FORMAL AND INFORMAL LEARNING EXPERIENCES OF MIDDLE GRADES PRINCIPALS

by

DANA L. BICKMORE

(Under the Direction of Denise M. Glynn)

ABSTRACT

The purpose of this study was to identify the formal and informal professional learning experiences in which middle grades principals participate and the perceived contributions of these experiences to effective middle grades leadership. This study also examined the relationship between these professional learning experiences and developmentally responsive middle grades leadership. Two instruments, *The Professional Learning Experience – Middle Level Questionnaire* (PLEQ_ML) and the *Adapted Middle Level Leadership Questionnaire* (Adapted MLLQ) were mailed to all (N = 393) middle grades principals in the state of Georgia. The PLEQ-ML measured the professional learning experiences in which principals participated, as well as those they perceived as contributing and contributing most to their effectiveness. The Adapted MLLQ measured developmentally responsive middle level leadership. One hundred sixty seven principals returned the instruments for a response rate of 42.5%.

The results of this study indicated principals participated at various levels in a variety of both formal and informal professional learning experiences, with reading professional journals and books, and participating in conferences and university classes being the most common

experiences in which principals participated. The vast majority of principals perceived both formal and informal professional learning experiences in which they participated as contributing to their effectiveness. Principals perceived networking inside and outside school, participating in conferences at the district level, and participating in study groups outside of school as the professional learning experiences that contributed most to their effectiveness. When comparing professional learning experiences with developmentally responsive middle grades leadership, however, participation in informal, collaborative professional learning experiences, such as networking within the school, were most associated with developmentally responsive middle level leadership.

The findings from this study indicate that participating in professional learning experiences is both perceived as contributing to effectiveness and associated with developmentally responsive middle level leadership. In addition, participating in informal, collaborative professional learning experiences is associated more with developmental responsiveness than is participating in formal professional learning experiences. As such, policy makers may be advised to provide more informal staff development for middle grades principals to help them work collaboratively with their staff and other professionals.

INDEX WORDS: Adult Learning, Educational Change, Middle Schools, Principals, Professional Development

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by

DANA L. BICKMORE

B.S., University of Utah, 1977

M.S., University of Utah, 1982

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2005

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by

DANA L. BICKMORE

Major Professor:	Denise M. Glynn
Committee:	Gayle Andrews Laurie E. Hart Sally Zepeda

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
August 2005

ACKNOWLEDGEMENTS

Coming to this dissertation a little later in life than the typical student has several implication, one of which is a greater number of people and experiences that have contributed to the completion of this research. In naming specific individuals that have supported my efforts I fear I will not recognize many that were instrumental in the entire educational process that has culminated in this document. There are, however, a few people that were exceptionally supportive specifically in the dissertation process.

A sincere and heart felt thanks to Dr. Denise Glynn, my major professor, for her positive and continuously upbeat support throughout my research and writing. I felt valued and competent in her care.

Thanks to the members of my committee, Dr. Gayle Andrews, Dr. Laurie Hart, and Dr. Sally Zepeda. For the past three years they have listened patiently to the many stories from my practice, challenged my thinking and writing, and guided me to a better understanding of the career path I was entering.

Last, and most importantly, I want to thank my family and extended family for their sacrifices, patience, and support. I particularly want to thank my wonderful husband and eternal companion for convincing me that completing a Ph.D. was really in my best interest. As we pursued doctoral degrees together, he debated educational theory, cajoled, and argued with me; made me laugh at difficulties and obsticles; and supported me with all his heart. He provided the foundation that made this process possible and rewarding.

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CHAPTER 1

INTRODUCTION

Since the early 20th century, educators have advocated reorganizing schools for young adolescents to meet better their educational, social, emotional, physical, and moral needs (S. N. Clark & Clark, 1993; Commission on the Reorganization of Secondary Education & National Education Association of the United States, 1928; Cuban, 1992; Gross, 2002; Manning, 2000). Junior high schools were initially forwarded as the structure to meet the needs of this age group and to reach the overall aims of education in the United States. By the 1960s, those concerned with the education of young adolescents perceived junior high schools to have lost their focus on the developmental needs of 10 to 15 year olds. The middle grades movement emerged enveloping many of the tenets of the idealized junior high school (S. N. Clark & Clark, 1993; Gross, 2002; Juvonen, Le, Kaganoff, Augustine, & Constant, 2004).

Middle grades education today, as defined by advocates for young adolescents, encompasses a set of concepts that define a vision, philosophy, structures, and practices for educating students in the middle grades. Proponents of young adolescents suggest that this set of concepts, when implemented in schools, results in positive outcomes for students by meeting the developmental needs of young adolescents. Current research, though limited, appears to support advocates' and theorists' contention that adhering to these concepts of exemplary middle grades education results in improved student outcomes (Backes, Ralston, & Ingwalson, 1999; Felner et al., 1997; Flowers, Mertens, & Mulhull, 1999; Jackson, Felner, Millstein, Pittman, & Selden, 1993; Lee & Smith, 1993; Mertens & Flowers, 2003; Russell, 1997). The evidence is promising

that exemplary middle grades education, as defined by advocates, can provide for effective education for young adolescents.

Organizations promoting middle grades education increasingly recognize the important role the middle grades principal has in shaping exemplary middle grades schools (National Middle School Association, 2003b; Valentine, Trimble, & Whitaker, 1997). Jackson and Davis (2000) report, "No single individual is more important to initiating and sustaining improvement in middle grades school students' performance than the school principal" (p. 157). Middle grades advocates suggest that due to the unique vision, philosophy, structures, and practices of middle grades education, the effective middle grades principal, in addition to being grounded in effective practices from the general school leadership literature, must engage in behaviors that initiate, sustain, and promote middle grades education (George & Grebing, 1992; National Forum to Accelerate Middle-Grades Reform, 2004b; National Middle School Association, 2003b; Valentine et al., 1997). Although these proponents of middle grades education view principal behaviors and practices that support the unique nature of middle grades education as key to student success in high performing middle grades schools, the research specifically related to the middle grades principalship is limited. Much of researchers' and theorists' understanding about the role of the middle grades principal in supporting student success at the middle grades is derived from the general educational leadership research (Lucas, 2003; Valentine et al., 1997).

Conjointly, researchers and advocates of middle grades education note that the preparation and professional development of middle grades principals are, for the most part, based on general school leadership principles (Gaskill, 2002; Lucas, 2003; Valentine, Clark, Hackman, & Petzko, 2002). Although preparation and professional development exist specifically for middle grades principals (National Forum to Accelerate Middle-Grades Reform,

2004b; Thompson, Davis, Caruthers, & Gregg, 2003), research indicates these programs are rare, and few middle grades principals are formally prepared to understand the developmental needs of young adolescents. Moreover, few principals understand the vision, philosophy, structures, and practices of middle grades education (McEwin, Dickinson, & Jenkins, 2003; Petzko, 2003; Valentine et al., 2002). As of 2000, fewer than 1% of middle grades principals had a middle grades undergraduate major, only 6% had a graduate major in middle grades education, and only 4% had an administrative endorsement specific to middle grades education (Valentine et al., 2002). Lucas (2003) confirmed that middle grades principals have little preparation in middle grades education, noting that they have taken, on average, only 1.7 undergraduate courses and 1.2 graduate courses related to middle grades practices. Additionally, Anfara, Brown, Mills, Hartman, and Mahar (2000) reported that 54% of the middle grades principals surveyed in their study of middle grades principals had no formal middle grades training, including university course work and professional development, prior to becoming the principal of a middle grades school. Further, the vast majority of principals in the study noted that general principal preparation, as a whole, was of little value or help in the development of their practice as middle grades principals.

Beyond preparation, little research exits outlining the professional development or ongoing professional learning experiences that contribute to middle grades principals' understanding of the characteristics, needs, and interests of middle grades students or the structures and practices of middle grades education. Three studies provide insight directly related to middle grades principals and their professional development. Valentine, Clark, Hackman, and Petzko (2004) in a recent national survey that defined effective principals as those who guided a school that successfully incorporated tenets of middle grades education, found that these

effective middle grades principals have taken more graduate level courses related to middle grades education than their peers. Ricciardi (1999), in a study of middle grades principals' perceptions of areas of needs and usefulness of professional development, noted principals indicated much of their professional development was useful but listed several issues with the delivery and content of instruction, especially the lack of content related to the middle grades learner. This study, however, used generic leadership behaviors and practices outlined by the National Policy Board for Educational Administration as the basis for evaluating needs and usefulness of professional development of principals, not the unique structures and practices related to middle grades education. Brown, Anfara, Hartman, Mahar, and Mills (2002), as part of a larger study examining the middle grades principalship, interviewed 17 middle grades principals and asked them to identify their learning needs in light of their changing role from managers to leaders. Brown et al. found that principals reported a need to learn more about collegial cultures, implementation and assessment of new learning strategies, and how to stay current organizationally, legally, financially, and technologically. In addition, these principals were unsatisfied with in-service and university work and expressed that on-the-job training was the primary means of learning. Although this study addressed what principals wanted to learn in the future, it did not focus on professional learning experiences in which principals had participated, nor did it focus on middle grades education. Moreover, like the Ricciardi study, the Brown et al. study examined leadership from a general school leadership framework.

Statement of the Problem

Despite this lack of research related to principals' preparation and professional development directly related to middle grades education, there are high performing exemplary middle schools shepherded by principals who seem to understand the characteristics, needs,

readiness, and interests of middle grades students. These principals engage in behaviors that support the vision, philosophy, structures, and practices of middle grades education. Anfara and Brown (2002) have developed a leadership model, Developmentally Responsive Middle Level Leadership (DRMLL), that frames exemplary middle grades principal leadership. The DRMLL model identifies behaviors and practices that initiate, maintain, and promote developmentally responsive, exemplary middle grades education for young adolescents. This model suggests that effective leadership for the middle grades is founded in principal behaviors that are responsive to the developmental needs of the middle grades learner, support faculty in their efforts to support the young adolescent learner, and promote developing and sustaining innovations of exemplary middle grades education (Brown & Anfara, 2002). Anfara, Roney, Smarkola, and DuCette (in press) have recently developed the Middle Level Leadership Questionnaire (MLLQ), an instrument that identifies the developmental responsiveness of middle grades leaders.

The MLLQ has the potential to provide insight into the middle grades principalship and how developmentally responsive principal leadership may translate into improved student outcomes through the implementation of the vision, philosophy, structures, and practices of middle grades education. Neither the DRMLL model nor the MLLQ, however, have yet to be employed extensively within a research context. Moreover, research that identifies those professional learning experiences in which middle grades principals engage and how these experiences are associated with developmentally responsive leadership that promote and sustain middle grades education is, at best, sparse.

Significance of the Study

Considering the limited research related to developmentally responsive middle grades principal leadership and the professional learning experiences that may contribute to it, there is a

need to investigate three areas related to the middle grades principalship. First, there is a need for additional research related to developmentally responsive middle grades principal leadership. Second, research is needed to identify the professional learning experiences in which middle grades principals engage. Third, research is needed to determine if relationships exist between middle grades leadership and professional learning experiences.

Beyond adding to the limited research related to developmentally responsive middle grades leadership and the professional learning experiences of middle grades principals, this study will enlist theoretical frames from the teacher professional development literature and adult learning literature that will provide new understanding of principal professional development. The seminal work of Joyce and Showers (2002) and McKibbin and Joyce (1980) provides an understanding of teachers' engagement in learning activities. Joyce and Showers, and McKibbin and Joyce conclude that teachers identified as actively engaged in professional learning experiences are more likely to implement innovations. To date there have been no studies that have examined how engagement by principals in professional learning experiences is associated with principal behaviors. The present study examined the engagement of middle grades principals in professional learning experiences to determine if that engagement was associated with principal behaviors that support innovations at the middle grades.

In addition, researchers have pointed to the National Staff Development Council's (2000, 2001) promotion of the use of adult learning theory in the professional development of teachers and principals (Brown et al., 2002; Petzko, 2004b). However, as Petzko (2003) has pointed out, few studies have tested adult learning theories in the context of principals' professional development. Marsick and Watkins (1990) proposed an adult learning theory model that suggests adults in the workplace are more likely to learn job skills and practices through informal rather

than formal learning experiences. According to Marsick and Watkins, only 17% of adult learning in the workplace occurs through formal learning, such as professional development classes, conferences, and institutes sponsored by an employer. Instead, Marsick and Watkins (2001) suggest that employees gain their understanding of work related skills and practices through informal activities such as networking and collaboration with coworkers. It is unclear if this same relationship exists in the learning experiences of principals. This study is the first to enlist the adult learning theory of formal and informal learning experiences in relation to school leadership of middle grades principals.

Purpose Statement

The purpose of this study was to identify the formal and informal professional learning experiences in which middle grades principals participate and the perceived contributions of these experiences to effective middle grades leadership. This study also examined the relationship between these professional learning experiences and developmentally responsive middle grades leadership.

Research Questions and Hypotheses

Research Questions

1. In what formal middle grades professional learning experiences have principals of middle grades schools participated?
2. In what informal middle grades professional learning experiences have principals of middle grades schools participated?
3. What formal middle grades professional learning experiences do middle grades principals perceive as contributing to their effectiveness as developmentally responsive middle grades leaders?

4. What informal middle grades professional learning experiences do middle grades principals perceive as contributing to their effectiveness as developmentally responsive middle grades leaders?
5. What formal middle grades professional learning experiences do middle grades principals perceive as contributing most to their effectiveness as developmentally responsive middle grades leaders?
6. What informal middle grades professional learning experiences do middle grades principals perceive as contributing most to their effectiveness as developmentally responsive middle grades leaders?
7. Is there a relationship between the formal middle grades professional learning experiences in which middle grades principals participate and developmentally responsive middle grades principal leadership behaviors?
8. Is there a relationship between the informal middle grades professional learning experiences in which middle grades principals participate and developmentally responsive middle grades principal leadership behaviors?
9. Is there a relationship between the formal middle grades professional learning experiences principals identify as contributing to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?
10. Is there a relationship between the informal middle grades professional learning experiences principals identify as contributing to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?
11. Is there a relationship between the formal middle grades professional learning experiences principals identify as contributing most to their effectiveness as middle

grades leaders and middle grades principals' developmentally responsive leadership behaviors?

12. Is there a relationship between the informal middle grades professional learning experiences principals identify as contributing most to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?

Hypotheses

The following hypotheses, stated in the null form, are enumerated for testing:

Ho1: There will no significant relationship between the formal middle grades professional learning experiences in which principals participate and developmentally responsive middle grades principal behaviors.

Ho2: There will no significant relationship between the informal middle grades professional learning experiences in which principals participate and developmentally responsive middle grades principal behaviors.

Ho3: There will be no significant relationship between the formal middle grades professional learning experiences principals identify as contributing to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors.

Ho4: There will be no significant relationship between the informal middle grades professional learning experiences principals identify as contributing to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors.

Ho5: There will be no significant relationship between the formal middle grades professional learning experiences principals identify as contributing most to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors.

Ho6: There will be no significant relationship between the informal middle grades professional learning experiences principals identify as contributing most to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors.

Overview of Methodology

This study employed survey methodology. The researcher mailed two questionnaires, an adaptation of the Middle Level Leadership Questionnaire (MLLQ) (Anfara et al., in press) and the Professional Learning Experiences Questionnaire-Middle Level (PLEQ-ML) developed by the researcher, to all 393 middle grades principals in the state of Georgia. The MLLQ (see Appendix A) identified, through self-report, the level of developmental responsiveness of the subjects and the middle grades structures and practices implemented at the principals' schools. The PLEQ-ML (see Appendix B) identified professional learning experiences in which principals participate, the perceived contribution of the experiences to principals' effectiveness as middle grades leaders, and demographic information about the principals and their schools. Descriptive analyses of the PLEQ-ML provided the basis to answer research questions 1 through 6. To answer research questions 7-12, the researcher used correlational analyses comparing data gained from the MLLQ and the PLEQ-ML to determine if relationships exist between principals' formal and informal professional learning experiences and developmentally responsive middle grades leadership.

Definition of Terms

The following terms are defined within the context of the study. These definitions are presented to help the reader understand and clarify the meaning of key terms.

Middle Grades Education

Schooling for young adolescents ages 10-15.

Exemplary Middle Grades Education

Middle grades education that incorporates the vision, philosophy, structures, and practices (see pages 14-21) advocated by educational organizations, theorists, and researchers focusing on young adolescents. These proponents define this schooling for young adolescents as success for every student, in schools that are pursuing academic excellence and equity through developmentally responsive structures and practices.

Success for Every Student

"[T]he healthy growth of young adolescents as lifelong learners, ethical and democratic citizens, and increasingly competent, self-sufficient young people who are optimistic about the future" (National Middle School Association, 2003b, p. 1). Success is determined through multiple academic, socio-emotional, physical, and moral measures.

Developmentally Responsive

Behaviors and practices that are based on an understanding of the characteristics, needs, readiness, and interests of the learner.

Developmentally Responsive Middle Grades Leadership (DRMLL)

Leadership that is grounded in the developmental characteristics of the middle grades learner. DRMLL promotes the initiation and maintenance of exemplary middle grades education (Anfara et al., 2000; Brown & Anfara, 2002; Roney, Anfara, Smarkola, & Ducette, 2004).

Effective Middle Grades Principal Leadership

Principals of middle grades schools whose leadership behaviors are congruent with developmentally responsive leadership.

Formal Professional Learning

Learning that takes place as a result of formal educational experiences related to professional practice as an educator. Formal learning takes place in and through institutions and often leads to degrees, credit, or advancement on pay schedules (Merriam & Caffarella, 1999). Voluntary or involuntary classes, seminars, and conferences offered by universities, professional organizations, the school system, or school would also be considered formal learning experiences.

Informal Professional Learning

Learning that takes place as a result of organized, purposeful experiences or activities outside degree or credit granting situations and that relate to professional practices as an educator (Marsick & Watkins, 2001; Merriam & Caffarella, 1999). Examples include learning networks within or across schools, systematic professional reading, self-directed learning, mentoring, networking, study groups, and participation in leadership roles in professional organizations.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

Introduction

The purpose of this study was to identify the formal and informal professional learning experiences in which middle grades principals participate and the perceived contributions of these experiences to effective middle grades leadership. This study also examined the relationship between these professional learning experiences and developmentally responsive middle grades leadership. Theorists and advocates for middle grades education claim effective middle grades principal leadership is an amalgamation of the effective leadership practices outlined in the general leadership literature and principal behaviors that support and promote exemplary middle grades education. A review of the literature, however, revealed few studies examining the intersection of principal leadership with what middle grades education advocates espouse as exemplary education for young adolescents. There is a dearth of literature connecting middle grades leadership with exemplary middle grades education.

