Leaders</td>
<td>30</td>
<td>5.32</td>
<td>.598</td>
</tr>
</tbody>
</table>

Analysis of variance (ANOVA) of efficacy scores by teacher group revealed a significant difference ($F=2.87$) ($p=.023$) among the efficacy scores of participants in the Ohio Teacher Leader Institute as shown in Table 35.

### Table 35: Analysis of variance of personal teaching efficacy scores by teacher group

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>6.313</td>
<td>1.578</td>
<td>2.86**</td>
</tr>
<tr>
<td>Within Groups</td>
<td>545</td>
<td>299.854</td>
<td>.550</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>549</td>
<td>306.168</td>
<td>.558</td>
<td></td>
</tr>
</tbody>
</table>

** $p=.023$  

Participants in the Ohio Teacher Leader Institute were selected because of their ability to make a difference in the classroom and for their ability to act as change agents in the adoption of a new curriculum. Many had previously been recognized for some outstanding aspect of their teaching or program. Some were self nominated, but most were nominated either by other teachers, teacher educators, or state supervisors. The fact that they have higher efficacy scores is not surprising, given the nature of the program and its selection process. What is
difficult to ascertain in this study is whether the teachers came to the institute as a result of efficacious tendencies or whether feelings of efficacy have developed as a result of being in the institute.

<table>
<thead>
<tr>
<th>Teacher Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Teachers</td>
<td>538</td>
<td>6.51</td>
<td>2.87</td>
<td>4.70</td>
<td>2.73</td>
</tr>
<tr>
<td>Teacher Leaders</td>
<td>30</td>
<td>7.06</td>
<td>3.10</td>
<td>4.20</td>
<td>2.63</td>
</tr>
</tbody>
</table>

Table 36: Teacher locus of control subscale by teacher groups

The teacher leaders also had higher locus of control scores on the I+ scale (7.06) compared to 6.51 for the entire population. Also, the teacher leaders had lower locus of control scores on the I- scale (4.21) versus 4.70 for teachers overall. Classroom behaviors found to be more characteristic of internal teachers (i.e., fewer disciplinary commands given to students, lower rates of inappropriate student behavior, higher rates of student self-directed activity) are those that would be expected from the participants of the Ohio Teacher Leader Institute as the program and curriculum promote such behaviors.

Brophy and Evertson (1976) found that internal teachers did tend to employ effective educational practices more often than external teachers. A goal of the Ohio Teacher Leader Institute is to improve educational practice. It appears from this data that students of the teachers in this study are scoring higher on the achievement tests.
Participants in the Work and Family Life Teacher Leader Institute tended to be older and have more experience than all teachers participating in the study. The teacher leaders had a mean age of 45.13 compared to 44.2 years overall. The teacher leaders had a 20.27 years of experience on average while the total population had an average of 17.2 years experience. The teacher leaders had more positive feelings about teaching (4.33 on a 5 point scale) versus 4.19 for teachers overall.

When teacher leaders were compared to teachers who participated in the Work and Family OCAP testing, there were more significant relationships between variables for the teacher leaders, although some of the relationships tended to be negative. (Table 37). For example, it appears that the younger teachers had higher scores on the Personal Development Test and less experienced teachers had higher scores on both tests. This may be related to the fact that younger teachers seem to adopt new curriculum more readily and may be following the state resource guides that correspond to the tests more closely.
The correlations also indicate that teachers with lower scores on the I-subscale (meaning they are more internal) had higher scores on both the Resource Management and Personal Development tests. This was predicted at the onset of this study.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Teacher Leaders</th>
<th></th>
<th>Teachers Testing</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Years Teaching and PD Score</td>
<td>-.97</td>
<td>.028</td>
<td>.68</td>
<td>.008</td>
</tr>
<tr>
<td>Age and PD Gain Score</td>
<td>-.97</td>
<td>.027</td>
<td>.42</td>
<td>.138</td>
</tr>
<tr>
<td>Age and RM Score</td>
<td>-.97</td>
<td>.025</td>
<td>.22</td>
<td>.440</td>
</tr>
<tr>
<td>RM Score and TLC (I-)</td>
<td>-.99</td>
<td>.007</td>
<td>-.06</td>
<td>.823</td>
</tr>
<tr>
<td>PD Score and TLC (I-)</td>
<td>.95</td>
<td>.051</td>
<td>-.18</td>
<td>.530</td>
</tr>
<tr>
<td>PD and RM Score</td>
<td>1.0</td>
<td>*</td>
<td>.90</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Coefficient cannot be computed

Table 37: Teacher leaders compared to those testing
CHAPTER 5
SUMMARY, CONCLUSIONS, IMPLICATIONS
AND RECOMMENDATIONS

Summary

The primary goal of this study was to determine if there were certain
teacher characteristics which could be used to predict high personal teaching
efficacy and locus of control. The instruments selected, the Personal Teaching
Efficacy Scale and the Teacher Locus of Control Scale, had previously
demonstrated a high degree of reliability and had been validated as constructs for
measuring these characteristics by past studies.

The objectives of this study were to: 1) identify personal teaching efficacy
and locus of control scores of Ohio Work and Family Life teachers, 2) examine
the personal and professional characteristics of Work and Family Life teachers 3)
determine student achievement on the Personal Development and Resource
Management tests, 4) investigate relationships between student achievement,
personal and professional characteristics and personal teaching efficacy and
locus of control scores and 5) identify predictors of high personal teaching
efficacy and locus of control scores of Work and Family Life teachers.