Available research examining middle grades principal leadership almost exclusively focuses on general school leadership models rather than principal leadership behaviors and practices that promote the initiation and maintenance of exemplary middle grades education outlined by middle grades researchers and theorists (Lucas, 2003). Of the limited studies that explored the relationship between middle grades leadership and exemplary middle grades education, a small subset examined formal professional learning experiences that may contribute to effective middle grades principal leadership. Of this subset of studies, none examined how

informal professional learning experiences may be associated with effective middle grades principal leadership. This lack of research underscores the need for this study.

The available literature and research that provide a background for the purpose and research questions of this study fall into four areas. This review will first explore the literature and research outlining exemplary middle grades education to support an understanding of effective middle grades leadership. Second, a focus on the literature related to general school leadership models and how they are used to describe effective middle grades leadership will be presented. Third, the researcher will discuss research that examines the intersection of effective middle grades principal leadership and middle grades education, which middle grades theorists contend is necessary for effective principal leadership in the middle grades. Fourth, this review of literature will outline theory and research connected to the professional learning of middle grades principals. In exploring the literature related to the professional learning of middle grades principals, this review will present research underlying teacher professional development and explore formal and informal professional learning experiences as an adult learning construct and how this construct applies to the professional development of middle grades principal leadership.

Exemplary Middle Grades Education

Middle grades education has its roots in child-centered and progressive education. (Gross, 2002). From this foundation, advocates for middle grades education today suggest three tenets describe exemplary middle grades education—developmental responsiveness, social equity, and academic achievement (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000; National Forum to Accelerate Middle-Grades Reform, 2004c; National Middle School Association, 1995, 2003b). The philosophy of exemplary middle grades education is formed by these three tenets and the guiding vision of middle grades education.

NMSA (National Middle School Association, 1995, 2003b), *Turning Points 2000: Educating Adolescents in the 21st Century* (Jackson & Davis, 2000), and The National Forum to Accelerate Middle-Grades Reform (2004a) outline the vision of exemplary middle grades education as success for every student. NMSA (2003b) defines success as "the healthy growth of young adolescents as lifelong learners, ethical and democratic citizens, and increasingly competent, self-sufficient young people who are optimistic about the future" (p. 1). Thus, the philosophy of exemplary middle grades education encompasses the vision of success for every student, in schools that are pursuing academic excellence and equity through developmentally responsive structures and practices.

NMSA (2003b) broadly conceptualizes this philosophy through characteristics such as collaborative shared leadership and decision making; organizational structures that support meaningful relationships and learning; multifaceted guidance and support; efforts that foster health, wellness, and safety; and relevant, challenging, integrative, and exploratory curriculum and instruction. Similarly, Jackson and Davis (2000) characterize exemplary middle grades schools through eight recommendations. These recommendations are:

- Organizing schools around relationships for learning that create a climate of intellectual development and a caring community of shared educational purpose;
- Democratic governance;
- Safe and healthy environments;
- Staffing schools with teachers expert in young adolescents;
- Involvement of parents and the community;
- Curriculum that is rigorous, relevant, and based on how students learn best;
- Instruction that achieves excellence and equity.

To summarize, middle grades education advocates suggest democratic involvement within the school and with the community, development of relationships and community, a safe and healthy environment, and curriculum and instruction that are rigorous, relevant, challenging, integrative, and exploratory. The following sections explore the structures and practices of middle-level education as the means to achieve the vision and support the philosophy of the middle-level movement.

Structures of Exemplary Middle Grades Education

The structures of exemplary middle grades include grade configuration, interdisciplinary team organization (teaming), flexible/block scheduling, exploratory curriculum, and advisory. Middle grades advocates consider teaming as the "hallmark," "signature component," the most significant contributor to the middle school concept (George & Alexander, 2003; National Middle School Association, 2001, 2003b). Teaming is defined as a group of teachers with content or discipline specialties who share a common group of students and work together to achieve success for every student. Researchers and middle grades advocates highly recommend the teachers on "teams" have daily common planning time (Mertens & Flowers, 2003; National Middle School Association, 2001). Middle grades educators advocate for teaming because it may provide better relationship building; collaboration between students, students and teachers, and teachers; and the development of safe and healthy environments. In addition, teaming allows for integration of curriculum among subject areas, such as English, social studies, mathematics, and science.

As part of the teaming organization, middle grades schools should allow for flexible scheduling of team time, and of students within teams. The building of school schedules should allow this flexibility to better meet the individual needs and interests of student (George &

Alexander, 2003; Jackson & Davis, 2000; National Middle School Association, 1995, 2001). The 50-minute class period should give way to blocks of time for teamed teachers to decide how best to organize students to better serve their cognitive, social, emotional physical, and moral needs.

Young adolescents are characterized as transitioning from childhood to adulthood. To support that process middle grades advocates promote exploratory activities and curriculum to expose students to positive careers, skills, social interactions, special interests, and practices, including participation in democratic processes (Alexander, 1968; Jackson & Davis, 2000; National Middle School Association, 2003b). Current exemplary middle grades education focuses on exploratory learning, including co-curricular activities that develop competence, responsibility, and affiliation with class content and other students and teachers. Exploratory learning also heightens awareness of ethical considerations, healthy leisure and recreational pursuits, as well as career considerations (National Middle School Association, 2001, 2003a). According to NMSA, "[i]f youth pass through early adolescence without broad, exploratory experience, their future lives may be needlessly restricted" (2003a, p. 23). Exploratory learning becomes a structure in exemplary middle grades schools when classes such as art, music, and vocational subjects are scheduled into the school day. In addition, short courses, clubs, and after school activities become structured, scheduled activities that promote student exploration.

Advocates for exemplary middle grades education have long forwarded another structure—advisory—as a critical component of education for young adolescents. Guidance, building student-teacher relationships, providing an adult advocate for each student, and developing a safe environment are goals of the current advisory program advocated by middle grades educators (Galassi, Gulledge, & Cox, 1997; Jackson & Davis, 2000; National Middle School Association, 1995, 2001, 2003a). Although current middle grades advocates place

increasingly less emphasis on a specific type of structure, advisory tends to include a staff member responsible for a small groups of students; regularly scheduled meetings of that group; ongoing individual conferences between the advisor and advisee throughout the school year; and the advisor as the major contact between home and school (National Middle School Association, 2001). Like teaming and exploratory classes and activities, advisory is a structure that achieves its purposes through the practices that are inherent in the structure. The following section deals with these inherent practices.

Practices of Exemplary Middle Grades Education

In the past much of the discussion about exemplary middle grades schools has emphasized the structures of middle grades education. According to recent middle grades advocates, however, emphasis on structure overshadowed the important practices within the structure that lead to fulfillment of the vision and philosophy of the exemplary middle grades education (Beane, 1993; Dickinson, 2001; Gross, 2001; Jackson & Davis, 2000; Valentine et al., 2002). The importance of guidance practices within and beyond advisory; heterogeneous grouping of students; democratic decision-making, including student involvement; and curriculum, instruction, and assessment that is rigorous, relevant, challenging, integrative, and exploratory under gird the vision of success for all students (Jackson & Davis, 2000; National Forum to Accelerate Middle-Grades Reform, 2004c; National Middle School Association, 2003b).

A belief in meeting developmental needs in the cognitive-intellectual, social-emotional, psychological, physical, and moral domains drives the practices in exemplary middle grades education. Guidance includes helping students through formal structures and adult-student interactions that allow young adolescents to be more adept at transitional challenges, such as a

preoccupation with self and an often overreaction to ridicule, embarrassment, and rejections (George & Alexander, 2003; National Middle School Association, 2003a). Middle grades educators promote heterogeneous grouping, "a grouping pattern that does not separate students into groups based on their intelligence, learning achievement, or physical characteristics" (Kellough & Kellough, 2003, p. 412) in order to bridge social-emotional and psychological needs. In addition, middle-level proponents and researchers consider heterogeneous grouping as a practice that enhances academic excellence and equity (Jackson & Davis, 2000; Mills, 1997; Wheelock, 1992). Exemplary middle grades education characterizes tracking, or ability grouping, which places students in groups based on ability or achievement as detrimentally over-representing economically disadvantaged student in lower ability groups. This promotes inequalities in instruction, and hinders emotional and psychosocial development (George & Alexander, 2003; Jackson & Davis, 2000; Mills, 1997; Wheelock, 1992). Guidance and heterogeneous grouping between and within classes are practices that permeate exemplary middle grades education and are characteristic of high performing middle grades schools (National Forum to Accelerate Middle-Grades Reform, 2004d).

Middle grades organizations and advocates also characterize exemplary middle grades schools through practices that promote democratic decision making within the school and between the school and community (Jackson & Davis, 2000; National Forum to Accelerate Middle-Grades Reform, 2004d; National Middle School Association, 2003b). In this model all members of the school community, including students, staff, parents, and the broader community, develop the school vision and goals in a collegial and collaborative fashion. Collaborative and democratic practices promote ownership and elicit actions that lead to a better focus on academic achievement and other student outcomes (Jackson & Davis, 2000; National

Middle School Association, 2003b). Middle grades advocates also view democratic, collaborative practices at the school and classroom level as means to model democratic ideals for young adolescents (Beane, 1993; Jackson & Davis). Finally, middle grades educators advocate that young adolescents have moral needs and desires "to make the world a better place and to make a meaningful contribution to a cause or issue larger than themselves" (National Middle School Association, p. 47), and "are capable of and value direct experience in participatory democracy" (National Middle School Association, p. 47).

Democratic, collaborative participation is fundamental to another set of core practice of exemplary middle grades education—relevant, challenging, integrative, and exploratory curriculum, instruction, and assessment. NMSA defines relevance as opportunities "to explore questions and concerns related to themselves and the world around them" (2003a, p. 14). Challenging curriculum, instruction, and assessment, according to NMSA, engages students in "active learning that stretches their capacities to acquire vital, relevant knowledge and skills and allows them to gradually assume control over their own learning" (p. 14). Integrative practices "ignore subject lines and instead draw from any subject area without regard for boundaries or identification, while focusing on the problem at hand" (Beane, 1993. p. xiv). Additionally, integrative practices "connect learning to students' lives, provide opportunities to reflect, and foster student's applications of their emerging intellectual, social, physical, and technological skills to substantive problems and issues" (National Middle School Association, 2003b, p. 15). Integration de-emphasizes adherence to subject-centered practices based on individual disciplines. Instead, integrated curricular practices employ themes, topics, or problems and integrate all pertinent disciplines in order to address the issue under investigation. As with exploratory classes and activities, NMSA suggests curriculum, instruction, and assessment

should "offer experiences students can use to discover their own talents and preferences, to make contributions to communities, and to become familiar with hobbies and interests they may want to pursue for a lifetime" (p. 15). Specific practices proposed by middle grades advocates to achieve student outcomes within curriculum, instruction, and assessment, include democratic, collaborative decision-making with students; rigorous standards; cooperative learning strategies; authentic assessments such as portfolios; individualization and differentiations; experiential and discovery learning; inquiry; and goal setting (Beane, 1993, 1997; George & Alexander, 2003; Jackson & Davis, 2000; National Middle School Association).

The practices of exemplary middle grades education, as well as the structures promoted by advocates of exemplary middle grades education, support the vision of preparing successful students. Success encompasses academic, social, emotional, moral, and physical outcomes. Achieving the vision through a philosophy that pursues academic excellence, equity through developmentally responsive structures and practices defines exemplary middle grades education.

Research Related to Exemplary Middle Grades Education

Research examining improved student outcomes in schools that adopt these exemplary middle grades concepts tends to be positive (Backes et al., 1999; Felner et al., 1997; Flowers et al., 1999; Jackson et al., 1993; Lee & Smith, 1993; Mertens & Flowers, 2003; Russell, 1997; L. L. Warren & Muth, 1995). Although the research that correlates exemplary middle grades schools and student outcomes is limited (Hough, 2003; Juvonen et al., 2004), there appears to be evidence that implementation of the middle grades concepts increases student success (Backes et al., 1999; Felner et al., 1997; Flowers et al., 1999; Jackson et al., 1993; Lee & Smith, 1993; Mertens & Flowers, 2003; Russell, 1997). In a longitudinal study, Felner et al. (1997) noted that those schools that had higher levels of implementation and longer engagement with the

exemplary middle grades concepts had higher student outcomes than schools with lower implementation levels. They concluded and strongly recommended that fidelity to the "integrated" model of the exemplary middle grades school elicited higher student achievement. Flowers et al. (1999) concluded from their study of schools involved in adopting the exemplary middle grades structure of interdisciplinary teams with common planning time achieved higher academic achievement than non-implementing schools. Additional longitudinal research (Mertens & Flowers, 2003) also suggested that the duration of teams working together also yielded higher student academic achievement i.e., the longer teams worked together the greater likelihood of increased student achievement.

Mertens and Flowers (2003) also examined teaching practices central to exemplary middle grades education, such as authentic instruction and assessment, and noted higher levels of achievement with higher levels of implementation of these teaching practices. Backes et al. (1999) confirmed that positive student academic achievement, overall, occurred in North Dakota schools at higher rates in implementing exemplary middle grades education than non-implementing schools. They added, however, that not all academic subjects were equally influenced by adoption of the exemplary middle grades teaching practices. Specifically, Backes et al. (1999) found that in some skill areas, such as language expression and mathematics computation, students achieved higher outcomes in non-adopting schools. In another comprehensive examination of exemplary middle grades education and student achievement, Lee and Smith (1993) noted that schools demonstrating, less departmentalization, higher levels of subject integration, and more teaming practices, showed higher student achievement, while higher levels of homogeneous grouping did not. In total, these studies provide some evidence of

the positive relationships between the adoption of exemplary middle grades education and student academic achievement.

Lee and Smith (1993), as well as other researchers (Felner et al., 1997; L. L. Warren & Muth, 1995), also addressed positive student outcomes other than academic achievement. Lee and Smith examined academic engagement, a measure of motivation, and the structures and practices of exemplary middle grades education. They concluded that students were more engaged with academic work and less engaged in behaviors that put them at-risk of dropping out in schools implementing exemplary middle grades education. Felner et al. (1997) examined teacher ratings of student behavior, student self-reports of depression (fear and worry), and student self-esteem. The greater the implementation of exemplary middle grades education, the lower levels of teacher reported behavior problems, while students reported lower levels of worry and anxiety and higher levels of self-esteem. Examining only the exemplary middle grades structure and practice of interdisciplinary teams with common planning time, Warren and Muth (1995) surveyed students in 12 schools regarding their sense of self-concept and school climate. Students in schools where teachers were involved in teaming with common planning time reported higher levels of self-concept and more satisfaction with school and the school climate. Though limited, these studies suggested positive relationships did exist between exemplary middle grades education and student outcomes other than academic achievement.

A final important outcome related to exemplary middle grades education corresponds to issues of equity. As one of the three major tenets of the exemplary middle grades education philosophy, it is important to note how implementation of exemplary middle grades education corresponds to outcomes across race, socioeconomic status, and lower achieving students. Issues of equity, as they relate to reducing the achievement gap, tend to be inconclusive. Backes et al.

(1999) disaggregated achievement gain scores of sixth and eighth grade students in schools that had high levels of implementing exemplary middle grades education structures and practices. The results indicated that low achieving students in the sixth grade fell farther behind their peers by the eighth grade in these high implementing schools.

In contrast, Lee and Smith (1993) and Felner et al. (1997) found higher implementation of the exemplary middle grades education "appear to promote social equality in achievement among students" (Felner et al., 1997, p. 179). In addition, Felner et al. discovered that racial and ethnic minorities, students from economically disadvantaged families, and students living in high crime and low employment communities experienced these gains only when implementation of structures and practices of exemplary middle grades education "is quite mature, comprehensive and conducted with a high degree of fidelity" (p. 67). In examining high poverty schools and implementation of interdisciplinary teaming with common planning time and exemplary middle grades instructional practices, Mertens and Flowers (2003) provided three conclusions. First, achievement gaps in high poverty schools can be addressed with higher implementation and fidelity to teaming with common planning time. Second, higher levels of teaching practices associated with exemplary middle grades education may ameliorate achievement discrepancies in high poverty schools. Third, the longer the structures and practices are in place, the higher the benefit in high poverty schools.

Student outcomes in schools that adopt exemplary middle grades education tend to be positive. Theorists, researchers, and advocates for exemplary middle grades education acknowledge further research is needed to confirm the effectiveness of the philosophy, structures and practices of exemplary middle grades education (Dickinson, 2001; Hough, 2003; Jackson & Davis, 2000; Juvonen et al., 2004; National Forum to Accelerate Middle-Grades Reform, 2004c;

National Middle School Association, 2003a). Advocates for exemplary middle grades education continue to contend, however, that the fundamental vision, philosophy, structures, and practice of exemplary middle grades education are sound and encompass effective education for young adolescents (Dickinson, 2001; McEwin et al., 2003).

General School Leadership Models and Middle Grades Leadership

Advocates for middle grades education have argued that leadership in middle grades schools, to be effective, must promote, nurture, and incorporate exemplary middle grades education in schools (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000; National Middle School Association, 1995, 2003b). Research related to the role and behaviors of the middle grades principal in exemplary middle grades schools, however, is limited and has only recently come to the forefront in the middle grades and leadership literature (Anfara & Brown, 2003; Anfara et al., 2000; Brown & Anfara, 2002; Lucas, 2003). As a result, theorists and researchers outlining effective principal leadership at the middle grades tend to rely heavily on the general school leadership research. Theorists' descriptions and research related to the middle grades principalship particularly depend on models of effective school leadership that have evolved from the effective school leadership studies of the 1970s and 1980s (Anfara et al., 2000; Brown & Anfara, 2002; Roney et al., 2004). In this section three models of school leadership from the general school leadership literature are outlined. Middle grades theorists and researchers use these models to describe and study effective middle grades leadership.

Three Models of School Leadership

Models of leadership have dominated recent research about school leadership in the middle grades. Models of school leadership provide a theoretical base in which leadership practices can be compared to effective school practices and student outcomes. These models

have guided practice and research, and have provided a more coherent understanding of effective leadership practices (Hoy & Miskel, 2001; Yukl, 2001). Roney et al. (2004) and Gonzalez, Glasman, and Glasman (2002) have identified seven such models in the general leadership literature. These models are instructional leadership, transformational leadership, managerial leadership, cultural leadership, moral leadership, contingent leadership, and participative leadership. Similarities exist between each model; however the key assumptions and foci vary between them. Three of these models support and are congruent with exemplary middle grades education principles and have been used to study middle grades principal leadership (Anfara et al., 2000; Brown & Anfara, 2002; D. C. Clark & Clark, 2000; Hoy & Hannum, 1997; Roney et al., 2004; Scribner, Cockrell, Cockrell, & Valentine, 1999). These three models are shared leadership, instructional leadership, and transformational leadership. The next section of this review briefly defines each model and then elucidates how each supports exemplary middle grades principal leadership.

Shared/participatory leadership. Shared leadership is a school leadership model that advocates for the participation of teachers, sharing of decisions, distribution of leadership, and democratic practices across all functions and practices of the school. The current literature purports various titles such as shared governance, distributive leadership, teacher empowerment, and democratic leadership, however, as suggested by Roney et al. (2004), the foundation of each variation is participation in the leadership functions of the school.

Since 1989, democratic leadership that empowers teachers, parents, students, and the community have appeared as a central tenet in position papers advocating for middle grades education (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000; Lipsitz, Mizell, Jackson, & Austin, 1997; National Forum to Accelerate Middle-Grades Reform, 2004c,

2004d; National Middle School Association, 1992, 1995, 2001, 2003b). Recent policy statements have become more explicit about the nature and role of effective principals in sharing leadership and providing opportunities for community participation. In supporting the vision of success for every student, Jackson and Davis in the 2000 Carnegie publication, *Turning Points 2000: Educating Adolescents in the 21st Century*, outlined a school governance structure that empowers staff, students, parents, and the larger community. They advocated for a school leadership team composed of all members of the school community; a team that is not a school-based management team, but a school improvement team viewed as a schoolwide system for communication, planning, evaluation, and accountability. In this shared structure, the "[p]rincipal must model cooperative behaviors they seek in others through genuine collaboration with teachers on important matters" (p. 158). They must exhibit integrity and fairness, be open to constructive criticism, foster trust and respect, help community members feel valued, and "identify and cultivate talents among the staff, and stimulate and celebrate examples of teacher leadership" (Jackson & Davis, 2000, p. 159).

The 2003 version of NMSA's position statement, *This We Believe: Successful Schools for Young Adolescents,* elevated the importance of leadership by both principals and other school leaders. NMSA continues to advocate for the development of a shared vision through democratic participation in leadership teams, but added "Courageous, Collaborative Leadership" as an additional foundational element of successful middle grades schools. This document explicitly recognized and outlined the principal's role in the leadership process. Accordingly, this document specified the principals' role in collaborative leadership. "[P]rincipals recognize teachers as leaders and use the expertise of a variety of people to ensure the academic growth and well-being of every student" (p. 11). Effective principals, "working collaboratively with a

leadership team, focuses on building a learning community that involves all teachers and places top priority on the education and healthy development of every student, teacher, and staff member" (p. 10-11). Within the framework of exemplary middle grades education, the shared/participatory leadership model is foundational in guiding the practices of effective middle grades principals.

Instructional leadership. Middle grades leadership is firmly entrenched in the participatory leadership model. Some characteristics of effective middle grades leadership, as advocated by middle grades theorists and proponents, however, also rest in the instructional leadership model. Murphy (1988) defined instructional leadership as principal practices that focused on functions related to the core of schools, teaching and learning. Murphy (1988) and Donmoyer and Wagstaff (1990)offered a broader definition of instructional leadership, which encompassed all leadership functions that contributed to student learning, including managerial behaviors. Hallinger and Murphy (1985) noted instructional leaders (1) defined the mission; (2) managed instructional programs, which included supervising and evaluating instruction and monitoring student progress; and (3) promoted a school climate that enforced academic standards and promoted professional development. All of these practices are cornerstones of middle grades education, although advocates defined leadership more broadly as involving more than the principal (Jackson & Davis, 2000; National Middle School Association, 2003b).

Middle grades theorists promote vision and mission as critical to successful middle grades schools (Jackson & Davis, 2000; National Middle School Association, 2003b). In addition, Jackson and Davis (2000) specifically pointed to the principal as the one "who must see the school maintains its unwavering commitment to the goal of every student fulfilling the Turning Points vision" (p. 158). Exemplary middle grades education also places a high value on

leadership that promotes an instructional program that incorporates elements of exemplary middle grades education. NMSA (2003b) pronounced, “leaders understand the nuances of teaming, student advocacy, and exploration as components of a larger middle level program” (p. 10). Both NMSA (2003b) and Jackson and Davis (2000) emphasized the need for all school leaders to use data to improve instruction and student achievement. Jackson and Davis also outlined the role of the principal in supervision and evaluating instruction. “Through frequent classroom visits and meetings with teams and by creating other opportunities to engage teachers in discussion about student work, a principal can closely monitor teachers’ need for support” (p. 158).

School climate and culture under the instructional leadership model focuses on high instructional standards and professional development to enhance the core of education—teaching and learning. The National Middle School Association, Carnegie Corporation of New York, and the National Forum to Accelerate Middle-Grades Reform (The Forum), each forwards high expectations in student and community performance as a critical component of effective leadership. High expectations translate to improved practice of staff through professional development. NMSA (2003b) stated, “Courageous middle level leaders know that professional development should be integrated into the daily life of the school and directly linked to the school’s goal for student and teacher success and growth” (p. 11). In the foundational paper to The Forum’s goals Lipsitz et al. (1997) listed professional development as the first key to the improvement of the instructional program. Jackson and Davis (2000) outlined the principal’s role in professional development: “An effective principal keeps a school focused on student learning by ensuring that faculty members have the professional development opportunities they need to improve their practice and that they make good use of them” (p. 158).

Using professional development to foster learning cultures for students and adults and school cultures that are collaborative and democratic is fundamental for effective middle grades leadership. NMSA (2003b) embraced a developmentally appropriate culture composed of eight norms as the backbone of the organization's vision for middle grades education. The Carnegie reports focused heavily on school cultures that fostered democratic and collaborative communities for both teachers and students as foundational to exemplary middle grades education (Carnegie Council on Adolescent Development, 1989; Jackson & Davis, 2000).

Transformational leadership. According to Leithwood and Jantzi (1999) transformational leadership "fundamentally aims to foster capacity development and higher levels of personal commitment to organizational goals on the part of the leaders' colleagues. Increased capacity and commitment are assumed to result in extra effort and greater commitment" (p. 453). From their research, Leithwood and Jantzi proposed six dimensional practices of transformational leadership. These six dimensions included: (a) building school vision and goals, (b) providing intellectual stimulation, (c) offering individual support, (d) symbolizing professional practice and values; (e) demonstrating high performance expectations, and (f) developing structures to foster participation in school decisions.

Leadership, educational leadership, and middle grades leadership researchers generally associate transformational leadership with school improvement and restructuring initiatives from within and from outside the school. (Leithwood, 1994; Leithwood & Jantzi, 1999; Lucas & Valentine, 2002). The primary focus of transformational leadership is the "buy in" of the school community to the organization's vision, mission, and goals to spur greater individual commitment to the espoused outcomes of the organization. Researchers, historians, and theorists suggested that exemplary middle grades education is a school improvement and comprehensive

restructuring plan (Carnegie Council on Adolescent Development, 1989; S. N. Clark & Clark, 1993; Cuban, 1992; Erb, 2000; Felner et al., 1997; George & Alexander, 2003; Jackson & Davis, 2000; Lipsitz et al., 1997). As such, much of the rhetoric related to effective middle grades leadership is the promotion of the mission, value, structures, and practices of exemplary middle grades education within the school community. In the latest NMSA position paper (2003), the section *Call to Action,* identified the specific leadership behaviors various positional roles, such as teacher, principal, and parents, can take to enhance commitment to "implementation of [this] position paper's advocacies" (p. 37). Jackson and Davis (2000) also suggested an important transformational leadership practice of principals was to "mobilize a critical mass of school staff members, parents, and others to 'buy in' to the proposed changes" (p. 157) of exemplary middle grades education. The principal and the school leadership team should "help various constituencies within the school develop sufficient knowledge about both the need for a schoolwide improvement process and the nature of the proposed changes so that they can make an informed judgment" (Jackson & Davis, 2000, p.157).

Effective middle grades leaders also exhibit transformational leadership practices other than building vision and support for exemplary middle grades education. Advocates for exemplary grades education recommended that effective leaders provide intellectual stimulation of staff through professional development (Jackson & Davis, 2000; National Middle School Association, 2003b). Efficacious leaders advocate for and demonstrate high expectations to students, staff, and community. Moreover, effective middle grades leadership builds structures and fosters participation in school decision-making. Trust building and communication are also practices that offer individual support to the school community. Jackson and Davis (2000) suggested principals must symbolize professional practices by participating with teachers in

professional development. “A principal who exerts instructional and curricular leadership by learning alongside teachers is better able to create common ground within the school on what good practice looks like and what the schools’ goals for improving student performance should be” (p. 158). In short, according to middle grades theorists, effective middle grades principals exhibit all the transformational leadership practices outlined by Leithwood and Janzi (1999).

Middle Level Principal Leadership Research

Summarizing the previous section, according to middle grades theorists and advocates, effective middle grades principal leadership is an amalgamation of the behaviors and practices outlined in three general leadership models and the vision, philosophy, tenets, and practices of exemplary middle grades education. The limited research examining the middle grades principalship tends to support proponents’ contention about middle grades leadership. Blending general leadership models and exemplary middle grades education supports positive school outcomes. In this section research is presented that connects models of effective leadership, the middle grades principal, and middle grades education.

The NASSP Studies

The National Association of Secondary School Principals (NASSP) commissioned a set of three research projects in 1981 and 1983, 1992 and 1994, and 2002 and 2004, to compare a national sample of middle grades principals with a subset of 50 to 100 principals identified as leading effective middle grades schools (Keefe, Clark, Nickerson, & Valentine, 1983; Keefe, Valentine, Clark, & Irvin, 1994; Valentine, 1981; Valentine et al., 2002; Valentine et al., 2004; Valentine, Clark, Irvine, Keefe, & Melton, 1993). These studies inferred that effective principal leadership occurred in effective schools. Comparing the self-reported survey data from the

national sample to survey and interviews of effective principals provided insights into practices of middle grades principals that may be deemed effective.

The findings from these sets of descriptive research studies indicated effective middle grades principals exhibited practices that shared leadership, provided instructional leadership, and contributed to the transformation of their schools through a vision of exemplary middle grades education. In the early set of studies (1981, 1983) shared leadership was not a prominent characteristic of effective principals. Effective principals were, however, more teacher oriented, with concerns for providing teachers enough time for professional development. In addition, parent and community involvement was more prominent in the effective middle grades schools than in the national sample. From the 1980 to the 2000 studies, shared leadership became a major theme for effective leadership (Petzko, 2004a). In the latest research set, school leadership teams appeared in 94% of the effective schools compared to 88% in the national sample. Leadership teams and team leaders were more likely to be involved in the school improvement process in the effective schools. Petzko (2004a) in a review of the 2000 national study confirmed that effective leadership was collaborative, involved shared decision making, and included participation of teachers in planning for improvement.

Results from the latest NASSP national leadership studies (Valentine et al., 2004) also indicated effective leaders were more likely to value and exhibit practices that focused on instruction. Principals in effective schools placed greater value on the core of education, teaching and learning, in their schools and they were 22% more likely to involve the entire faculty in best practices of exemplary middle grades education. In addition, effective schools were engaged in professional development more often and these principals involved more of the staff in decisions about their own professional development.

The 2000 and 2002 set of NASSP studies (Valentine et al., 2002) also suggested effective middle grades principals were more likely to exemplify transformational leadership practices. Effective middle grades schools were more likely to have formed a school vision and mission and were more likely to have developed comprehensive school improvement plans. Effective principals at these schools facilitated a greater level of implementation of the restructuring elements of exemplary middle grades education, such as higher levels of interdisciplinary teaming and advisory programs. As noted earlier, effective leaders in the 2002 NASSP study promoted professional development and structures for participation of staff in decisions.

Middle School Principal Perceptions of Effective Leadership

While not examining effective principals specifically, Warren (2002), in a study of middle grades principals in Georgia, noted principals attach a high degree of importance to the implementation of exemplary middle grades practices and structures. Warren also found a positive correlation between the level of importance placed on the implementation of exemplary middle level grades practices and their implementation. The higher the perceived importance of these practices and structures the more likely they were to be implemented. This research suggested effective middle grades principals—those that implement middle grades structures and practices—had a greater appreciation for the concepts of exemplary middle grades education.

Anfara et al. (2000), using a mixed design of 17 phenomenological interviews and 125 descriptive surveys, examined how experienced middle grades principals in Pennsylvania, New Jersey, and North Carolina middle grades principals defined effectiveness. The five themes developed from the data to describe effective middle grades principals supported the importance of shared leadership. The first of the five themes suggested middle grades principals have a positive outlook and are satisfied with their jobs, including providing encouragement and

motivation to staff and students. Second, effective principals were teacher oriented, providing teachers with common time to collaborate and plan, and expecting teachers to be student-centered. Third, these principals were supportive of parents and community involvement in their schools. Fourth, tolerance for ambiguity was an effective principal characteristic. Fifth, assembling, developing, and maintaining a staff dedicated to middle grades education was also characteristic of effective middle grades principals. Collaborative practices were prominent and indicative of shared leadership. The last theme, developing staff, connoted the importance of professional development, an integral aspect of instructional and transformational leadership models.

In a reanalysis of the same data set, Brown and Anfara (2003) focused on the transformational leadership skills of middle grades principals. They examined the strategies used by these middle grades principals before implementing reform initiatives and what they did in the process of transformation. The researchers gleaned effective practices from the themes developed through the data. Middle grades principals saw themselves as "accept[ing] their role as catalyst and as vision keeper" (p. 21). Brown and Anfara found effective principals recognized that school transformation required a change in school culture. Effective principals involved others in the process of culture building through democratic practices and shared decision-making. Collaborating, building trust and consensus, training, and communicating were also found to be necessary to change norms and values, and effective principals incorporated these practices into their repertoire. This research supported the practices of the transformational leadership model as important in effective middle level leadership. It also supported shared leadership model practices as congruent with effective leadership through continual discussion, collaboration, democratic practices, and shared decision-making.

Teacher Efficacy and Models of Leadership

In a mixed design using surveys and interviews, Hipp (1997) examined the relationship between principal leadership behaviors and teacher efficacy in 10 Wisconsin middle grades schools. Hipp noted the literature repeatedly associated teachers' feelings of success with student outcomes. The findings from Hipp's investigation indicated 11 principal behaviors that reinforce teacher efficacy. Effective principals: (1) modeled positive collegial behavior; (2) promoted teacher empowerment and decision-making; (3) inspired group purpose; (4) managed student behavior; (5) created a positive climate of success; (6) fostered teamwork and collaboration; (7) encouraged innovations and continual growth; (8) promoted personal and professional support; (9) believed in staff and students; (10) inspired caring and respectful relationship; and (11) recognized teacher efforts and accomplishment. These results firmly supported elements of shared leadership as important in defining effective principal leadership. In addition, modeling behavior, building school vision and goals, inspiring group purpose, and promoting personal and professional support correlated with transformational leadership practices.

Transformation and Culture

In a longitudinal case study of three rural middle schools, Scribner, Cockrell, Cockrell, and Valentine (1999) took a different tack than previously cited researchers. Their purpose was to determine how a school improvement process affected the development of a professional community within the school. The theoretical frame was the examination of culture building in the sample schools. They found that principal practices were the "most important impeding or facilitating factor" (p. 157) in the development of professional community. It was the principal's encouragement to engage in the school improvement process and the promotion of openness and

communication from diverse members of the leadership team and staff in general that were critical factors in the development of a culture of professional community.

Hoy and Hannum (1997) also examined middle grades school culture. In this study of 86 middle grades schools in New Jersey the researchers examined how five factors of the schools' organizational health, as perceived by teachers, correlated to academic student achievement. The five factors were: academic emphasis by teachers, teacher affiliation (teacher commitment to students), collegial leadership (principal behaviors that promoted collegiality), resource support, principal influence with superiors, and institutional integrity (teachers protected from unreasonable parent/community demands). The results indicated teacher affiliation, resource support, academic emphasis, and institutional integrity positively contributed to student achievement regardless of student socio-economics. Surprised by these findings, especially the lack of correlation between principal practices of collegiality and student achievement, Hoy and Hannum speculated that principal's practices had an indirect effect on student achievement. This indirect influence may have masked the effect that collegial principal practices had on student achievement. This was the only study that did not support collegial leadership, the foundation of shared leadership as an effective principal practice. It is, however, the only study yet outlined that included measures of student outcomes.

Sweetland and Hoy (2000) extended the Hoy and Hannum (1997) study by including a mediating factor. They evaluated school climate and principals' influence on teacher empowerment as the mediating factor in student achievement in their study of 86 New Jersey middle grades schools through three survey instruments administered to teachers. These surveys measured teacher perceptions of (1) school climate, (2) their own empowerment, and (3) student achievement. State standardized tests measured student achievement. Unlike previous

conceptualizations of teacher empowerment, however, Sweetland and Hoy focused on teachers' perceived empowerment related to teaching and learning and not involvement in school governance. These researchers found that several climate factors including collegial leadership, climates that stressed academics, principals that provided resources and influence with superiors, were all significantly and positively associated with teacher empowerment. Teacher empowerment was positively correlated to academic achievement. Sweetland and Hoy concluded by outlining a model where school climate, teachers' empowerment in the academic domain, and norms of schoolwide efficacy interact to enhance teacher persistence and commitment, which in turn, affects student achievement. This study supported the concept that effective middle grades leadership indirectly affected student outcomes through practices that enhanced culture.