The research questions were as follows:

1. What are the personal teaching efficacy scores of Work and Family Life
teachers in the study? These were examined by the total sample and by
two subsamples consisting of teachers participating in a student competency testing program and those not participating.

2. What are the locus of control scores of Work and Family Life teachers in the study? These were examined by the total sample and by two subsamples consisting of teachers participating in a student competency testing program and those not participating.

3. How are teacher personal characteristics, namely a) age and b) gender, related to personal teaching efficacy and locus of control scores?

4. How are teacher professional characteristics, namely a) college degree background, b) type of school district taught in, c) years in teaching, d) attitudes about teaching, e) perceptions of adequacy of teacher preparation program, and f) professional development preferences, related to personal teaching efficacy and locus of control scores?

5. How are the achievement scores of students in Work and Family Life teachers’ classrooms related to their personal teaching efficacy and locus of control scores?

6. What are the predictors of personal teaching efficacy and locus of control with regard to teacher’s age, years of experience, type of district, degree level, feelings about teaching, perceptions of adequacy of teacher preparation program, teacher category and professional development preferences as variables?

7. How do teachers who participated in the Work and Family Life Teacher Leader Institute compare to Work and Family Life teachers who did not on selected personal and professional characteristics?
The design of this study was ex post facto/correlational. The purpose of the study was to determine the proportion of variance in the dependent variables accounted for by the independent variables. A model of factors having potential influence on the personal teaching efficacy and locus of control scores of teachers in the study was developed. This model represented the variables of interest identified in the review of literature.

The population for this study was Ohio Work and Family Life teachers who voluntarily did Ohio Competency Analysis Profile (OCAP) testing in the fall/winter of 1996-97. A comparison group of teachers who did not do testing was also surveyed. There were 538 useable questionnaires returned for the study.

The instrumentation consisted of a questionnaire with three separate sections. The Personal Teaching Efficacy Scale developed by Ashton, Olejnik, Crocker, and McAuliffe (1982) was used to measure personal teaching efficacy. The Teacher Locus of Control scale developed by Rose and Medway (1981) was used to measure that variable. Personal and professional characteristics were measured by selected questions from the Perception of Professional Development instrument by Redick, Loyd, and Chatraphorn (1989) and the National Survey of Students in Secondary Education Programs by Howey (1990).

Data were collected through a mailed questionnaire. A follow-up letter was sent after the initial return deadline had passed. Five hundred thirty-eight responses (73 percent) were received from these efforts.

A range of statistical analyses were used in this study. For each of the variables of interest, descriptive statistics were computed including frequencies and measures of central tendency. Various correlation coefficients were used to
determine relationships between variables. Regression analysis and multivariate statistics were used to determine variance accounted for by the model. A summary of findings related to the variables of interest are as follows:

**Personal Teaching Efficacy.** Mean scores on the Personal Teaching Efficacy Scale (possible range of 1-7) were 4.97 for the total population, 4.89 for teachers testing, 4.99 for teachers not testing and 5.32 for the teacher leaders. The differences in teacher groups were not significant, except for the teacher leaders. Why teacher leaders had higher efficacy scores needs to be examined further. It is very likely that being more efficacious was a reason why the teacher was nominated for the institute in the first place. Also, activities which built leadership skills as part of the institute may have contributed to higher efficacy scores.

For example, institute participants were asked to conduct workshops for other teachers on use of the new state curriculum and help promote the competency testing program. The curriculum guides were developed by teachers, teacher educators at The Ohio State University, and Ohio Department of Education staff, with the thought that teacher-led professional development efforts would be the best way to insure adoption of the curriculum. This may have led to a sense of empowerment among the teacher leaders involved which showed up in their efficacy scores.

**Locus of Control.** The mean scores on the Teacher Locus of Control Scale (I+) (possible range of 1-14) were 6.55 for the total population, 6.04 for teachers testing, 6.66 for teachers not testing, and 7.06 for the teacher leaders. The mean scores on the I- scale (possible range of 1-14) were 4.70 for the total
population, 4.74 for teachers testing, 4.70 for teachers not testing and 4.20 for teacher leaders. There were significant differences between the mean scores on the teachers testing versus the teachers not testing.

One explanation for this could be that the teachers not testing (whose scores indicated that they are more internal) may feel more personally satisfied with their teaching efforts and do not need an outside factor, such as test results, to validate their performance. In fact, they would tend to be less influenced by external factors in general, which the testing program represents. They may also be taking a "wait and see" approach and will participate in the testing program in the future if the benefits to them are made clearer.

Personal Characteristics

Gender. Ninety-nine percent of the population was female so gender was not further examined in the study. Gender could be looked at in a future study if the entire population of male teachers in Work and Family Life were surveyed and compared to a representative number of female teachers. The sampling procedure of this study did not allow males to be specifically selected.

Age. The average age of the respondents was 43.2 years. This was higher than other groups of teachers in other studies. There was no relationship found between age and efficacy or locus of control scores. As more than one-half of the teachers surveyed were in one ten-year age range, this may indicate that Work and Family Life teachers are more homogenous than other groups of teachers and would be especially on a variable such as age, which they can do little to change. However, the literature points to few relationships between age and efficacy and locus of control (Tschannen-Moran et al, 1997; Burrell, 1994).
Professional Characteristics

**College Degree Level.** A majority of teachers surveyed held a Bachelor's degree (50.7 percent). The percentage holding a Master's degree was 35.9 percent and 12.8 percent held the M.S. + 30 designation. This indicates that Work and Family Life teachers are more highly educated than other vocational teacher groups (Redick, 1989), but lag slightly when compared with a broader population of teachers nationally (Darling-Hammond, 1990).