Lucas and Valentine (2002) also examined the principal's role in climate in a study of 12 middle grades schools in Missouri. The researchers compared principal transformational leadership practices and the transformational practices of leadership teams (composed of teachers and the principal) with school culture. They administered surveys to the teachers on the leadership team regarding the principals' practices. Surveys were also administered to individual faculty members regarding the leadership teams' practices. In addition, the researchers conducted focus group interviews of the leadership teams. The researchers found the greatest impact on school culture came from a combination of principal and team leadership practices, although each group influenced school culture differently. Principals were the primary source for identifying and articulating a vision and providing an appropriate model, while teacher leadership teams had the greatest impact on providing intellectual stimulation for faculty and holding high expectations for the school. The principal impacted school culture most by

heightening teacher collaboration and developing a unity of purpose. Leadership teams enhanced school culture through collaborative leadership and strengthening the principal's role in teacher collaboration and unity of purpose.

A mix of principal and leadership team's practices was also related to professional development and collegial support. Lucas and Valentine (2002) concluded that a combination of principal and team leadership was a better predictor of school culture, suggesting, "Principals should increasingly acknowledge, facilitate, and employ the potentially transformational leadership abilities of teacher leaders" (p. 26) to extend and multiply the impact of the principal on school climate. Together these four studies examining school improvement, transformational practices, and school climate and culture indicated that shared leadership was a key way to improve school climate, which appeared to affect student outcomes.

An Integrated Model of Middle Level Leadership

The final set of middle grades leadership studies are unique in that they proposed and tested an integrative leadership model based on exemplary middle grades tenets. From their interview data of 44 principals in Pennsylvania, New Jersey, and North Carolina, Brown and Anfara (2002) proposed a model of leadership titled Developmentally Responsive Middle Level Leadership (DRMLL). They explained that components of shared and cultural leadership form the basis for the DRMLL, although they placed an emphasis on the teaching and learning strategies inherent in exemplary middle grades education.

The DRMLL is three-dimensional. These dimensions are: "(1) responsiveness to the developmental needs of middle grades students, (2) responsiveness to the developmental needs of faculty who support learning for middle grades students, and (3) responsiveness to the development of the middle school itself as a unique innovative entity" (Brown & Anfara, 2002,

p. 149). Each dimension included structures and practices of exemplary middle grades education, such as building a culture of community and a focus on curriculum, instruction, and assessment. Finally, the authors listed specific practices of middle grades principals for each dimension. In the "responsiveness to students" dimension, principals must understand the intellectual, physical, psychological, social, moral, and ethical characteristics of young adolescents and principals must believe that all students can succeed. Understanding the need to connect educational administration to teaching and learning, and governing democratically and collaboratively are examples of practices presented in the "responsive to faculty" dimension. Practices of effective principals in the "responsive to the needs of the school" dimension include a knowledge and implementation of the components of exemplary middle grades education. In addition, principals must act as catalysts for change. The DRMLL incorporated the three leadership models used as the basis for effective leadership outlined by middle grades advocates—participatory, instructional, and transformational.

Anfara (in press) recently validated an instrument labeled the Middle Level Leadership Questionnaire (MLLQ) to test the DRMLL Model using nine principals and their staff as the sample. Although the researchers found significant positive correlations between the constructs of the model and participants' view of effective leadership and an index score for effective leadership practices resulted, the small sample size raised some cautionary flags. The DRMLL and the MLLQ together may provide a clearer guide and lend support to the theoretical notions of effective middle grades leadership, especially if future research can link the model to improved student outcomes.

Development of Middle Grades Principals' Professional Learning

A limited body of research exists that explicates where and how middle grades principals learn about exemplary middle grades education or effective middle grades principal leadership. The literature related to these professional learning experiences of principals falls generally into two lines of inquiry. The first line examines the professional preparation of principals. This entails how principals were formally prepared for their administrative certification. This certification process usually occurs through coursework in an institution of higher education (Gaskill, 2002). The second line of inquiry examines professional learning experiences of administrators post-certification, commonly termed professional development (Brown et al., 2002; Petzko, 2003).

Categorizing professional learning in this manner is problematic. Professional preparation for administrators may also be associated with professional preparation as a teacher and professional learning experiences that occurred as a teacher. Professional development is sometimes broadly defined as all professional learning experiences, both pre-and post-certification, in which principals may engage (National Staff Development Council, 2000; Wilson & Berne, 1999). This broad definition of professional development is equivalent to all professional learning experiences including formal learning, such as university classes, and informal learning, as exemplified by reflective practice and collegial problem solving. Further confusion occurs in the literature with the term "staff development". In some instance, staff development is used synonymously with post-preparation professional learning or with professional development, while other authors use the term more narrowly to indicate systematic training of staff members sponsored or promoted by schools or districts (Joyce & Showers, 2002; Oliva, 1989; Zepeda, 1999). For the purposes of this study, professional learning experiences

encompass both teacher and administration preparation and professional learning experiences post-certification as a teacher and a principal. Professional preparation is limited to teacher and administrative professional preparation, while professional development will include all professional learning experiences post-teacher certification, excluding administrative preparation. Staff development will be defined as a subset of professional development and includes professional learning experiences sponsored or promoted by a school or school district.

Several research studies indicated that the vast majority of middle grades principals' professional preparation, specifically integrating exemplary middle grades education and effective middle grades principal leadership, is exiguous (Brown et al., 2002; Gaskill, 2002; Lucas, 2003; Petzko, 2003; Valentine et al., 2002). Valentine et al. (2002), in a national descriptive study of middle grades principals, surveyed all principals in the United States and reported that few principals were specifically trained for the middle grades. Only 4% of middle grades principals had a middle grade administrative certificate; 46% had a K-12 administrative certificate. Virtually no middle grades principals had an undergraduate degree in middle grades education, with Valentine et al. reported 0% of principals with an undergraduate degree in middle grades education. Only 4% of middle grades principals had a graduate degree in middle grades education. A limited number of practicing middle grades principals reported taking graduate courses specifically related to middle grades education: 37% reported no courses taken and 34% reported one to two graduate courses taken. It is unclear from the results if these graduate courses were taken in preparation for teaching, the principalship, or as a professional development activity.

Other researchers describing middle grades principals' preparation supported the results of the Valentine et al. (2002) study. In their mixed design study, Brown and Anfara (2002)

indicated that of the 98 principals surveyed, 59% reported no formal training in their preparation to be middle grades principals. Lucas (2003), in describing the preparation of 89 middle grades principals in his study of principal self-efficacy, reported the average number of undergraduate courses taken by these principals directly related to middle grades education was 1.7. The same principals reported a mean of 1.2 graduate courses. Again, it is unclear if the graduate courses were taken in professional preparation or as a professional development activity.

As limited as the preparation for middle grades principals appears, there seems to be a difference in preparation of effective middle grades principals. Valentine et al. (2004), in their follow-up to one of the national surveys of middle grades principals, surveyed the principals of 98 middle grades schools identified by state and local leaders and educators as highly successful. The results of this study indicated that principals of highly successful schools were more likely to have a middle grades administrative certificate, 6% compared to the national average of 4%. Principals of highly successful schools were more likely to have completed graduate courses specific to middle grades education, 64% having taken 3 or more courses compared to the national sample of 29%. It is unclear from the results of the Valentine et al. report if these graduate classes were taken as part of a preparation program or as professional development.

Although a middle school administrative certificate may be of value in effective middle grades principal leadership, the probability that the number of certified middle grades principals will dramatically increase in the near future is small (Gaskill, 2002). In a study examining middle grades administrative certification and endorsement requirements in all 50 states and the District of Columbia, Gaskill (2002) reported few states required any middle grades focus. No state required a middle grades certification for middle grades administrators. Only five states required a specific middle grades credential as part of certification.

These descriptive studies outlining the limitation of middle grades principals' professional preparation suggest middle grades principals rely on some form of professional development to understand how to guide exemplary middle grades schools. A familiarity with the literature and research related to teacher professional development provides a backdrop for understanding the professional learning experience that may guide the working lives of middle grades principals. The following sections present the pertinent research and literature related to effective teacher professional development.

Effective Teacher Professional Development

Systematic research examining effective professional development is relatively recent and almost exclusively related to teacher professional development. Although the importance of teacher professional development appeared in the post-depression era educational literature, it was not until the late 1980s and early 1990s that the need for teacher development again came to the forefront of the educational literature (Clarke & Hollingsworth, 2002; Guskey, 2003; Sparks & Loucks-Horsley, 1990; Sprinthall, Reiman, & Thies-Sprinthall, 1996). It is even more recent, the mid-1990s, that the professional development of principals has gained momentum in the professional literature (National Staff Development Council, 2000).

Researchers cite increased emphasis on student achievement, school improvement, and school reform as catalysts for an increased interest in teacher and principal professional development (Grogan & Andrews, 2002; Guskey, 2003; Little, 1993; Loucks-Horsley & Matsumoto, 1999; National Staff Development Council, 2000; Wilson & Berne, 1999). Researchers, reformers, and policy makers' viewed professional development as a key to elicit change in the practice of both teachers and administrators that would support school improvement and reform initiatives aimed at enhancing student achievement (Borko, 2004;

Fishman, Marx, Best, & Tal, 2003; Grogan & Andrews, 2002; Little, 1993; National Staff Development Council, 2000). There is evidence that professional development does, in fact, change teacher practice. There is a growing body of evidence that supports the positive, yet indirect, association between teacher professional development and enhanced student outcomes (Garet, Porter, Desimone, Birman, & Yoon, 2001; Wenglinsky, 2002). The evidence that professional development changes principal practices is more tenuous, resting mainly in the evidence base of teacher professional development. The following sections outline the research related to professional development. The first section examines seminal research that supports the correlations between professional development and positive teacher and student outcomes. Sections two and three delineate how the research has resulted in lists of characteristics of effective professional development and effective professional development activities. The final section provides a theoretical overview of formal and informal learning that provides a framework for further examination of effective professional development.

Seminal professional development research related to teacher and student outcomes. The early studies of McKibbons and Joyce (1980), Joyce and McKibbons (1982) and Joyce and Showers (1988) began to tie professional development with positive educational outcomes. These studies examined the relationship between teacher psychological states and teacher engagement in professional development. In the 1980 McKibbons and Joyce case study of a California school, teachers were offered extensive and regular professional development. The researchers counted the number of times teachers participated in the professional development and observed how often the skills or strategies taught in the professional development were implemented in the classroom. In addition, they interviewed teachers to ascertain teachers' psychological state as measured by Maslow's framework. McKibbons and Joyce concluded that

the higher the teacher psychological state (the more self-actualized) the more likely the teacher was to engage in professional development activities. Moreover, they found that the greater number of times a teacher engaged in professional development activities the more likely the teacher would implement the skills or strategies presented through professional development activity.

In reports of follow-up studies to the original McKibbons and Joyce study (1980), Joyce and McKibbons (1982), and Joyce and Showers (2002) collected over 300 interviews and 3000 questionnaires from California teachers. They concluded that there was a distinct correlation between teachers' engagement in professional development and self-reported implementation of learned skills and strategies. McKibbons and Joyce (1980) and Joyce and McKibbins (1982) suggested there were variations in developmental states of teachers, and these developmental states resulted in differences in the engagement level of teachers in professional development. They classified teachers into five levels of engagement, omnivore, active consumer, passive consumer, withdrawn, and resistant, each succeeding level was less likely to engage in professional development. Joyce and Showers (2002) further indicated various environmental factors and characteristics of professional development that were more likely to engage teachers in professional development. Collegial environments were important in teacher engagement, while feedback and practice were important factors in implementation of learned skills.

Relying on a synthesis of research (Showers, Joyce, & Bennett, 1987) and their own study of the Second Chance/Read to Succeed Program in California, Joyce and Showers (2002) also reported that various types of professional development are more likely to result in transfer of training from the professional development activities to implementation in the classroom. They indicated that when professional development relied on theory, such as lectures,

discussions, and reading, about 10% of the participants had heightened knowledge, 5% increased skill levels in simulations, and none transferred the training to what Joyce and Showers called executive implementation. Executive implementation was in-depth implementation of the training, i.e., a teaching skill or practice, to the classroom across various contexts. If demonstration was added to the training the percentage of teachers indicating increased knowledge levels rose to 30%, increased skill levels to 20%, and 0% of participants demonstrated executive transfer. Incorporating practice into the training increased knowledge and skill levels to 60%, while 5% of the participants demonstrated executive transfer. Not until peer coaching was added to staff development did significant percentages of teachers demonstrate executive transfer. Joyce and Showers defined coaching as "collaborative work of teachers to solve the problems or questions that arise during implementation" (p. 74). When these collaborative practices were added to professional development training, 95% of the teachers demonstrated knowledge, skill, and executive transfer.

Research related to the correlation between teacher engagement and implementation of skills and practices over the 1980s and early 1990s was most frequently measured by small-scale self-reported evaluation studies of professional development programs (Garet et al., 2001; Loucks-Horsley & Matsumoto, 1999). A study completed by the National Commission on Teaching and America's Future (NCTAF) (1996) and subsequent reports related to the study (Darling-Hammond, 1998, 2000) attempted to synthesize and evaluate the research on teacher learning and development. The reports are frequently cited and used to underscore elements of professional development. The most critical findings from the reports indicated that "what teachers know and can do is one of the most important influences on what students learn" (Darling-Hammond, 1998, p. 6). Specifically related to professional development, the NCTAF

report found teachers indicated much more powerful learning in activities that were curriculum based, sustained over time, linked to concrete problems of practice, and promoted collegial interaction. The activities that provided such learning included teacher networks, teaching academies, professional development schools, teaching teams, action research projects, and study groups in the school. These activities tended to be informal professional learning experiences. Teachers reported traditional formal learning activities, such as workshops and university classes, were less valuable because they did not allow teacher input, value teachers' experience, and did not build on teachers' ongoing work with others.

Professional development research continues to be criticized for measuring effectiveness through teacher knowledge, practice, self-reports of effectiveness, and small case study designs (Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet et al., 2001; Porter, Garet, Desimone, Yoon, & Birman, 2000). Two recent studies have attempted to address some of these criticisms. Both Winglinsky (2002) and Garet et al. (2001) used large data bases to systematically examine professional development. Wenglinsky, using the 1996 National Assessment of Educational Progress (NAEP) data for mathematics, examined the link not only between teacher classroom practice and student achievement, but also professional development and student achievement. Wenglisky measured 21 classroom practices and 9 content areas for professional development, such as classroom management, cooperative learning, portfolio assessment, and students with special needs. In addition, the total amount of professional development opportunities a teacher engaged in was measured. Although teachers self-reported both their classroom practices and professional development, this study was unique in its correlation between the achievement of 7,146 eighth grade student who took the mathematics assessments and teachers' professional development. Wenglisky concluded that while teacher classroom practices had the greatest effect

size on student achievement, .56, teacher professional development topics had a .33 effect size on student mathematics achievement. In addition, professional development seemed to significantly influence teachers' classroom practices. As examples, the more professional development, regardless of the topic, the more likely teachers were to incorporate hands-on teaching practices, and the more professional development related to special populations the more likely teachers used higher order thinking skills.

Garet et al. (2001) using a representative sample of districts and state agencies for higher education that participated in the federally funded Eisenhower Professional Development Program for math and science in the second half of 1997, surveyed 1,027 teachers who participated in the professional development activities provided by these districts and agencies. Using the literature as a base, Garet et al. developed a model of high quality professional development. The model was used as the foundation for the survey. This model included structural and core features. Structural features were composed of three elements—type of activity, duration, and collective participation. Type of activity could be traditional in nature, such as workshops or a reform type activity, which were part of the teachers' workday, such as study groups, coaching, or mentoring. Duration included the total number of contact hours and the span of the activity. Collective participation was defined as professional development that was designed for groups of teachers in the same school, department, or grade level. Core features of high quality professional development included—focusing on content, promoting active learning, and fostering coherence. Content knowledge included subject matter and pedagogical content. Promoting active learning included observing and being observed, planning classroom participation, reviewing student work, and presenting, leading, and writing about their learning. Fostering coherence was described as a connection of goals with other activities, program

alignment with state and district standards and assessments, and communication with other participants over time.

The outcome measures for Garet et al. (2001) were self-reported changes in teacher knowledge and classroom practices. Garet et al. concluded that certain features of high quality professional development had direct impact on teacher knowledge and classroom practice, while some features had positive outcomes through interaction with other features. Professional development that focused on subject matter (content), provided active learning, and was coherent, i.e., aligned with system and school goals and communication of those goals had a direct and significant impact on teacher knowledge and teacher practice. In addition, collective participation of groups of teachers had a significant impact on coherence and active learning and thus had an important but indirect effect on outcomes. Finally, whether traditional or reform activities had an impact on outcomes depended on the other design features that they incorporated. Reform activities tended to have a greater impact because they included other design features, such as longer duration, active learning, and coherence.

Characteristics of effective professional development. As the research related to professional development and its association with teacher and student outcomes has grown, organizations, researchers, and theorists have constructed characteristics of effective professional development. The National Staff Development Council (NSDC) established one of the most widely disseminated lists of characteristics of effective professional development. Originally presented in 1997, the revised list, known as the *NSDC Standards for Staff Development* (2001), considered improved learning for all students as the criteria for effectiveness. The standards are divided into three areas, the context in which the professional development occurred, the process by which the professional development was presented or learned, and the content of the

professional development. Although the standards were presented as staff development, i.e., more formal school or district organized professional development, they provided a framework for all professional learning. Effective contextual factors of professional development included collaboration, skillful leadership by those guiding continuous instructional leadership, and adequate resources for professional learning. The process standards suggested professional development should be job embedded and inquiry based. These processes should also focus on job related data, issues, goals, and research-based information about human learning and change, as well as knowledge and skill acquisition of collaboration practices. In addition, appropriate teaching and learning strategies should be applied to meet the job embedded goals. The content of professional development should include research-based information about equity, quality teaching, and family involvement.

Similarities to the NSDC standards appeared in other lists of characteristics of effective professional development. Loucks-Horsley and Matsumoto (1999), in a review of effective professional development for mathematics and science teachers, categorized what they termed quality professional development into four factors, content, process, strategies and structures, and context. The content of quality professional development emphasized increased teacher knowledge of subject matter, learners and learning, and teaching methods. The process elements of quality professional development took into account the environment of learning, assuring that professional development valued teachers' experience and tied new learning to that experience. Other environmental factors included opportunities to develop ways of transferring teacher knowledge to practice, feedback mechanisms, and building time into teachers' workday to work together. Once these environmental factors were addressed, the processes of quality professional development created a sufficiently high level of cognitive dissonance to provide teachers with

the desire to change fundamental practices and beliefs. Support should be given to teachers in this process, and the process should be job embedded, focusing on teachers' own students and context.

Butler (1992), in reviewing effective professional development, developed an adult learning theory perspective in forming her list of effective professional development characteristics. Descriptors of adult learning theory were important factors in providing effective professional development according to Butler. Some of these descriptors including adults' sense of self were highly determined by personal and work experiences, and adults learned best if their experiences were acknowledged, validated, and new learning was connected to their prior experiences. Learning was profoundly affected by variations in their adult development, which included personal (cognitive, moral, ego, or conceptual) differences, chronological age, and years and experiences in the profession. Adults tended to learn best when new learning applied and addressed situational changes in the context of their lives. In addition, adults tended to prefer self-direction and control in their learning and also tended to be problem-centered rather than subject-centered learners. Although situated in more of a training model of professional development, Butler combined both the professional development research and adult learning theory in support of her list of characteristics of effective professional development. Butler asserted that the structure or context of effective professional development was site based, spaced over time, occurred at convenient times and places, guided by people credible to the learner, and involved participants in the planning and development of their learning. The content of high quality professional development was related to job or program tasks, tied to specific goals, objectives, and student outcomes, and is on going. The process of effective professional development included active participation, self-direction in learning, and collegial interactions.

A number of other researchers, research agencies, teacher associations and organizations have presented lists of characteristics of effective professional development (Guskey, 2003). Some of these lists have been based on a broad review of the literature, some on a synthesis of quantitative empirical data; however, others were constructed as policy statements based on quantitative and qualitative data, and a very few resulted from empirical data focused on student outcomes (Burke, 2000; Desimone et al., 2002; Fishman et al., 2003; Guskey, 2003; Kennedy, 1999; Little, 1993; Wenglinsky, 2002; Wilson & Berne, 1999). Guskey (2003) examined 13 of the most widely cited lists of effective professional development in a comparative study using content analysis procedures. The purpose of the analysis was to determine if specific characteristics appeared in all lists and how well these characteristics corresponded to the NSDC Standards. The lists were published between 1995 and 2002. Guskey identified 21 characteristics and found no characteristic appeared in all lists. The most common characteristic among the lists, appearing on 11 of the 13 lists, was the enhancement of content and pedagogical knowledge. Giving teachers time and adequate resources was the second most common characteristic appearing on 10 of the 13 lists. In 9 of the 13 lists, promotion of teacher collaboration and collegiality was included. Other characteristics appearing on most lists included procedures for evaluation, alignment with other reform initiatives, instructors that models high quality instruction, and school or site based. Guskey did not include job embedded or work related professional development as a characteristic, but included this concept within the characteristics of collaboration and collegiality.

Types of professional learning. Various types of professional development are embedded in the lists of characteristics of effective professional development. Other types of professional learning have emerged from these lists. Fishman et al. (2003), in their model of professional

development, list a host of what they termed "sites" of professional learning. Included in these "sites" were traditional types of professional learning, such as after school in-service, summer workshops, and graduate courses. Other types of professional learning included peer coaching, self-directed online professional development activities, reading professional journals, and use of reflection in action research projects. Loucks-Horsely and Matsumoto (1999) included types of professional development under mechanisms in their model of professional development. The most common types of professional learning were workshops and institutes while other types included technology and peer coaching.

Burke (2000) categorized these types of professional learning into four areas, inactive activities, formal programs, investigative strategies, and reflective practices. Inactive activities included in-service days, after-school workshops, conferences, school visits, and departmental/grade level meetings. Formal programs were composed of degree programs, certification renewal activities, summer institutes, mentoring, and obtaining certifications such as the National Board for Professional Teaching Standards (NBPTS) certification. Investigative strategies consisted of study groups, book groups, reading educational journals and books, and chat rooms. Reflective practices included reflective journals, professional portfolios, peer coaching, and log entrees.

Whether the activities of professional development are called sites, mechanisms, or types, it is through these activities that teachers gain the skills, attitudes, and implementation tools necessary to increase student learning. Within the NSDC Standards, these activities were viewed as the process by which the content was delivered. The effectiveness of each of these strategies, according to the NSDC Standards, was dependent on the goals and the context surrounding the learning. In addition, lists of effective characteristics of professional development, as noted

earlier, suggested that some activities tended to be more effective than others. Activities that were collegial, goal oriented, job embedded, valued teacher experience, promoted reflection, allowed for teacher input, and considered the context of the learning appeared to be more effective in enhancing teacher content and pedagogical knowledge changes in teacher practices and, as a result, student learning. Activities that embraced these characteristics tended to be less traditional than formal staff development that has dominated the professional development of teachers. An adult learning theory that examines the effectiveness of formal versus informal learning in the workplace may provide a framework to examine both teacher and principal professional learning.

Professional development and formal and informal professional learning experiences. Marsick and Watkins (1990, 2001), based upon concepts outlined by Coombs and Ahmed (1974), have proposed a theory in which to examine adult learning in the work place. Types and characteristics of learning within this theory fell into two broad categories. Formal learning, according to Marsick and Watkins (1990) was "typically institutionally sponsored, classroom-based, and highly structured" (p.12). Traditional training type activities form the basis for formal learning. Informal learning in contrast "may occur in institutions but is typically not classroom based or highly structured, and control of learning rests primarily with the learner" (p. 12). Informal learning also tended to be experiential, embedded in work, part of the daily routine, included process of action and reflection, and was highly contingent on the context of the work setting (Marsick & Volpe, 1999). Although often planned, informal learning could also be serendipitous.

Marsick and Watkins (1990, 2001) suggested that formal learning, while viewed by organizations as the primary means of training and teaching employees, may be secondary to

informal learning in how workers learn and manage roles and tasks. In reviewing the research, Marsick and Watkins indicated that 83% of learning in the workplace, in terms of time and money, occurred through informal learning. Based on other concepts of adult learning, such as the value of adult experience, the importance of self-direction for adult learners, and the need for interaction between experience and reflection in the transformation of adult beliefs and actions, researchers suggested adults may be better able to transfer new learning when it was embedded in their work and experience. Although there was a link between formal and informal learning, the characteristics of informal learning suggested it may be more fertile ground for transformational learning for several reasons: informal learning had the component of self-direction, was embedded in the work world, and required reflection on real problems and personal experience.

Several studies examining informal learning in the workplace suggested informal learning was a determinant in worker productivity and organizational effectiveness. In a cross case analysis of managers in two challenging, changing work environments, Duchent (1999) found the managers who actively sought informal learning activities and understood the context of the workplace were more successful in meeting challenges and changes. In a case study of a family printing business undergoing major restructuring as a result of a financial down turn, Ziegler (1999) concluded informal learning across the company allowed owners and employees to "translate new insights and thinking into changed behaviors" (p. 58). By using a collaborative, inquiry approach to restructuring among owners and individual employees, the company was able to survive a major organizational change. Reviewing over 150 studies examining informal learning, Callahan (1999) noted that informal learning activities are prevalent learning processes in a number of contexts, including schools.

Although a framework that has provided substantial information about professional learning in the work place, the formal/informal frame has yet to be examined in relationship to professional learning of teachers or administrators. The NSDC Standards (2001), Loucks-Horsley and Matsumoto (1999), Butler (1992), and Guskey (2003) all suggested that effective professional development activities had the characteristics of informal learning, such as job embeddedness, collegiality, inquiry, learning over time, and the use of content relevant to the teacher or administrator. The enlistment of the formal and informal frame in research related to professional development activities may provide further insight into the learning of educators, and as a result, student learning.

The proposal of expanding professional development research to include adult learning theories highlights the complexity of effective professional development for educators. As summarized by Guskey (2003) and echoed by numerous other researchers (Fishman et al., 2003; Loucks-Horsley & Matsumoto, 1999),

> [t]he characteristics that influence the effectiveness of professional development are clearly multiple and highly complex. For this reason it may be unreasonable to assume that a single list of effective professional development characteristics will ever emerge, regardless of the quality of professional development research. (pp. 16-17)

Other researchers suggested, however, that empirical research related to professional development was in its infancy and continuing both the volume and quality of professional development research would prove fruitful in narrowing elements of teacher professional development that supported school improvement and enhanced student achievement (Desimone et al., 2002; Wilson & Berne, 1999).

Middle Grades Principal Professional Development

It is important to understand teacher professional development because it forges the foundation of principal professional development. Much of the literature and research support for principal and middle grades principal professional development has been extrapolated from the teacher professional development literature. Certainly the content of principal professional development is markedly different than teacher professional development. According to the NSDC in their position paper on principal professional development *Learning to Lead, Leading to Learn: Improving School Quality through Principal Professional Development* (2000), both the content and context of principals' professional development expanded beyond that of teachers. The content and context of principal professional development encompassed the entire school community—student learning, teacher standards, staff development, and effective leadership. NSDC defined effective leadership based on the Interstate School Leaders Licensure Consortium: Standards for School Leaders (ISLLIC) (Council of Chief State School Officers, 1996). Proponents, researchers, and middle grades organizations, in contrast to general leadership literature, advocated for the content of professional development for middle grades to be based on effective middle grades leadership as outlined earlier in this chapter (Brown & Anfara, 2002; Gross, 2003; Lucas, 2003; Williamson & Galletti, 2003). Unfortunately, the paucity of middle grades principal professional development research provides little evidence that professional development leads to changes in middle grades principals' knowledge or practice. What follows is a summary of the exigent research related to middle grades principal professional development and a discussion of possible implications.

Middle grades principal professional development research. Five studies comprise the research examining middle grades principal professional development and both exemplary

middle grades practices and effective middle grades principal professional leadership. Three studies examined middle grades principal professional development as a subset of larger studies evaluating comprehensive middle grades reform programs. Two studies specifically targeted middle grades principals' professional development and learning as the primary focus of the research.

As part of an evaluation of the comprehensive school reform (CSR) program, Education Matters, Neufeld (1997) interviewed 23 urban middle grades principals about the professional development provided to them as part of the reform initiative. The researchers asked participants what they wanted to know as middle grades principals in light of the current emphasis on restructuring and reform. The principals were also asked to comment on the characteristics and activities of the formal professional development program in which they participated as part of the reform initiative. The activities of the program included extensive reflection in cohorts of principals from five different districts. The activities occurred over time and required principals to test skills learned in their schools. Professional development was based on what principals identified as needs. Principals received coaching where trainers shadowed principals, logged the activities of the principals, and later conducted feedback sessions with the principals. Neufeld concluded principals' sense of self-efficacy was enhanced through the professional development. Principals valued opportunities to work in cohorts over time, the multiple strategies used by trainers, their input into the content of their learning, the up-close coaching, and instruction on how to become a reflective practitioner.

In summarizing lessons learned from the professional development component for leaders in two other CSR projects in middle schools in Kentucky and Texas, Williamson and Galletti (2003) emphasized collegiality as a component of high quality professional development. They

suggested collegial content and delivery systems were effective in developing (1) relationships that led to extensive talk about teaching and learning, (2) appreciation of reflective practice, (3) development of new approaches to reform, and (4) an increased ability to collect and analyze data. Cohorts of school leaders, including administrators and teachers, engaged in institutes that helped participants use data and understand instructional improvement strategies. The CSR projects structured collaborative dialogue with external providers of the reform project about reform implementation and instructional strategies. The project also provided cross-district dialogue with other administrators. The three leadership models advocated by middle grades proponents were included in this project. Transformational and instructional leadership components formed the content. Elements of shared leadership provided the process to develop cultures that improved staff capacity. Using the theoretical underpinnings of effective middle level leadership, the researchers found support for both effective middle level leadership and professional development that supports it.

Similarly, Gopalan and Weinbaum (2003) studied the professional development elements of a CSR project in a five-year longitudinal study of 15 Michigan middle schools. A shared leadership model supported the content and delivery system of the professional development activities in this project. This model consisted of leadership teams from each school that met regularly at institutes to improve teaching strategies and effective leadership skills to enhance school improvement efforts. The institutes relied on reflection and training in the use of school data to improve leadership performance. Participants in this professional development project reported the collaborative nature of the institutes and support from colleagues led to better engagement of the staff in the school improvement process. Principals were better able to focus

the staff on the school's goals of teaching and learning as outlined through interviews and observations. Principals also indicated they learned new teaching and learning strategies.

In two sets of studies that examined the professional needs of principals, Brown and Anfara (2002) and Ricciardi (1999) provided evidence to support both the content and delivery systems of professional development theoretically espoused by middle level advocates. In a large study using a less dominant mixed design, Brown and Anfara surveyed 98 and interviewed 17 middle grades principals in Pennsylvania, New Jersey, and North Carolina. These researchers asked principals what effective professional development should include and where and how it should be delivered to middle level administrators. Principals indicated four areas of content they believed were needed but often neglected in their professional development. These areas were: (1) creating respectful, collaborative, and collegial school structures; (2) understanding, implementing, and assessing newly proposed approaches to teaching and learning; (3) remaining up-to-date with legal, financial, and technology issues, and (4) understanding the nature of the young adolescent and the meaning of the phrase developmentally appropriate. Principals reported there was value in conferences sponsored by professional organizations, but believed it necessary to include more local institutes, activities, and time to talk with colleagues about what worked best in their schools. Principals learned best when programs involved them in identifying their needs and planning for their own professional development. Administrators also indicated they needed time to reflect with those in the school and to share with other principals. Moreover, principals expressed that professional development should be long term and supported with time and money. Principals also believed professional development should be taught by competent instructors who valued their experiences as educators and principals. Brown and Anfara concluded that their research was consistent with the general professional development literature

but added the important contextual component for middle level principals—the need to know about exemplary middle grades education.

Also examining the professional needs of middle grades principals, Ricciardi (1999) used a survey instrument administered to 43 experienced middle grades principals. This instrument contained three parts. The first part compared participants' responses to effective practices as outlined by the National Policy Board for Educational Administrators (NPBEA). Results indicated principals viewed themselves least capable in areas of curriculum design, public and media relationships, instruction and the learning environment, and motivating others. The second part of the instrument asked principals to list the professional development activities they had participated in over the last two years and how valuable these activities were to them. Principals indicated 77% of the activities they participated in were valuable. Principals in part three of the instrument were asked about the content of professional development activities. Content that heightened understanding of instructional and learning environments, leadership, legal, and regulatory applications, and curriculum were most engaging and helpful to principals. The fourth part of the questionnaire asked principals to describe how professional development could be more relevant and useful to them. In this open ended portion of the survey, principals indicated they needed more content related specifically to the exemplary middle grades education, i.e., "more training about effective middle school practices." (Ricciardi, 1997, p. 13). Principals also indicated a need to have professional development more individualized and context based. The delivery methods most desired by principals were those that were long term, flexible, collegial, and based on adult learning theory that valued participants' experience and less based on lecture. Although this study was unique in that a measure of principal effectiveness was included, the

NPBEA standards, it fell short in providing any link between professional development and effective leadership for middle grades principals.

Implications for research on middle grades principal professional development research. Several conclusions can be drawn from the middle grades principal professional development research. A glaring conclusion is the lack of any attempts to provide a connection between professional development that enhances principal knowledge and changes in practices, which, according to the teacher and principal professional development literature, is the goal of professional development (Fishman et al., 2003; National Staff Development Council, 2000). Instead, the research is exclusively focused on identifying characteristics of effective professional development and the types of professional development that principals valued. None of the studies attempted to link engagement in professional development to changes in practice, such as the McKibbins and Joyce (1980) and Joyce and McKibbons (1982) studies or to correlate middle grades principal professional development to student outcomes as with the Wenglinsky (2002) and Garet et al. (2001) studies. Certainly, connecting principal professional development to student outcomes is more difficult than even that of teacher professional development because of additional mediating factors, such as schoolwide legal issues, district, state, and federal policies and mandates, and responsibilities for personnel. However, as with the early teacher professional development research, correlations need to be established between professional development and variations in middle grades principal practices. The literature related to middle grades principal professional development cannot continue to rely exclusively on the teacher professional development research to make the claim that middle grades principal professional development leads to changes in principal practices, which in turn, lead to school improvement or implementation of an exemplary middle grades educational program.

Another conclusion to be drawn from the middle grades principal professional development research is that it mirrors the results of the teacher professional development research with respect to characteristics of effective professional development and the types of professional development. Middle grades principals value and consider effective professional development to be:

- collegial
- job embedded
- goal oriented and problem centered
- occurring over time
- valuing principal experience,
- allowing for principal input, and
- considering how adults learn best as characteristics of effective professional development.

Activities that included these characteristics tended to be more aligned with informal learning, such as networking, study groups, book groups, journal writing, mentoring, and coaching. The research was consistent in suggesting traditional formal professional development, such as university classes, "drive-by" inservice, seminars, and conferences were of less or little value to principals. There is no research, such as that which exists in other work related settings, that attempts to examine whether formal or informal professional development leads to variations in middle grades principals' practices.

Finally, the middle grades principal professional development research does not consider the knowledge and specific nature of effective middle grades leadership in the evaluation of professional development. In the Ricciardi (1999) study, principals noted a need to know more

specifically about middle grades practices. The other studies asked questions about effective leadership in general; however, none of these studies focused on middle grades principal professional development specifically related to effective middle grades leadership. Instead, as in the Ricciardi study, the standard of comparison was general leadership practices. While all four studies (Anfara et al., 2000; Gopalan & Weinbaum, 2003; Ricciardi, 1997, 1999; Williamson & Galletti, 2003) used middle grades principals as the subjects of study, none used a middle grades leadership model to evaluate results. These conclusions point to the need for further research examining formal and informal professional development activities specifically related to middle grades leadership and if engagement in these activities relates to variations in principal practice.