There was a low significant relationship between college degree obtained and teacher efficacy. The relationship between college degree obtained and teacher locus of control was approaching significance. There was nothing found in the literature review that points to why this is so. Apparently education level has little impact on a teacher's feeling that they can make a difference or their tendency to be internally or externally motivated.

It is important to note that teachers get advanced degrees for a lot of different reasons and that having an advanced degree doesn't convey the content of the degree. For example, some teachers get advanced degrees in educational administration, which may not make them a better teacher. Some Master's degrees are actually certification programs. Many colleges most likely do not include direct efforts to build efficacy or locus of control in their advanced degree programs, but do help students become successful, which has been linked to efficacy. What may be important to research is not degree level, but the specific content of the degree program in relation to efficacy and locus of control.

**College Attended.** The largest number of teachers obtained their teacher certification from The Ohio State University (22.9 percent). A similar number of students received degrees from universities mainly outside of Ohio. The balance
received degrees from smaller colleges within Ohio that have Family and Consumer Sciences programs. A large majority (89.2 percent) of respondents had a major in Home Economics Education. The relationships between teacher locus of control and efficacy and university attended were mixed. Some were negative, some positive, but all were low or nonexistent relationships.

An explanation for this could be that because teacher education programs follow similar state and national standards in the preparation of teachers, differences among them may be constrained by the adherence to the standards. If significant differences were found among the institutions, it would then be necessary to pinpoint which factors about a college could make a difference, for example, the overall quality of education, specific structure of the teacher education program, advisor/advisee relationships and certain content of courses.

**Type of District.** Teachers were employed in the following school district types: rural (34.9 percent), small city/town (29.4 percent), suburban (20.6 percent) and urban (14.7 percent). There was a small negative relationship between teacher efficacy and teachers who taught in rural districts. There was a small positive relationship between efficacy and teachers who taught in urban districts. It would appear that the type of district that a teacher teaches in has an effect upon their feelings of efficacy. This could be related to school climate, resources available in districts, salaries, status of the school and/or profession in the location, and other factors. Many of these factors are low in rural districts which may account for the negative relationship with efficacy. Some of these factors are higher in urban districts, especially salaries and financial resources, which may account for the positive relationship there.
Years in Teaching. The average years of teaching experience was 17.2 years among the entire sample, 18.53 for teachers testing, 16.99 for teachers not testing, and 20.27 for the teacher leaders. Work and Family Life teachers have more years of teaching experience than teachers in other certification areas (Darling-Hammond, 1990). There was no relationship between efficacy and years in teaching. There was a significant positive relationship between locus of control scores (I- scale) and years teaching. This means that teachers in this study who are more externally motivated are more likely to have higher years in teaching. The literature points to no plausible reason why this would be true and this part of the study may need replicated to see if the results are similar when examined again.

Attitudes About Teaching. In general, teachers surveyed felt positive about their career choice. This speaks well for the profession in that it indicates a satisfaction that some groups of teachers may not feel. However, the lack of variance in teachers' responses to this question may have had an impact when the relationships with other variables were examined. There was a low significant relationship between attitudes about teaching and efficacy. There was also a low positive relationship between attitudes about teaching and the I+ subscale. These relationships were expected to have been higher based upon the results of other studies.

Perceptions of Adequacy of Teacher Preparation Program. When teachers were asked how adequately their teacher preparation program prepared them in specific areas, there were strong correlations (p=.000) with efficacy in 10 out of 11 areas surveyed. One area (dealing with student misbehavior) had a significant relationship with the I+ subscale and three areas (teaching methods,
evaluating student learning, and classroom management) had negative relationships with the I- subscale. The strength of these correlations was interesting and suggests that how teachers perceive their teacher preparation program has an impact upon their feelings of efficacy.

Professional Development Preference. The most preferred method of professional development among teachers surveyed was workshops. There was no relationship between efficacy scores and preferred method of professional development. There was a small positive relationship between professional association meeting preference and the I+ subscale score. It is possible that the questions asked did not delineate the different types of professional development well enough. Studies in the literature have tended to look at the impact of a certain professional development activity on efficacy, not preference, therefore parallels with this study cannot be readily made.

Student Achievement Scores. The mean post-test score of teachers giving the Personal Development tests was 24.50. (Possible score of 0 to 40). The mean post-test score of teachers giving the Resource Management test was 23.34. (Possible score of 0 to 40). The mean gain for teachers giving the Personal Development tests was 2.97 points. The mean gain for teachers giving the Resource Management test was 2.25. There were no relationships between student achievement scores and efficacy and locus of control scores. This was true even when the scores were examined by highest and lowest quartiles.

Why this is so needs to be studied further. Perhaps the new curriculum hasn’t been as fully adopted as is thought, causing lower gain scores and a lessor measure of student achievement. Problems were known to have occurred with
the test administration which could have impacted the scores. It is also possible that because the overall gain scores were not that different, a relationship with efficacy could not be seen.

It could also be that the test is not an adequate measure of the curriculum and needs to be revised. A content analysis of the curriculum could be done to see if the questions actually relate to the curriculum being taught. It is known that the curriculum is problem-based, but the test is 100 percent multiple choice questions. Perhaps a blending of different types of assessment measures is needed, that would allow students to apply problem-solving to their answers. Multiple assessments have been cited in the literature as being more effective and should be investigated for use in this instance.