Chapter Summary

Theorists and advocates for middle level education claim effective middle level principal leadership is an amalgamation of the effective leadership practices outlined by the general leadership literature and principal behaviors that support and promote exemplary middle grades education. A review of the literature indicated that, although sparse, research seemed to support advocates' and theorists' contention that the tenets, structures, and practices of exemplary middle grades education enhanced student outcomes for young adolescents. There was also limited research that suggested leadership that supports exemplary middle grades education and incorporated practices of shared, instructional, transformational, and cultural leadership models from the general school leadership literature may be tentatively labeled effective middle level leadership. Anfara and colleagues (Anfara et al., 2000; Brown & Anfara, 2002; Roney et al., 2004) presented a leadership model, Developmentally Responsive Middle Level Leadership, that amalgamates principal behaviors that supported exemplary middle grades education and the three general leadership models.

The literature also pointed to a deficit in the preparation of middle grades principals grounded specifically in exemplary middle grades education and leadership. This deficit suggested that middle grades principals learned effective middle grades leadership practices from professional development experiences, although there was very limited research that examined the professional development of middle grades principals. The research that existed suggested middle grades principals' perceptions of the characteristics and types of professional development that were valuable and effective to them mirror those found in the general teacher professional development literature. It appeared that informal types of professional development activities that were job embedded, inquiry base and reflective, collegial, occurred over time, valued participants' experiences, and involved principal input were valued most and were seen as most effective.

Several gaps in the research related to middle grades professional development surfaced as a result of this review. No research examined middle grades principal perceptions of the effectiveness of formal versus informal professional learning experiences directly. Second, with the exception of one study (Ricciardi, 1999), all of the middle grades principal professional development research was based on principal self-report of effectiveness with no standard of comparison. Effective professional development was noted as those experiences valued by the middle grades principal. In the one study comparing principal professional development to a framework of effective practice (Ricciardi, 1999), the framework was situated exclusively in the general leadership literature. No studies compared principal professional development specifically to effective middle grade leadership practices. In addition, middle grades engagement in formal or informal professional development activities and how that engagement

may be related to variations in effective middle grades principal practice have yet to be examined.

CHAPTER 3

METHOD

The purpose of this study was to identify the formal and informal professional learning experiences in which middle grades principals participate and the perceived contributions of these experiences to effective middle grades leadership. This study also examined the relationship between these professional learning experiences and developmentally responsive middle grades leadership.

Research Questions and Hypotheses

Research Questions

1. In what formal middle grades professional learning experiences have principals of middle schools participated?
2. In what informal middle grades professional learning experiences have principals of middle schools participated?
3. What formal middle grades professional learning experiences do middle grades principals perceive as contributing to their effectiveness as developmentally responsive middle grades leaders?
4. What informal middle grades professional learning experiences do middle grades principals perceive as contributing to their effectiveness as developmentally responsive middle grades leaders?

5. What formal middle grades professional learning experiences do middle grades principals perceive as contributing most to their effectiveness as developmentally responsive middle grades leaders?
6. What informal middle grades professional learning experiences do middle grades principals perceive as contributing most to their effectiveness as developmentally responsive middle grades leaders?
7. Is there a relationship between the formal middle grades professional learning experiences in which middle grades principals participate and developmentally responsive middle grades principal leadership behaviors?
8. Is there a relationship between the informal middle grades professional learning experiences in which middle grades principals participate and developmentally responsive middle grades principal leadership behaviors?
9. Is there a relationship between the formal middle grades professional learning experiences principals identify as contributing to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?
10. Is there a relationship between the informal middle grades professional learning experiences principals identify as contributing to their effectiveness middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?
11. Is there a relationship between the formal middle grades professional learning experiences principals identify as contributing most to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?

12. Is there a relationship between the informal middle grades professional learning experiences principals identify as contributing most to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?

The researcher employed survey methodology to address these research questions. This chapter includes a description of the research design, instruments, population, data collection procedures, and data analysis procedures.

Research Design

Methodologists claim that descriptive quantitative approaches are well suited to an initial understanding of a construct, including participant perceptions of their behaviors and practices, identification of variables that influence the construct, and possible relationships that affect the construct (Fraenkel & Wallen, 2000; Gay & Airasian, 2003). The researcher employed quantitative survey methodology to initially identify principals' participation in professional learning experiences and then ascertain principals' perception of the value of these experiences related to their behaviors as middle grades leaders. Finally, this study used quantitative correlational research methodology to investigate the possible relationships between professional learning experiences and developmentally responsive middle grades leadership.

Instruments

Two instruments were used in this study: the adapted Middle Level Leadership Questionnaire (MLLQ) (see Appendix A) and the Professional Learning Experience Questionnaire-Middle Level (PLEQ-ML) (see Appendix B).

Adapted Middle Level Leadership Questionnaire

The MLLQ (Anfara et al., in press) is based on a model of leadership, Developmentally Responsive Middle Level Leadership (DRMLL), that specifically addresses effective middle grades leadership. The MLLQ measures five factors of effective middle grades leadership: (1) developmentally appropriate learning environments/support of teachers; (2) best practices; (3) developmentally appropriate learning environment/support of student needs; (4) promotes student self-confidence and competence; and (5) responsiveness to student needs/support of teachers (see Appendix C). The instrument is composed of two parts. Part I consists of 33 Likert-scaled questions that address respondents' perceptions of their own behaviors as middle grades principals. Part II of the MLLQ consists of 8 items and asks respondents to identify the middle grades program components that are in place at their school.

Anfara et al. (in press) established content validity of the MLLQ through a panel of 45 experts who helped construct and clarify the questionnaire items. Anfara et al. also statistically analyzed the experts' rankings of the importance and clarity of each questionnaire item. A factor analysis of a pilot test of 9 middle grades principals and their teachers (251) yielded the five construct factors listed earlier (see Appedix C). This analysis established construct validity. Anfara et al. determined reliability through measures of internal consistency (alpha coefficients) of items within each factor. Anfara et al. reported alpha coefficients of .93, .89, .81, .76, and .72 for the five factors, respectively. The MLLQ consists of two forms, one for principal ratings of their own behaviors relevant to developmentally responsive middle school leadership (Form A), and one for teachers' ratings of the principal's behaviors (Form B). The two forms mirror each other for each of the 33 items in Part I and the 8 items in Part II of the MLLQ.

The present study used an adapted version of the MLLQ. The researcher was interested in middle grades principals' perceptions of professional learning experiences in which they have engaged and how these experiences may be associated with principals' perception of their own developmentally responsive leadership. As such, the researcher was interested in establishing reliability and construct validity for the MLLQ based on principal responses only, using only Form A of the MLLQ. Eliminating teacher perceptions (Form B) allowed a comparison of principal perceptions of their own professional learning experiences and developmentally responsive leadership. Establishing factors using principals' responses only also provided an instrument for future research related to middle grades principals' perceptions of their leadership. For these reasons, an exploratory factor analysis was used to establish factors for principal perceptions and for reliability using only Form A.

Professional Learning Experiences Questionnaire-Middle Level

Description of the PLEQ-ML: The PLEQ-ML (see Appendix B) was developed by the researcher to identify the professional learning experiences in which principals have participated, the professional learning experiences that principals perceive as having contributed to their effectiveness as middle grades principals, and the professional learning experiences that principals perceive as having contributed most to their effectiveness as middle grades principals. The PLEQ-ML consists of two parts. Part I is composed of a list of 19 formal and informal professional learning experiences related specifically to middle grades education. The researcher identified 5 as formal and 14 as informal professional learning experiences from theoretical constructs derived from the literature. Part I also asks principals to identify additional professional learning experiences that may not be among the 19 listed. Part I of the PLEQ-ML asks principals to respond to the list of professional learning experiences in three ways. First,

principals identify those professional learning experiences in which they have participated. Second, principals identify those professional learning experiences they perceive as having contributed to their effectiveness as middle grades principals in facilitating the structures and practices of middle grades education. Third, principals identify the three professional learning experiences that have contributed most to their effectiveness as middle grades principals in facilitating the structures and practices of middle grades education.

Part II of the PLEQ-ML asks principals for demographic information about themselves and their schools. This information includes the principals' age, gender, and race; the percentage of students receiving free/reduced lunch; and the geographic location of their school. In addition, Part II asks principals to identify their formal educational preparation and years of experience in various roles as a professional educator.

Development of the PLEQ-ML. Content validity of the PLEQ-ML was established through expert opinions, a focus group, and cognitive interviews. The researcher initially identified 38 discrete professional learning experiences in which middle grades principals might participate through a search of the literature and the researcher's own experience as a middle grades principal. The researcher solicited three experts to examine the list of professional learning experiences and make additions, deletions, and suggestions. The three experts were university professors with expertise in middle grades teacher professional development, principal preparation and professional development, and middle grades education. The list included both formal and informal professional learning experiences in which principals may have participated. These 38 professional learning experiences constituted the first draft of the PLEQ-ML, which asked middle grades principals to identify the number of times and/or years of participation in each of the 38 professional learning experiences.

This first draft of the PLEQ-ML was presented to a focus group. The group consisted of 17 members of the executive board of the Georgia Leadership Institute for School Improvement (GLISI), an organization established to enhance the leadership skills of Georgia school administrators through induction and professional development activities. Each board member completed the first draft of the PLEQ-ML and provided written and verbal feedback. From the focus group's feedback the researcher reduced the number of items to 19 by combining similar items as suggested by the panel. The focus group also suggested the structure of the PLEQ-ML be adjusted to identify participation and relative importance of participation rather than numbers and years of participation. Consequently, the second draft of the PLEQ-ML asked principals to identify those professional learning experiences in which they participated, those they perceived as valuable, and the three they perceived as most valuable.

The researcher then conducted two cognitive interviews, one with a retired middle grades principal, and the other with a former middle grades principal who was currently serving as an assistant superintendent, using the second draft of the PLEQ-ML. In the cognitive interviews the researcher asked participants to "think aloud" about how they answered the questions. As recommended by Desimone and Le Floch (2004), this procedure allowed the researcher to address any difficulties that might lead to misunderstandings by participants before administering the questionnaire. Interviews ranged from 15 to 23 minutes and were audio-taped. The tapes were transcribed.

The researcher, using the computer software ATLAS-TI 5.0, coded the two transcripts. Codes included respondents' expression of unclear language, misinterpretation of directions, misinterpretation of questions, suggestions for improvement of language, and suggestions for improvement in layout. After analyzing the codes from the two transcripts, the researcher

developed a third draft of the PLEQ-ML. This draft included changes to the layout of the questionnaire. In addition, the language was changed for three questions to address respondents' issues with unclear language and misinterpretation.

The researcher then conducted three additional cognitive interviews using the third draft of the PLEQ-ML. The three participants included middle grades principals practicing in another state, one having been recognized as the middle school principal of the year for that state by the National Association of Secondary School Principals. These interviews were again transcribed and coded for respondents' expression of unclear language, misinterpretation of directions, misinterpretation of questions, suggestions for improvement of language, and suggestions for improvement in layout. The analyses of the three transcripts yielded changes in language in four questions. Suggestions from all three respondents also resulted in a reordering of questions to clarify meaning and reduce misinterpretations. The researcher, university experts, and a member of the GLISI expert panel reevaluated this final draft of the PLEQ-ML. No changes where made and this final draft became the PLEQ-ML.

Population

The researcher mailed the adapted MLLQ and the PLEQ-ML to the entire population (N=393) of full-time principals of middle grades schools in the state of Georgia (see Appendix D). For the purposes of this study, middle grades schools were defined as schools, or a portion of a school, containing grades 6, 7, and 8, or 7 and 8. The population, rather than a sample, was selected in order to provide sufficient numbers of returned responses for correlational analyses.

Data Collection Procedures

Upon acceptance of a prospectus, the researcher obtained permission to conduct the study from the University of Georgia Institutional Review Board (IRB) for the Protection of Human

Subjects. With the approval of the IRB, the adapted MLLQ and the PLEQ-ML were sent to the principals in January 2005 with a requested return date of March 5, 2005. The researcher also included a cover letter (see Appendix E) explaining the purpose of the questionnaires and instructions for completing them, and a pre-addressed, stamped envelope for returning the questionnaires. Questionnaire responses were confidential. Each questionnaire, however, was coded by number prior to mailing. Each number corresponded to a school for purposes of tracking nonresponses. A follow-up reminder to nonrespondents was mailed 3 weeks after the initial mailing. In addition, the researcher sent emails and made telephone calls to principals who did not respond.

Data Analysis Procedures

Correlational statistical procedures were used to analyze the data. The following sections describe the analyses of the adapted MLLQ, the PLEQ-ML, and the relationships between principals' professional learning experiences and developmentally responsive middle grades leadership.

Analyses of the Adapted MLLQ

Correlational statistical procedures, including factor analysis and scale reliability testing, were used on the returned questionnaires to establish construct validity and internal reliability of the adapted MLLQ. Specifically, an exploratory factor analysis was conducted using a principle component analysis to determine factors for the adapted MLLQ. Factors were extracted and rotated using a Varimax rotation. Alpha coefficients for each factor determined through the factor analysis were used to establish construct validity and internal reliability of the adapted MLLQ. Frequencies and percentages were calculated for principal responses to the eight components of middle grades education outlined in Part II of the adapted MLLQ.

Analyses of the PLEQ-ML

Descriptive statistics from the PLEQ-ML were calculated and included frequencies, percentages, and rankings for each professional learning experience in which the principals participated, for each professional learning experience principals perceived as contributing to their effectiveness as a middle grades principal, and for each professional learning experience principals listed as contributing most to their effectiveness as a middle grades principal. Frequencies, percentages, means, and standard deviations were also calculated for the data collected from the demographic portion of the PLEQ-ML.

Analyses of Relationships

In order to determine the relationships among professional learning experiences and the factors of the adapted MLLQ, Pearson product-moment correlations were calculated. Specifically, each factor of the adapted MLLQ was correlated with the professional learning experiences in which principals participated, the professional learning experiences that principals identified as contributing to their effectiveness, and the professional learning experiences that principals identified as contributing most to their effectiveness.

In order to determine if significant relationships existed between formal professional learning experiences as a group and the factors of the adapted MLLQ, the factors of the adapted MLLQ were correlated with the formal professional learning experiences in which principals participated, the formal professional learning experiences principals identified as contributing to their effectiveness, and the formal professional learning experiences principals identified as contributing most to their effectiveness. In addition, to determine if significant relationships existed between informal professional learning experiences as a group and the factors of the adapted MLLQ, the factors of the adapted MLLQ were correlated with the informal professional

learning experiences in which principals participated, the informal professional learning experiences principals identified as contributing to their effectiveness, and the informal professional learning experiences principals identified as contributing most to their effectiveness.

Finally, two multiple regression analyses were conducted to determine if formal and informal professional learning experiences were predictive of the factors of developmentally responsive middle grades leadership as established through the adapted MLLQ. The first regression analysis was conduced to determine if a predictive relationship existed between the formal and informal professional learning experiences in which the principals participated and the factors of the adapted MLLQ. The second regression analysis was conducted to determine if a predictive relationship existed between the formal and informal professional learning experiences principals perceived as contributing to their effectiveness and the factors of developmentally responsive middle grades leadership as established through the adapted MLLQ.

Regression analyses were not conducted for professional learning experiences that principals perceived as contributing most to their effectiveness and the factors of the adapted MLLQ. Each principal chose only 3 of 19 possible experiences, leaving nonresponses for unspecified numbers of variables.

Summary

This chapter outlined the research design, instruments, population, data collection procedures, and data analysis procedures the researcher used in this study. The study employed quantitative survey methodology to identify the professional learning experiences in which middle grades principals participate and their perceived value of these experiences, and to identify principals' self-reported developmentally responsive leadership behaviors. This study also used correlational

research methodology to determine if relationships exist between professional learning experiences and developmentally responsive middle grades leadership.

CHAPTER 4

RESULTS

The purpose of this study was to identify the formal and informal professional learning experiences in which middle grades principals participate and the perceived contributions of these experiences to effective middle grades leadership. This study also examined the relationship between these professional learning experiences and developmentally responsive middle grades leadership.

Research Questions and Hypotheses

Research Questions

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12. Is there a relationship between the informal middle grades professional learning experiences principals identify as contributing most to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?

The results of this study are presented in this chapter. The chapter is organized into five sections: (a) response rate, (b) demographic information, (c) analyses of the adapted MLLQ, (d) analyses of the PLEQ-ML, and (e) relationships among professional learning experiences and developmentally responsive middle level leadership.

Response Rate

The researcher sent the adapted MLLQ and the PLEQ-ML to all 393 middle grades principals in the state of Georgia; 168 surveys were returned. One survey was not usable because a significant portion of the data was missing. The remaining 167 surveys, representing a response rate of 42.5%, contained usable data. It should be noted that missing data on individual items did occur. For example, some surveys were missing demographic data or data on an item of the adapted MLLQ and the PLEQ-ML. Such omissions constituted less than 5% of any respondent's total responses.

Although there is no definitive agreed-upon single standard for acceptable response rates to questionnaires, methodologists suggest rates of 50 to 75% may be appropriate (Cohen, Manion, & Morrison, 2000; Fowler, 2002; Rea & Parker, 1997). When response rates fall below these levels, as is the case in this study, questions arise as to how well the results generalize to the population. Methodologists suggest when response rates may be in question researchers can minimize the difference between respondents and nonrespondents if they can ascertain the differences that might exist between the two groups, such as age, experience, or socioeconomic

level (Huck, 2000). The researcher in this study compared several demographic factors of respondents to this study with the general population of middle grades principals reported by the Georgia Department of Education (GDOE) (2005). Means were compared with respect to gender, ethnicity, and the free and reduced lunch status of the school in which principals worked. The percentage of males to females for respondents in this study was 46% and 52%, respectively, with 1.8% of the principals not responding to this item. This compared to the population percentages of 47% and 53% respectively. The ethnic backgrounds reported by middle grades principals in this study were 70% white and 27% African American, while the population ethnicity reported by the GDOE was 65 and 34% respectively. The mean for free and reduced lunches at schools in which the principals worked was reported as 53% compared to the population percentage of 50%. No other comparable demographic data were available through the GDOE.

The researcher also completed another comparison of demographic information with a recent dissertation study of middle grades principals in the state of Georgia (D. Warren, 2002) which reported the type of community in which middle grade principals reported they worked. In the Warren study, 17.4% of the middle grades principals reported working in urban schools, 37.5% reported working in suburban schools, and 45.1% reported working in rural schools. Comparatively, respondents in the present study reported a distribution of 15.6% urban, 37.1% suburban, and 43.7% rural.