Predictors. The best predictors of personal teaching efficacy were: perceptions of adequacy of teacher preparation program, attitudes about teaching, rural school type and professional development preference. These variables and their multiple correlation coefficient accounted for 26.6 percent of the variance related to personal teaching efficacy. As personal teaching efficacy can be considered an attitude, and the first two predictors are also attitudinal in nature, it is not surprising that they were strongly related. The relationship with rural school type was negative as would be expected, based upon the previous discussion of salaries, status and availability of resources in rural Ohio schools.

The low percentage of variance attributed to the predictors examined suggests that there are other factors at work that impact upon teacher efficacy. For example, student factors, such as their motivation and ability level, may play a
part in influencing teachers' feelings of efficacy. Also, community factors, such as parental involvement in schools and socioeconomic levels of families served might make a difference.

The best predictors of locus of control were: years in teaching, rural school type, suburban school type, attitudes about teaching, age, resource management gain scores, and professional development preference. However, these variables and their multiple correlation coefficient account for 6.8 percent of the variance on the locus of control \( l+ \) subscale and only 2.2 percent of the proportion of variance on the \( l- \) subscale.

A conceptual model was developed reflecting the variables of interest that were derived from the review of literature. This model was revised to include only those variables which significantly predicted efficacy and locus of control. The predictors are illustrated in Figures 3 and 4.
### Professional Characteristics

- Adequacy in Dealing With Misbehavior - R² = 0.112
- Attitudes About Teaching - R² = 0.088
- Adequacy in Selecting Instructional Materials - R² = 0.216
- Contribution to Academic and Intellectual Qualities - R² = 0.233
- Adequacy in Diagnosing Needs of the Learner - R² = 0.243
- Rural School Type - R² = 0.251
- University Course Preference - R² = 0.257
- Workshop Preference - R² = 0.266

---

Figure 4: Revised model of predictors of efficacy of Work and Family Life teachers
The hypotheses that directed this study were as follows:

1. Work and Family Life teachers have varying levels of personal teaching efficacy. Significant positive relationships exist between personal teaching efficacy scores and attitudes about teaching. As relationships were found, this hypothesis was retained.
2. Work and Family Life teachers have varying levels of personal teaching efficacy. Significant positive relationships have existed between teaching efficacy scores and student achievement scores in several other studies. No relationships were found between these two variables, therefore the hypothesis was rejected.

3. Work and Family Life teachers have varying levels of locus of control scores. Significant positive relationships exist between internal (I+) locus of control scores and personal teaching efficacy. Relationships were found and the hypothesis was retained.

4. Positive attitudes about teaching will be predictive of higher personal teaching efficacy scores. As this was the highest predictor of personal teaching efficacy, the hypothesis was retained.

5. Higher teacher efficacy scores and internal locus of control scores will be predictive of higher student achievement scores. As no relationships were found with either variable and student achievement, the hypothesis was rejected.

Conclusions

As a result of analyzing the findings from this study, some conclusions can be drawn. They are as follows:

1. Teacher professional characteristics do have an impact upon their personal teaching efficacy. In this study, these included perceptions about teacher preparation program, attitudes about teaching, professional development preference and school type.
2. Locus of control is less likely to be impacted by teacher personal and professional characteristics. The relationships were less significant among the variables studied and locus of control than the relationships with efficacy.

3. Attitude is an important factor in how teachers view themselves and their ability to help students. As shown in this study, teachers who had more positive attitudes about teaching tended to have higher efficacy scores and more internal locus of control scores.

4. School type or location effects a teacher's feelings of efficacy. As shown, a small negative relationship existed between efficacy scores and teachers who taught in rural districts. A small positive relationship existed between efficacy scores and teachers who taught in urban districts.

5. As teachers remain in teaching they become more influenced by external factors. This has been concluded because there was a significant positive relationship between mean scores on the I- (external) subscale for locus of control and years in teaching.

6. A teacher's perception about the adequacy of their teacher preparation program is important to their sense of efficacy. This variable had the most significant relationships with efficacy of any in the study. A recent national commission entitled Teaching is America's Future (Darling-Hammond, 1996) found that good student learning is related to good teaching and that good teaching is related to good teacher preparation. The findings of this study would support this premise.

7. Participants in the Ohio Work and Family Life Teacher Leader Institute were well selected for the program. This study showed that the teacher
leaders stood out in terms of having higher efficacy scores and more internal locus of control scores. They also are more experienced and had more positive attitudes about teaching.

8. The teacher shortage in Work and Family Life will continue and grow more severe as highly experienced and educated teachers retire. Ohio Work and Family Life teachers are more mature than other groups of teachers. They have more years in the classroom, as well as higher levels of education, making their loss significant when they do retire.

9. When gain scores on the Resource Management and Personal Development tests are examined, it is apparent that students overall are learning in these courses. Why some teachers produced negative gain scores needs to be examined but obviously quality of teaching and quality of student learning varies from teacher to teacher and even between individual teachers.

Implications

The findings and conclusions of this study lead to several implications for educators in general and teachers, teacher educators, supervisors, and policy makers in specific. Because personal teaching efficacy is impacted by teacher professional characteristics, teacher educators who help shape some of these professional characteristics, should give thought as to how they impact these characteristics to positively affect feelings of personal teaching efficacy.

For example, how can preservice teachers be exposed to activities that will lead to more positive attitudes about teaching? Improving the status of Colleges of Education in universities and the appearance of the teaching facilities on campus could be one way in which this would occur. Also, exposing students to
good teachers who are effective and have positive attitudes may have an
influence. Improving the status of the education profession among the general
public and raising teachers’ salaries may also help prospective teachers feel more
positive.

Since a teacher’s feelings of how adequately their teacher preparation
program prepared them to deal with student misbehavior and diagnose the needs
of the learner was related to efficacy, how can teacher education programs insure
that they are adequately preparing teachers in these areas? Specific classes on
preventive discipline may need to be included in the preparation program, rather
than the discipline classes now being offered. More courses on assessment and
better use of diagnostic tools may be needed to help prospective teachers identify
the needs of students. More clinical experiences would be helpful in directly
exposing students to real-life situations early in the preparation program.

Bendixen-Noe in a 1992 study, suggested that individual differences be
taken into consideration when planning preservice and inservice teacher
education programs. Some teacher education students may have strengths or
deficits in certain areas that would help guide the development of an
individualized teacher education program. Assessments on individual constructs
might help point out such deficits. For example, an evaluation of general efficacy
at the time of enrollment in the teacher education program might help determine
how much help a student needs in building feelings of efficacy. Different types of
learning inventories which identify students’ cognitive styles would also be useful.

Since the perceptions of adequacy of teacher education program was so
important, teacher educators should place emphasis on helping graduates leave
their preparation program with positive feelings about the experience. More
assessments or evaluations toward the end of the teacher preparation program would help determine whether this is occurring and what could be done to build more positive feelings. By building students' confidence through use of multiple assessments, such as portfolios and other diagnostic tools that help teachers diagnose the learner, new teachers will feel more effective and positive during their early years in teaching.

As school type was shown to have an impact upon efficacy and locus of control, more professional development programs may need to be developed for teachers, especially in rural areas, to help develop efficacy among these individuals. Efforts to improve resources to rural districts, such as those of the Coalition for Equity and Adequacy and the current debate in the Ohio legislature, should be supported and broadened.

Since the teacher leaders stood out in several ways when compared to other teachers, particularly in areas of efficacy and locus of control, this lends support for the continuation of the Ohio Work and Family Life Teacher Leader Institute. More teachers in more programs should be afforded the opportunity to participate in such activities.

Because teachers with higher efficacy scores and more internal locus of control scores had more positive attitudes about teaching, it is important for educational decision-makers, especially local administrators, to think about ways in which teachers can be helped to feel more positive about their profession. Improving school climate and the status of teaching may help teachers feel more positive about their career.
Recommendations

Recommendations for further research can be identified as a result of this research. While this study examined factors related to efficacy and locus of control, the variables affecting them are complex. Continued research is needed regarding additional factors related to efficacy and locus of control in Family and Consumer Sciences and other areas of education. For example, in this study it is unclear whether the teacher leaders came to the Institute with efficacious feelings or acquired them there. A measure of the teacher leaders' efficacy before and after participation in the Institute would help to answer this question.

Standard measures of efficacy and teacher professional variables must be used. Tschannen-Moran et al. (1997) recommended that if progress is to be made in efficacy research, researchers must stop using instruments that have questionable reliability and validity (i.e. Rand items) and items that mix theoretical underpinnings and time frames. Agreement on a standard measure of efficacy is needed. The instrument used in this study was chosen because it was relatively short but adequately measured the construct, however, other recent studies have used other instruments, thus exacerbating the problem.

A significant positive relationship was shown between efficacy and teacher locus of control, which has occurred in other studies. An examination of what makes teachers more internally oriented is needed, which holds implications for teacher preparation and professional development programs. Further research could help determine if efficacy and locus of control are innate characteristics and/or whether they can be impacted by external factors such as college degree programs. Study of locus of control with teacher variables not looked at in this study is needed as well.
School district type showed relationships with student achievement scores, efficacy and locus of control. Further studies are needed to pinpoint exactly what it is about school district type or location that makes a difference in the variables studied. Inequities in resources and funding are a probable link. Other factors may be at work such as the parents' expectations about education, the work ethic of the community, or the students' motivation level.

Teachers had certain methods of professional development that they preferred over others. Workshops received the largest response, followed by professional association meetings. University courses and State Department inservices did not receive high rankings. It may be important for university and state education officials to examine their methods of professional development to make them more effective and desirable to teachers.

This study's use of Work and Family Life student achievement scores was new, and thus, additional research using this new data base should be undertaken. This would provide future direction for the competency testing program. The results may lend insight for professional development programs needed to correct deficiencies discovered in the testing process. For example, it appears from this study that teachers who are older need more in-service opportunities to strengthen instruction in the Personal Development area, as their students tended to score lower on this test. Identifying predictors of student achievement on these two tests would be beneficial to the field and would give teachers insights on how to change their practices.

Since the testing program allows teachers to voluntarily participate, further research on how the teachers who volunteer differ from those who don't could provide important insights. If the Ohio Work and Family Life Teacher Leader
Institute continues, an additional look at these teachers who participate in a unique, sustained professional development program might provide for interesting findings. Pretest/posttest design would allow a researcher to look at how these teachers changed as a result of the Institute.