In summary, comparing the four demographic categories in this study to other data sources, there appear to be reasonable correspondence between the response sample and the general population. Although the sample of respondents in this study tended to report slightly less diversity than the population, the other demographic factors are very similar. Based on these

comparisons, it appears reasonable to assert a cautious generalization of the results of this study to the general population of middle grades principals in the state of Georgia.

Demographic Information

In order to give context to the study, a broader array of demographic information related to middle grades principals and their schools than was available from the GDOE or the Warren (2002) study was collected from the study participants. Specifically, information about the principals' age, gender, race, professional preparation, and experience was obtained (see Table 1). Information about the schools in which the principals worked was also collected. This information included geographic region in which the school was located, as well as the socioeconomic status of the school as represented by the percentage of students receiving free and reduced lunch (see Table 1).

Nearly half of the principals' ages ranged between 47 and 57 years, with 47.9% falling within this category (see Table 1). The second most frequent age range was 36 to 46 years (32.9%). The respondents were predominately female (52.1%), with males composing 46.1%, and 1.8% of the respondents not listing a gender. Similarly, approximately 2% of the respondents did not respond to the question related to ethnicity. Of the 167 participants, 70.1% of the respondents were white, 26.9% Black, with all other ethnicities composing less than 1% of the respondents.

Regarding the professional preparation of principals (see Table 1), in all but one category, fewer than half of the respondents had any preparation expressly for the middle grades. Specifically, although 52.1% of the principals had a middle grades endorsement or certificate, the percent of respondents indicating they had an undergraduate, master's, specialist's, or doctoral degree in middle grades education was 28.7%, 33.5%, 26.9%, and 4.8%, respectively.

Table 1

Demographic Characteristics of Respondents and Their Schools

Demographic Variable	Frequency	%	M	(SD)
Age (n = 167)				
21-35	8	4.8		
36-46	55	32.9		
47-57	80	47.9		
58+	20	12.0		
Missing	4	2.4		
Gender (n = 167)				
Male	77	46.1		
Female	87	52.1		
Missing	3	1.8		
Race (n = 167)				
White	117	70.1		
Black	45	26.9		
Other	1	0.6		
Missing	4	2.4		
Type of Community of School (n = 167)				
Rural	73	43.7		
Suburban	62	37.1		
Urban	26	15.6		
Missing	6	3.6		

Table 1 continued

Demographic Characteristics of Respondents and Their Schools

	Frequency	%	M	(SD)
School Percent of Free/Reduced Lunch (n = 153)			53.3	24.8
Formal Preparation (n = 167)				
Undergraduate degree in middle grades	48	28.7		
Endorsement/certificate in middle grades	87	52.1		
Master's degree in middle grades education	56	33.5		
Specialist's degree in middle grades education	45	26.9		
Doctorate in middle grades education	8	4.8		
Administrative endorsement/certificate middle grades education	22	13.2		
Experience (n = 167)				
Years of teaching before becoming a principal			12.2	6.2
Years teaching at middle grades			7.2	5.8
Years as a middle grades assistant principal			3.6	3.6
Years as a principal			5.9	5.6
Years as middle grades principal			4.6	4.1
Years as principal at current school			4.1	3.6

Few of the respondents had been prepared to be an administrator expressly for the middle grades with only 13.2% of the principals indicating they had an administrative degree specifically for the middle grades.

The results related to the professional experience of the respondents (see Table 1) indicated that the principals, on average, had considerable years of experience as a teacher prior to becoming a principal (M = 12.2, SD = 6.2). A large percentage, however, had little or no experience teaching in the middle grades schools, with 12% having no experience, and 24% having less than 3 years. Moreover, 26% of the principals had not served as assistant principals in a middle grades school, with 3.6 being the mean number of years spent as a middle grades assistant principal (SD = 3.6). The mean number of years the respondents indicated they had been principals was 5.9 years (SD = 5.6), principals at middle grades school 4.6 years (SD = 4.1), and principals at their current school 4.1 years (SD = 3.6), with nearly 85% of the middle grades principals serving less than 5 years at their current school.

Principals were also given the opportunity to respond to an open-ended question asking about formal preparation specifically in middle grades education. Of the 40 responses to the open-ended question, only one principal provided a formal preparation example directly related to middle grades education (see Appendix E). This respondent listed certification in 4-8 teaching, which was also one of the closed-question response choices.

Analyses of the Adapted MLLQ

The analyses of the adapted MLLQ included factor analyses and descriptive statistics related to Part II of the adapted MLLQ, exemplary middle school structures and practices that were implemented in the principals' schools.

Factor Analyses

This section reports the results of an initial factor extraction of the adapted MLLQ and rotated models that resulted from that extraction.

Initial factor extraction. An initial factor extraction of the useable responses from the adapted MLLQ, using *Statistical Package for the Social Sciences* (SPSS) version 12.0, was conducted. The sample size for this analysis, 167, met the subjects-to-variables ratio criteria, which should be not less than 5 participants per item on the MLLQ, or a minimum of 165 participants (Bryant & Yarnold, 1995). Kaiser's criterion (1960), which SPSS employs by default, was applied. SPSS extracted 9 factors with eigenvalues greater than 1 (see Table 2). The first factor accounted for 35.57% of the variance with the remaining 8 factors accounting for an additional 33.92% of the variance, for a total of 69.49% of the variance (see Table 2).

Cattell's (1977) scree test was also performed to determine which factors to retain (see Figure 1). The scree plot is read for a clear "break" or "turn" in the line connecting the plotted eigenvalues on the graph (Spector, 1992). Based on the data curve presented in the scree plot, two possible factor models were indicated—either a 3- or 5-factor model was justified.

According to Green and Salkind (2005), a third criterion should be applied to the choice of factors to extract—the a priori conceptual constructs that may underlie the factors. Considering the 5-factor model outlined by Anfara et al. (in press) in the original testing of the MLLQ, five factors comprised a possible model solution. Alternately, the theoretical framework that supported the original MLLQ, Developmentally Responsive Middle Level Leadership (DRMLL), outlined by Brown and Anfara (2002) and Brown et al. (2002), suggested three factors as a possible model solution corresponding to responsiveness to students, responsiveness

Table 2

Initial Factor Extraction

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	11.74	35.57	35.57
2	1.99	6.02	41.59
3	1.61	4.87	46.46
4	1.58	4.78	51.24
5	1.51	4.58	55.81
6	1.26	3.82	59.54
7	1.21	3.68	63.31
8	1.02	3.11	66.42
9	1.01	3.07	69.50
10	0.88	2.65	72.15
11	0.81	2.46	74.61
12	0.76	2.30	76.91
13	0.69	2.10	79.02
14	0.62	1.87	80.88
15	0.57	1.72	82.60
16	0.55	1.65	84.24
17	0.51	1.55	85.80
18	0.49	1.47	87.27
19	0.45	1.35	88.62

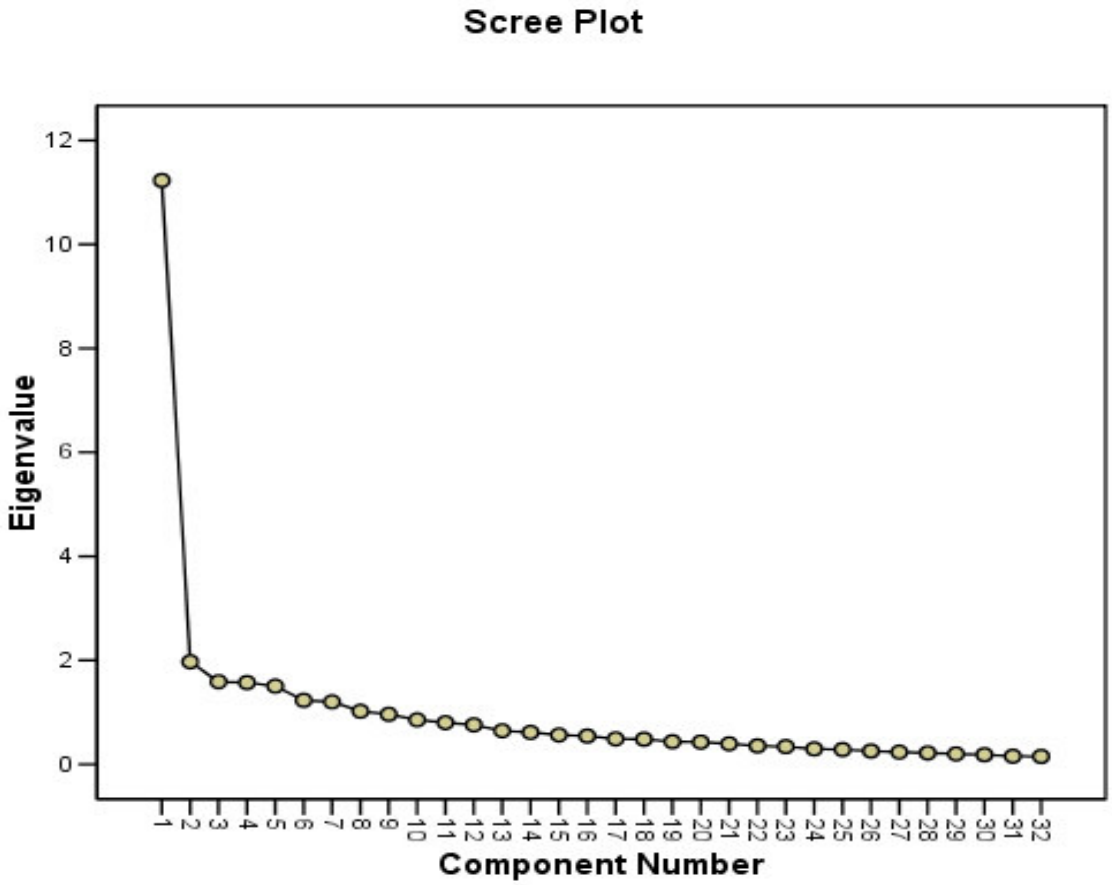
Table 2 (continued)

Initial Factor Extraction

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
20	0.43	1.30	89.92
21	0.40	1.20	91.12
22	0.38	1.14	92.26
23	0.34	1.04	93.30
24	0.33	0.99	94.29
25	0.29	0.88	95.18
26	0.27	0.81	95.99
27	0.25	0.75	96.74
28	0.22	0.67	97.42
29	0.20	0.61	98.03
30	0.19	0.57	98.60
31	0.17	0.50	99.10
32	0.15	0.46	99.57
33	0.14	0.43	100.00

Figure 1

Scree Plot for Initial Extraction



to faculty, and responsiveness to exemplary middle grades education in schools as it supports faculty and students.

Factor rotations. With the scree plot and the a priori conceptual frameworks in mind, the researcher conducted both a 5 ($k = 5$) and 3 *($k = 3$)* principal component analysis using a Varimax rotation with Kaiser normalization. Tables 3 and 4 present the component matrix for the 5-factor and 3-factor models, respectively. The 3-factor model provided a better fit than the 5-factor model for two reasons. First, the 3-factor model provided a more equal distribution of variance among the factors. The 3-factor model also resulted in a more equal distribution of question items to be loaded on each factor. The second, and more important reason for choosing the 3-factor model, was its fit with the constructs of DRMLL. The 5-factor model neither matched the MLLQ factors presented by Anfara et al. (in press) nor the underlying constructs of the DRMLL model. The items of the 3-factor model grouped closely with the three constructs of the DRMLL theoretical model: developmental responsiveness of leaders to students, faculty, and exemplary middle grades education in schools as it supports faculty and students (see Table 5).

The minimum factor-loading criterion for retaining items in a factor model after rotation is .30 (Nunnally, 1978). Question 2, "As the principal of a middle school I promote the caring relationships between teachers, staff, and students through structures like advisory period etc.", did not load above a .30 on any of the factors in the 3-factor model. This item was eliminated from the model and a final Varimax rotation of the 3-factor solution was conducted. The total variance explained by the model after rotation and without question 2 was 47.76% (see Table 6).

Reliability of the model was determined through internal consistency as measured by Chronbach's alpha coefficients of items within each factor. The alpha coefficients for factors 1 through 3 were .91, .87, and .80 respectively. Methodologists consider reliability correlation

Table 3

Rotated Component Matrix for 5-Factor Model

	Factors				
Question	1	2	3	4	5
Q_1	.042	.163	.347	.358	-.102
Q_2	.036	.143	-.128	.274	.476
Q_3	.132	.139	.111	.834	.042
Q_4	.180	.080	.174	.769	.188
Q_5	.128	.357	.364	.359	.244
Q_6	.257	.205	.562	.115	.187
Q_7	.125	.011	.694	.218	.040
Q_8	.173	.111	.668	.167	.142
Q_9	.065	.354	.629	-.030	.239
Q_10	.525	.281	.473	.039	.009
Q_11	.180	.512	.295	.245	-.045
Q_12	.233	.427	.306	.189	-.122
Q_13	.395	.342	.631	.041	-.091
Q_14	.380	.452	.557	-.131	-.051
Q_15	-.044	.052	.179	-.090	.660
Q_16	.148	.733	.306	-.039	.234
Q_17	.249	.563	.290	.069	.169
Q_18	.278	.532	.110	.261	-.143
Q_19	.407	.617	.179	.219	-.021

Table 3 (continued)

Rotated Component Matrix for 5-Factor Model

Question	Factor *1*	*2*	*3*	*4*	*5*
Q_20	.249	.717	.055	-.019	.190
Q_21	.219	.664	.008	.163	.385
Q_22	.686	.295	.224	.172	.003
Q_23	.405	.653	.076	.117	-.057
Q_24	.546	.323	.267	.018	.158
Q_25	.737	.217	.072	.195	-.031
Q_26	.778	.325	.123	.053	.095
Q_27	.759	.221	.104	.121	.098
Q28	.653	.136	.316	.040	.034
Q_29	.410	.376	.161	.049	.199
Q_30	.289	.057	.440	.133	.562
Q_31	.440	-.122	.360	.163	.402
Q_32	.532	.204	.017	.010	.408
Q_33	.610	.339	.281	.158	-.024

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 7 iterations.

Table 4

Rotated Component Matrix for 3-Factor Model

	Factors		
Question	1	2	3
Q_1	.111	.177	.358
Q_2	-.061	.238	.214
Q_3	.103	.256	.418
Q_4	.141	.196	.509
Q_5	.164	.397	.515
Q_6	.339	.186	.550
Q_7	.237	-.009	.646
Q_8	.275	.092	.644
Q_9	.178	.315	.576
Q_10	.615	.230	.346
Q_11	.258	.507	.273
Q_12	.319	.404	.225
Q_13	.537	.272	.433
Q_14	.521	.363	.321
Q_15	-.089	.090	.410
Q_16	.223	.707	.291
Q_17	.308	.549	.292
Q_18	.330	.531	.080
Q_19	.460	.610	.162

Table 4 (continued)

Rotated Component Matrix for 3-Factor Model

	Factors		
Question	1	2	3
Q_20	.276	.706	.073
Q_21	.197	.706	.200
Q_22	.717	.277	.187
Q_23	.452	.634	.022
Q_24	.580	.297	.240
Q_25	.734	.212	.059
Q_26	.783	.303	.094
Q_27	.749	.213	.114
Q28	.695	.099	.232
Q_29	.424	.371	.193
Q_30	.285	.089	.637
Q_31	.423	-.096	.511
Q_32	.476	.224	.160
Q_33	.661	.314	.218

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 8 iterations.

Table 5

DRMLL Constructs and Adapted MLLQ Questions Associated with Constructs

Factor	Question: As the principal of a middle school I…
Factor 1: Faculty	10. have a vision of what an exemplary middle school is and strive to bring that vision to life.
Factor 1: Faculty	13. demonstrate an understanding of the intellectual, physical, psychological, and social characteristics of young adolescents.
Factor 1: Faculty	14. demonstrate an understanding of the relationship between the cognitive and affective needs of young adolescents.
Factor 1: Faculty	22. make decisions based on young adolescent development and effective middle-level practices.
Factor 1: Faculty	24. provide time for general education teachers to collaborate with special education teachers in order to meet the diverse needs of young adolescents.
Factor 1: Faculty	25. encourage teachers time, grouping, and instructional strategies to help individual students to achieve mastery of subject matter.
Factor 1: Faculty	26. encourage teachers in their efforts to respond to the needs of young adolescents.
Factor 1: Faculty	27. encourage teachers in their use of a wide variety of instructional approaches and materials.
Factor 1: Faculty	28.encourage active discovery learning on the part of students rather than teacher lectures.
Factor 1: Faculty	29. encourage activities such as special-interest classes and hands-on learning.
Factor 1: Faculty	32. encourage teachers to make connections across disciplines to reinforce important concepts.
Factor 1: Faculty	33. require teachers to provide classroom activities that address the needs of academically diverse learners who vary greatly in readiness, interests, and learning profile.

Table 5 (continued)

DRMLL Constructs and Adapted MLLQ Questions Associated with Constructs

Factor	Question: As the principal of a middle school I…
Factor 2: Students	11. provide curricular materials that enhance young adolescents' acceptance of self and others and that enable them to accept differences and similarities among people.
Factor 2: Students	12. provide adequate counseling/advisory opportunities.
Factor 2: Students	16. provide students with opportunities to explore a rich variety of topics in order to develop their identity and demonstrate their competence.
Factor 2: Students	17. develop connections with and involves families in the education of their children.
Factor 2: Students	18. provide age-appropriate co-curricular (or extra-curricular) activities.
Factor 2: Students	19. provide students with opportunities to explore, make mistakes, and grow in a safe, caring environment.
Factor 2: Students	20. encourage mature value systems by providing opportunities for students to examine options of behavior and to study consequences of various actions.
Factor 2: Students	21. regard young adolescents as resources in planning and program development and involve them in meaningful roles.
Factor 2: Students	23. allow teachers and students to plan activities that integrate genders.
Factor 3: School	1. design and implement policies and procedures that reflect the needs of young adolescents.
Factor 3: School	3. provide transition programs from middle to high school for my middle school students.
Factor 3: School	4. provide transition programs from elementary to middle school for my middle school students.
Factor 3: School	5. organize the curriculum around real-life concepts.
Factor 3: School	6. advocate for middle schools and the middle school concept in the school district.