When new competency test data becomes available, it may be possible to more closely examine student achievement scores in relation to efficacy and locus of control. This study attempted to use a quartile distribution of student achievement scores to compare variables, but the sample size became too small. With more test scores in the next administration, this type of examination may be possible. A critical analysis of the state testing program is needed to determine if the test truly teaches what is being taught in the curriculum. It is obvious that an objective test is not the best way to measure learning in a curriculum that is based upon problem solving.

Some other recent studies in a variety of subject matters have failed to make a link between student achievement scores and teacher factors being studied, as was the case with this research. It is important to the profession to examine why this is occurring and whether it is the result of research design, testing factors or other reasons. There are teacher variables that impact student achievement, including the ones examined in this study, but they need to be studied in more depth. Perhaps there are more student variables that could be examined, such as student locus of control or effort shown toward education, or additional school/community factors, such as school climate, education level of parents or community support level.

This study utilized survey research, however, different research methodologies should be employed to investigate efficacy, locus of control, and
student achievement. Classroom observations could be used to compare teacher behaviors and teaching methods in natural settings. Qualitative research techniques would provide opportunities to gain rich insights on teacher attitudes and preparation programs related to efficacy and locus of control. Individual teacher interviews, essays and focus groups could be used.

Lastly, additional research using this data base and the student achievement scores should be undertaken. A further comparison of teachers who produced high test scores and teachers who produced low test scores might provide additional insights into factors that impact student achievement. This would be especially helpful once more achievement scores are available in the next administration. Examining teachers of students with the highest and lowest scores might identify other factors that impact efficacy and locus of control.
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APPENDIX A

Data collection instruments
Permission to use the Personal Teaching Efficacy Scale was granted by Dr. Patricia Ashton, College of Education, University of Florida. Permission to use selected questions from the Perceptions of Professional Development instrument was granted by Dr. Sharon Redick, College of Human Ecology, The Ohio State University. Permission to use selected questions from the National Survey of Students in Secondary Education was granted by Dr. Kenneth Howey, College of Education, The Ohio State University.

The Personal Development and Resource Management tests are copyrighted materials and property of the Ohio Department of Education. These tests cannot be duplicated without the written consent of the Ohio Department of Education.
WORK AND FAMILY LIFE TEACHER QUESTIONNAIRE

PART I. - YOUR PERSONAL AND PROFESSIONAL CHARACTERISTICS

These questions relate to demographic information and characteristics about your background. Circle the number representing the correct response.

1. What was your major in college? 1) home economics education 2) family/child studies 3) general home economics 4) general education 5) other subject matter (please list) _____________________________

2. Gender: 1) Female 2) Male

3. Type of school currently employed in; 1) rural 2) small town/city 3) suburban 4) urban

4. Highest degree obtained: 1) less than Bachelors 2) B.S. or B.A. 3) M.S. or M.A. 4) M.S. + 30 5) PhD

5. Institution at which teacher certification in family and consumer sciences was obtained: 1) Ohio State University 2) Miami University 3) Bowling Green State University 4) Kent State University 5) Ohio University 6) Ashland University 7) other university (please list) _____________________________

6. Please describe your present feelings about teaching as a career: 1) Very positive 2) Somewhat positive 3) Neutral 4) Somewhat Negative 5) Very negative

7. Number of years in teaching: _______ years

8. Your age: _______ years

The following items relate to your professional development. Circle the number representing the correct response.

9. My preferred method/mode of professional development is (choose only one): 1) university courses 2) workshops 3) State Department of Education inservices 4) professional association meetings (i.e. All-Ohio Vocational Education Conference, AVA Convention) 5) self-directed activities (i.e. reading, networking, travel, etc.)

10. Are you participating in the Ohio Work and Family Life Teacher Leader Institute? 1) yes 2) no

11. If yes, how long have you been participating? 1) less than one year 2) one year 3) two or more years.

Please continue by turning to the back of this page.
Directions: To what degree do you think your teacher preparation program adequately prepared you in the following areas? Circle the number representing the appropriate response.

<table>
<thead>
<tr>
<th>Area</th>
<th>Not Prepared</th>
<th>Prepared</th>
<th>Well Prepared</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. teaching methods</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13. classroom management</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14. instructional planning</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15. dealing with student misbehavior</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16. curriculum development</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17. selection and use of instructional materials</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18. teaching with computers</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19. understanding and responding to student differences</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20. working effectively with other teachers</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. diagnosing the needs of the learner</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. evaluating student learning</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Directions: To what degree do you think your teacher preparation program contributed to your development in the following areas? Circle the number representing the correct response.

<table>
<thead>
<tr>
<th>Area</th>
<th>Little or no contribution</th>
<th>Moderate contribution</th>
<th>High contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. academic, scholarly, and intellectual qualities</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24. aesthetic, expressive, and creative qualities</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25. critical thinking abilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
## PART II. - YOUR OPINIONS ABOUT TEACHING SITUATIONS

**Directions:** Circle the number that corresponds most closely with your feelings regarding the following situations.

<table>
<thead>
<tr>
<th>Extremely ineffective</th>
<th>Moderately effective</th>
<th>Extremely effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3  4  5  6  7</td>
</tr>
</tbody>
</table>

26. One of your students misbehaves frequently in your class and is often disruptive and hostile. Today in class he began roughhousing with a friend in the back of the class. You tell him firmly to take his seat and quiet down. He turns away from you, says something in a belligerent tone that you cannot hear and swagger to his seat. The class laughs and then looks to see what you are going to do. How effective would you be in responding to this student in a way that would win the respect of the class?

27. Mana, a developmentally handicapped student in your class, has been working diligently, but still performs below grade level in all subjects. At a conference, her mother says that she does not expect much of the girl because Mana is “dumb”, just like herself. How effective would you be in talking to Mana’s mother about her feelings and about the effect that parents’ expectations can have on their child’s school achievement?

28. Your county has mandated that all teachers must restructure their course requirements to ensure adequate development of students’ basic skills by including those elements in each lesson plan. How effective would you be in incorporating achievement of basic skills objectives into your lesson plans?

29. Students in your school group together in same-sex, same-race cliques. Your principal has requested that each teacher work to promote more positive interactions among the groups. How effective do you feel you would be in helping your students to develop more positive interactions?

30. Six low-achieving female students are not getting much from your class. Lately they have begun to “hang around together” and to advertise that they do not like you or your class. They have begun to fool around, disrupt your lessons, and occasionally ‘talk back’. When you attempt to involve them in class work, they either make jokes or sit sullenly. How effective would you be in eliminating their disruptive behavior?

31. This year your principal has assigned you to teach a class of low-ability students in your subject matter area. The teacher who taught this class last year tells you that these are the slowest students that she has taught in her 20-year teaching career. How effective would you be in increasing the academic achievement of the students in this class?

32. You have a student who never hands in assignments on time, seldom gets to class before the bell rings, and inevitably forgets to bring books or pencils to class. He obviously has the ability to do above-average work, but you have discussed this matter with his parents and they do not seem to understand the importance of school achievement. How effective would you be in motivating this student to get to work?
33. A new student has been assigned to your class. Her records indicate that she never does her homework and does not seem to care about her education. Her IQ score is 83, and her achievement scores are below the 30th percentile. How effective would you be in increasing her achievement test scores?

34. The student-teacher ratio in your class is 20 to 1. You must plan your lessons to meet the individual interests and abilities of the students. How effective would you be in designing activities to match the individual interests and abilities of the students in your class?

35. Because of repeated failure, one of your students confides to you that she has given up and will attend school only until she can find a way to drop out. How effective would you be in persuading her that she can be successful in school?

36. A number of your students have been sleeping in class. They do poorly on in-class assignments and seldom turn in homework. You learn that they are taking drugs. How effective would you be in helping the students with their drug problem?

37. A learning-disabled student has been mainstreamed into your classroom. He has been described by his previous teachers as being extremely hyperactive and having severe reading problems. How effective would you be in teaching this student?

38. A new teacher in your school has been reviewing cumulative records for her students and asks you to explain the difference between grade equivalent and percentile ranks for several of her students on the standardized achievement battery. How effective would you be in explaining the difference between those two types of scores?

39. You have been selected to work on a curriculum selection committee to choose textbooks and materials to be used in your county for the coming year. The materials chosen must fit a wide range of instructional needs for students of differing abilities. How effective would you be in doing this work?

40. Your school has adopted an instructional textbook in your area with excellent objectives and teaching materials, but almost nothing in the form of tests or exercises to monitor student progress. How effective do you feel you would be in developing a set of evaluation procedures to accompany the text for your grade level?
PART III. - YOUR OPINIONS ABOUT STUDENTS AND TEACHING

Directions: Select the one response of each pair which you more strongly believe to be true. Be sure to select the one you actually believe, not the one you think you should choose or the one you would like to be true. This is a measure of personal belief; there are no right or wrong answers.

41. When the grades of your students improve, it is more likely:
   1. because you found ways to motivate the students, or
   2. because the students were trying harder to do well.

42. Suppose you had difficulties in setting up learning centers for students in your classroom. Would this probably happen:
   1. because you lacked the appropriate materials, or
   2. because you didn’t spend enough time in developing activities to go into the center?

43. Suppose your students did not appear to be benefiting from a more individualized method of instruction. The reason for this would probably be:
   1. because you were having some problems managing this type of instruction, or
   2. because the students in your class were such that they needed a more traditional kind of approach.

44. When a student gets a better grade on his report card than he usually gets, is it:
   1. because the student was putting more effort into his schoolwork, or
   2. because you found better ways of teaching that student?

45. If the students in your class became disruptive and noisy when you left them alone in the room for five minutes, would this happen:
   1. because you didn’t leave them interesting work to do while you were gone, or
   2. because the students were more noisy that day than they usually were?

46. When some of your students fail a test, it is more likely:
   1. because they weren’t attending to the lesson, or
   2. because you didn’t use enough examples to illustrate the concept.

47. Suppose you were successful at using learning centers with your class of 25 students. Would this occur:
   1. because you worked hard at it, or
   2. because your students easily conformed to the new classroom procedure?

48. When a student pulls his or her grade up from a “C” to a “B”, it is more likely:
   1. because you came up with an idea to motivate the student, or
   2. because the student was trying harder to do well.

49. Suppose you are teaching a student a particular concept and the student has trouble learning it. Would this happen:
   1. because the student wasn’t able to understand it, or
   2. because you couldn’t explain it very well?

50. When a student does better in school than he usually does, is it more likely:
   1. because the student was trying harder, or
   2. because you tried hard to encourage the student to do better?
51. If you couldn't keep your class quiet, it would probably be
   1. because the students came to school more rowdy than usual, or
   2. because you were so frustrated that you weren't able to settle them down.

52. Suppose a project done by your class was voted the "Best Class Project" by students and faculty in your school.
   Would it be
   1. because you put in a lot of time and effort as the director, or
   2. because the students were cooperative.

53. If one of your students couldn't do a class assignment, would it be
   1. because the student wasn't paying attention during the class lesson, or
   2. because you gave the student an assignment that wasn't on his or her level?

54. Suppose you wanted to teach a series of lessons on Mexico, but the lessons didn't turn out as well as you had expected. This would more likely happen
   1. because the students weren't that interested in learning about Mexico, or
   2. because you didn't put enough effort into developing the lessons.

55. Suppose one of your students cannot remain on task for a particular assignment. Would this be more likely to happen
   1. because you gave the student a task that was somewhat less interesting than most tasks, or
   2. because the student was unable to concentrate on his or her schoolwork that day?

56. Suppose you were unable to devise an instructional system as requested by the principal, which would accommodate the "needs of individual students" in your class. This would most likely happen
   1. because there were too many students in your class, or
   2. because you didn't have enough knowledge or experience with individualized instructional programs.

57. If the students in your class perform better than they usually do on a test, would this happen
   1. because the students studied a lot for the test, or
   2. because you did a good job of teaching the subject area?

58. When the performance of a student in your class appears to be slowly deteriorating, it is usually
   1. because you weren't trying hard enough to motivate him or her, or
   2. because the student was putting less effort into his or her schoolwork.

59. Suppose a new student was assigned to your class, and this student had a difficult time making friends with his or her classmates. Would it be more likely
   1. that most of the other students did not make an effort to be friends with the new student, or
   2. that you were not trying hard enough to encourage the other students to be more friendly toward the newcomer?

60. If the students in your class performed better on a standardized achievement test given at the end of the year compared to students you had last year, it would probably be
   1. because you put more effort into teaching this year, or
   2. because this year's class of students were somewhat smarter than last year's.
61 Suppose, one day you find yourself reprimanding one of your students more often than usual. Would this be more likely to happen:
   1. because that student was misbehaving more than usual that day, or
   2. because you were somewhat less tolerant than you usually are?

62 Suppose one of your underachievers does his or her homework better than usual. This would probably happen:
   1. because the student tried hard to do the assignment, or
   2. because you tried hard to explain how to do this assignment.

63 Suppose one of your students began to do better schoolwork than he usually does. Would this happen:
   1. because you put much effort into helping the student do better, or
   2. because the student was trying harder to do well in school?

64 Suppose you ask two students to work together on an activity and the students were able to work together well. Is it more likely:
   1. that they were some of your better students, or
   2. that you gave the students explicit instructions on what to do?

65 If a student who is usually very quiet begins to talk in class, is it more likely:
   1. because the student finally found something that interests him or her, or
   2. because you tried hard to encourage the student to talk in class.

66 If the students in your class remained quiet when you left them alone for a few minutes, this would more likely happen:
   1. because you knew how to keep them quiet when you are out of the room, or
   2. because the students were more controllable than usual.

THANK YOU FOR YOUR TIME IN COMPLETING THIS SURVEY. PLEASE RETURN IN THE ENCLOSED ENVELOPE BY APRIL 21 TO:

Work and Family Life Teacher Survey
Ohio Department of Education
Rm 909 65 S. Front St.
Columbus, OH 43215-4183

Comments about the survey or study
APPENDIX B

Letters
April 1, 1997

Dear Work and Family Life Teacher:

You have been chosen to participate in an important study regarding the Work and Family Life OCAP testing program. Your participation is requested because you did not administer the post-tests during the fall administration period. Teachers who did administer the post-tests are also being surveyed. We hope that the results of this study will provide support for our efforts to promote Work and Family Life teachers and programs.

The enclosed survey takes approximately 20-30 minutes to complete. Please take some time to complete the survey and return it in the enclosed postage-paid envelope. Your responses are key to the success of this research. Your responses will be kept confidential, and your identity will remain anonymous throughout the data analyses and reporting. We need your response by April 21, 1997.

Each response is very important to ensure the high overall response rate required for accurate interpretation of survey results. Our funding is not sufficient to permit us to reimburse each respondent for the time it takes to complete the survey. But, to express our appreciation to you for completing and returning the survey, your name will be entered, upon receipt of your completed instrument in a drawing for a free Family and Consumer Sciences Assessment Handbook or the new Family and Consumer Sciences Video to be introduced this fall.

We appreciate your cooperation and participation in this project. We will share the research results with you upon completion of the study. If you got on the wrong mailing list and did do the post-tests at the end of fall semester, please complete the survey anyway and indicate this on the survey. Should you have questions, please contact Lynne Hall at (937) 599-3010. Thank you for your cooperation.

Sincerely,

Dee Allenspach
Assistant Director
Family and Consumer Sciences

Lynne Hall
OSU Doctoral Student and
Hospitality & Facility Care Instructor
TO: Work and Family Life Teachers
FR: Dee Allenspach and Lynne Hall
RE: Work and Family Life Teacher Survey
DA: April 22, 1997

Several weeks ago you received a survey that you were asked to complete and mail back to The Ohio Department of Education by April 21. This deadline is now past but we still need the results of your survey for a successful study. If you cannot find your survey, please call Lynne Hall at 513-599-3010 to request another copy. If you just recently mailed you copy and our letters passed in the mail, thank you for your response.

We will be letting you know about the results of the survey sometime in the fall when the study is completed. Your responses will be kept confidential and will only be known by the researcher for purposes of follow-up. Thank you for your time and consideration of this request.