Table 5 (continued)

DRMLL Constructs and Adapted MLLQ Questions Associated with Constructs

Factor	Question: As the principal of a middle school I…
Factor 3: School	7. prepare a daily schedule that includes time for team planning and meeting.
Factor 3: School	8. stay current on what the research says about best practices for middle schools.
Factor 3: School	9. group students and teachers in small learning communities.
Factor 3: School	15. spend time each day with students.
Factor 3: School	30. create opportunities for professional development of teacher/staff that address strategies for meeting the need of young adolescents.
Factor 3: School	31. support appropriate instructional strategies with the necessary resources (i.e., money, time needed, etc.).

Table 6

Variance of Initial Factor Extraction and Factor Rotation of 3-Factor Model

	Extracted Sums of Squares Loadings			Rotation Sums of Squares Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.70	36.58	36.58	5.46	17.05	17.05
2	1.98	6.19	42.77	5.44	17.00	34.05
3	1.60	5.00	47.76	4.39	13.71	47.76

coefficients of .70 or greater adequate to establish reasonable confidence in the reliability of the instrument (De Vaus, 2002; Gay & Airasian, 2003).

Middle School Structures and Practices Implemented

Principal responses to the eight structures and practices of exemplary middle grades education indicated these eight structures and practices were implemented to varying degrees in principals' schools (see Table 7). About three-quarters of the principals believed exploratory curriculum (77%), varied teaching methods and approaches (81%), and team teaching (76%) were being implemented in their schools. About half of the principals believed their schools were implementing democratic governance (50%), programs that promote good health and wellness (56%), and 57% believed their schools were involving families to a high degree. Advisory programs were only being implemented in 31% of the schools while flexible scheduling was implemented in 43% of the schools.

Analyses of the PLEQ-ML

The analyses related to the PLEQ-ML included descriptive analyses of responses to each professional learning experience item. The number and percentage of principals participating in each professional learning experience and the rank order of the professional learning experiences based on participation are presented in Table 8. The majority of principals participated in each of the five formal professional learning experiences, with participation ranging from 54% to 86% of the respondents. There were eight informal professional learning experiences in which nearly 50% of the principals participated, including reading professional journal articles (88%) and reading professional books (84%), networking with other professionals at the school (81%) and outside the school (61%), working with a consultant (61%), serving on a local committee (60%), studying with a group outside school (50%), and studying with a group within school (49%). In

Table 7

Number of Middle Grades Structures and Practices Implemented

Structures and Practices	Schools Implementing	%
Exploritory Curriculum	128	76.6
Varied Teaching and Learning Approaches	135	80.8
Flexible Scheduling	71	42.5
Democratic Governance of the School	84	50.3
Programs that Promote Good Health, Wellness, and Safety	93	55.7
Team Teaching	127	76.0
Advisory Programs	52	31.1
Involvement of Families and Communities	95	56.9

n =167

Table 8

Ranks, Type, Number, and Percent of Professional Learning Experiences in which Principals Participated (n = 167)

Rank of Professional Learning Experiences	Type	# of Principals	%
1. Professional journal articles read	Informal	147	88.0
2. Conferences/seminars district	Formal	144	86.2
3. Professional books read	Informal	141	84.4
4. Networking in school	Informal	135	80.8
5. University classes	Formal	131	78.4
6. Conferences/seminars national	Formal	122	73.1
7. Participation with consultant	Informal	102	61.1
8. Networking outside school	Informal	101	60.5
9. Membership local committee	Informal	99	59.3
10. In-service school	Formal	97	58.1
11. In-service district	Formal	90	53.9
12. Study group out of school	Informal	83	49.7
13. Study groups in school	Informal	82	49.1
14. Participation in leadership	Informal	68	40.7
15. Written reflection	Informal	57	34.1
16. Mentor to another principal	Informal	56	33.5
17. Members state or national committee	Informal	50	29.9
18. Participation book club	Informal	47	28.1
19. Being mentored by another principal	Informal	30	18.0

addition, two principals responded to the open-ended question citing two professional learning experiences in which they participated. These two experiences were 20 years of military experience and work with a school improvement specialist. These two principals also listed these two experiences as contributing to their effectiveness.

Table 9 gives the ranking by percent of middle grades principals reporting professional learning experiences that contributed to their effectiveness when controlling for participation. The researcher controlled for participation when examining the experiences principals perceived as contributing to their effectiveness and most contributing to their effectiveness because of the wide range of participation rates (i.e., 18 to 88%) in professional learning experiences. For example, if only 30 respondents participated in a professional learning experience but all 30 listed it as contributing and contributing most to their effectiveness, the perceived value of this experiences would be lost in relationship to an experience where 130 principals participated and 30 indicated the experience contributed to their effectiveness. Ranks were established based on the percentage of participants indicating a professional learning experience contributed to their effectiveness holding participation constant.

As can be seen in Table 9, when participation is controlled, a high percentage (i.e., 82% to 99%) of principals who participated in professional learning experiences perceived those experiences as contributing to their effectiveness. Networking within the school, studying with groups within the school, reading professional books, mentoring another principal, working with a consultant, and participating in in-service at the district level were the top-ranked professional learning experiences, with at least 98% of the principals indicating these experiences contributed to their effectiveness. The majority of these top-ranked professional learning experiences, five of the six, were informal.

Table 9

Ranks, Type, and Percent of Principals Reporting Professional Learning Experiences that Contributed to their Effectiveness, Controlling for Participation

Professional Learning Experience	Type	%
1. Networking in school	Informal	99.0
2. Study groups in school	Informal	98.7
3. Professional books read	Informal	98.6
4. Mentor to another principal	Informal	98.1
5. Participation with consultant	Informal	98.0
6. In-service district	Formal	97.6
7. In-service school	Formal	96.7
8. Networking outside school	Informal	96.7
9. Conferences/seminars district	Formal	96.4
10. Study group out of school	Informal	96.1
11. Professional journal articles read	Informal	95.6
12. Membership state or national committee	Informal	93.6
13. Membership local committee	Informal	93.5
14. Being mentored by another principal	Informal	92.9
15. Written reflection	Informal	91.1
16. Participation in leadership	Informal	88.9
17. University Classes	Formal	88.8
18. Participation book club	Informal	88.1
19. Conferences/seminars national	Formal	82.0

Again controlling for participation, percentages and rankings of the professional learning experiences that principals perceived as contributing most to their effectiveness indicated 30% to 40% of the participants believed networking outside school, networking in school, participating in district conferences and seminars, and studying with groups out of school contributed most to their effectiveness (see Table 10). Twenty to 29% of the principals perceived 10 of the professional learning experiences as contributing most to their effectiveness, while 18% or less of the principals perceived 4 professional learning experiences contributed most to their effectiveness. When comparing the rankings of the professional learning experiences that contributed to effectiveness to the rankings of the professional learning experiences that contributed most to effectiveness, networking in school was the only professional learning experience that consistently appeared in the highest rankings in both lists.

Relationships Among Professional Learning Experiences and Developmentally Responsive Middle Level Leadership

The analyses of the relationships among professional learning experiences and DRMLL included correlations and regression analyses.

Correlational Analyses

Pearson product-moment correlations were computed to determine the relationships among the 19 professional learning experiences in which principals participated and the three factors of the DRMLL, responsiveness to faculty, responsiveness to students, and responsiveness to exemplary middle grades education in schools. As can be seen in Table 11, serving as a member on a local committee, participating in a book club, studying with groups within the school, and networking within the school were significantly and positively correlated with all three DRMLL factors. University classes were significantly correlated with two DRMLL factors,

Table 10

Ranks, Type, and Percent of Principals Reporting Professional Learning Experiences that Contributed Most to their Effectiveness, Controlling for Participation

Professional Learning Experience	Type	%
1. Networking outside school	Informal	39.6
2. Networking in school	Informal	34.8
3. Conferences/seminars district	Formal	31.9
4. Study group out of school	Informal	30.1
5. Conferences/seminars national	Formal	28.7
6. Participation with consultant	Informal	28.4
7. Professional journal articles read	Informal	26.5
8. Professional books read	Informal	26.2
9. Participation in leadership	Informal	25.0
10. In-service district	Formal	22.2
11. University classes	Formal	22.1
12. Study group in school	Informal	20.1
13. Being mentored by another principal	Informal	20.0
14. In-service school	Formal	19.6
15. Membership state or national committee	Informal	18.0
16. Mentor to another principal	Informal	17.9
17. Written reflection	Informal	17.5
18. Participation book club	Informal	10.6
19. Membership local committee	Informal	5.0

Table 11

Correlations Among Professional Learning Experiences in which Principals Participated and the Three Factors of DRMLL

		Factor		
Professional Learning Experiences	n	Faculty	Students	Schools
University Classes	165	.239**	.156	.222**
In-service school	164	.044	.145	.105
In-service district	163	.058	.139	.047
Conferences/seminars district	165	.001	.072	.017
Conferences/seminars national	166	.071	.037	.108
Participation in leadership	163	.004	.096	.072
Membership local committee	165	.210*	.284**	.180*
Membership state or national committee	164	.024	.132	.196*
Participation with consultant	165	.085	.074	.030
Participation book club	165	.279**	.300**	.191*
Professional books read	165	-.087	-.097	.017
Articles professional journals	165	.040	.069	.024
Written reflection	163	.082	.135	.132
Study group in school	161	.215*	.196*	.286**
Study group outside school	162	.125	.133	.068
Networking in school	160	.257**	.209*	.269**
Networking outside school	162	.016	.077	.092

Table 11 (continued)

Correlations Among Professional Learning Experiences in which Principals Participated and the Three Factors of DRMLL

		Factor		
Professional Learning Experiences	n	Faculty	Students	**Schools**
Mentor to another principal	160	.086	.179*	.124
Being mentored by another principal	165	-.015	.100	-.029

** $p < 0.01$, 2-tailed

* $p < 0.05$, 2-tailed

responsiveness to faculty and to exemplary middle grades schools. Serving on a state or national committee was significantly correlated with responsiveness to exemplary middle grades education in schools, while mentoring another principal was significantly correlated with responsiveness to students.

Pearson product-moment correlations were computed to determine the relationships among the 19 professional learning experiences principals perceived as contributing to their effectiveness and the three factors of DRMLL, responsiveness to faculty, responsiveness to students, and responsiveness to exemplary middle grades education in schools. As seen in Table 12, networking in school was the only professional learning experience that was significantly correlated with all three factors of DRMLL. Study groups in school were significantly correlated with two factors, responsiveness to faculty and responsiveness to exemplary middle grades education in schools. Four professional learning experiences correlated significantly with one factor of DRMLL: university classes with responsiveness to exemplary middle grades education in schools, membership on a local committee with responsiveness to students, participation in a book club with responsiveness to students, and networking outside school with responsiveness to faculty.

Pearson product-moment correlations were computed to determine the relationships among the 19 professional learning experiences principals perceived as contributing most to their effectiveness and the three factors of DRMLL, responsiveness to faculty, responsiveness to students, and responsiveness to exemplary middle grades education in schools. As seen in Table 13, participation in professional book clubs was significantly correlated with responsiveness to students, while networking outside school was significantly correlated with responsiveness to faculty.

Table 12

Correlations Among Professional Learning Experiences Principals Perceive as Contributing to their Effectiveness and the Three Factors of DRMLL

		Factor		
Professional Learning Experience	n	Faculty	Students	School
University Classes	134	.057	-.011	.206*
In-service school	123	-.097	.019	.016
In-service district	116	.045	.067	.086
Conferences/seminars district	142	.075	.123	.147
Conferences/seminars national	132	-.057	-.050	.117
Participation in leadership	98	.030	.115	.161
Membership local committee	119	.104	.216*	.121
Membership state or national committee	97	-.037	.103	.195
Participation with consultant	124	-.644	-.747	-.669
Participation book club	99	.181	.205*	.162
Professional books read	137	-.024	-.105	.036
Articles professional journals	140	-.466	-.209	-.946
Written reflection	105	-.119	-.048	-.002
Study group in school	119	.191*	.172	.247**
Study group outside school	109	.089	.057	.080
Networking in school	134	.292**	.285**	.343**
Networking outside school	118	.185*	.121	.153

Table 12 (continued)

Correlations Among Professional Learning Experiences Principals Perceive as Contributing to their Effectiveness and the Three Factors of DRMLL

		Factor		
Professional Learning Experience	n	Faculty	Students	School
Mentor to another principal	101	.016	.070	.083
Being mentored by another principal	86	.014	.104	-.087

** $p < .01$ level, 2-tailed

* $p < .05$ level, 2-tailed

Table 13

Correlations Among Professional Learning Experiences Principals Perceive as Contributing Most to their Effectiveness and the Three Factors of DRMLL

	Factors		
Professional Learning Experiences	Faculty	Students	Schools
University Classes	-.005	.010	-.115
In-service school	.045	.067	.094
In-service district	.071	.077	-.024
Conferences/seminars district	-.112	-.036	.054
Conferences/seminars national	-.031	-.007	.070
Participation in leadership	-.023	.012	.039
Membership local committee	.110	.143	.042
Membership state or national committee	.082	.097	.143
Participation with consultant	-.044	-.044	-.120
Participation book club	.149	.162*	.138
Professional books read	.006	-.016	.064
Articles professional journals	.027	-.001	.085
Written reflection	-.033	.045	.094
Study group in school	.056	.113	.073
Study group outside school	-.027	.014	.043
Networking in school	-.023	.080	-.030
Networking outside school	.155*	.143	.145

Table 13 (continued)

Correlations Among Professional Learning Experiences Principals Perceive as Contributing Most to their Effectiveness and the Three Factors of DRMLL

	Factor		
Professional Learning Experiences	Faculty	Students	Schools
Mentor to another principal	-.033	.105	-.043
Being mentored by another principal	-.060	.045	.014

n = 161

** $p < .01$, 2-tailed

* $p < .05$, 2-tailed

Finally, the 19 professional learning experiences of the PLEQ-ML were combined into two groups, formal and informal professional learning experiences. The formal professional learning experience variable was composed of the five formal professional learning experiences, while the informal professional learning experience variable was composed of the 11 informal professional learning experiences. As seen in Table 14, participation in formal professional learning experiences was significantly correlated with responsiveness to students. Participation in informal professional learning experiences was significantly correlated with all three factors of DRMLL. Informal professional learning experiences that principals perceived as contributing to their effectiveness were significantly correlated with responsiveness to students.

Regression Analyses of Formal and Informal Professional Learning Experiences

Two multiple regression analyses were conducted to determine if formal and informal professional learning experiences had predictive relationships with developmentally responsive middle grades leadership. The first multiple regression analysis examined participation in the formal and informal professional learning experiences and the three factors of DRMLL (see Table 15). Results indicated that participation in informal professional learning experiences significantly predicted all three factors of DRMLL, responsiveness to faculty ($\beta = .23$, $p <. 05$), responsiveness to student ($ß = .37$, $p < .001$), and responsiveness to exemplary middle grades education in schools ($ß = .24$, $p < .05$). Participation in formal professional learning experiences predicted only responsiveness to students ($ß = .18$, $p < .05$). Together, formal and informal professional learning experiences in which principals participated accounted for 7.6% of the variance in responsiveness to faculty, 18.3% of the variance in responsiveness to students, and 5.9% of the variance in responsiveness to exemplary middle grades education in schools.

Table 14

Correlations Between Formal and Informal Professional Learning Experiences and the Three Factors of DRMLL

	Factor		
Formal/Informal Learning Experiences	Faculty	Students	Schools
Participation in formal experiences	.135	.193*	.160
	n = 136	n = 137	n = 133
Participation in informal experiences	.260**	.397**	.301**
	n = 127	n = 128	n = 122
Formal experiences that contributed	-.015	.042	.155
	n = 101	n = 104	n = 101
Informal experiences that contributed	.200	.367**	.222
	n = 72	n = 74	n = 70
Formal experiences that contributed most	.030	-.034	-.036
	n = 161	n = 161	n = 156
Informal experiences that contributed most	-.076	-.102	-.124
	n = 161	n = 161	n = 156

** $p < .01$, 2-tailed

* $p < .05$, 2-tailed

Table 15

Regression Analyses of Participation in Formal and Informal Professional Learning Experiences and Three Factors of DRMLL

	Faculty		Students		School	
Learning Experiences	t	β	t	β	t	β
Participation Formal	1.65	.15	2.07*	.18	.94	.09
Participation Informal	2.50*	.23	4.31***	.37	2.60	.24*
Overall Model	$F(2, 118) = 5.92$**		$F(2, 119) = 14.52$***		$F(2, 114) = 4.66$**	
	Adj. $R^2 = .076$		Adj. $R^2 = .183$		Adj. $R^2 = .059$	

***$p < .001$

**$p < .01$

*$p < .05$

The second multiple regression analysis examined formal and informal professional learning experiences that principals perceived as contributing to their effectiveness as middle grades principals and the three factors of DRMLL (see Table 16). The informal professional learning experiences that principals perceived as contributing to their effectiveness was a significant predictor of developmental responsiveness to students ($ß = .38$, $p < .001$). The formal professional learning experiences that principals perceived as contributing to their effectiveness as middle grades principals were not significantly related with any of the factors of DRMLL. Together, formal and informal professional learning experiences that principals perceived as contributing to their effectiveness explained 2.1% of the variance in responsiveness to faculty, 11.9% of the variance in responsiveness to students, and 2.1% of the variance in responsiveness

Table 16

Regression Analysis of Formal and Informal Professional Learning Experiences Contributing to Effectiveness and the Three Factors of DRMLL

	Faculty		Students		School	
Learning Experiences	t	β	t	β	t	β
Formal Experiences	-.435	-.053	-.064	.007	.179	.022
Informal Experiences	1.873	.230	3.329***	.381	1.772	.217
Overall Model	F(2, 67) = 1.755		F(2, 69) = 5.79**		F(2, 66) = 1.726	
	Adj. R^2 = .021		Adj. R^2 =.119		Adj. R^2 = .021	

***p < .001

**$p < .01$

*$p < .05$

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The summary, conclusions, and recommendations of this study are presented in this chapter. The chapter is organized into seven sections including (a) summary of purpose, (c) summary of descriptive data, (e) summary of findings, (f) conclusions, (h) implications for principals and policy makers, and (g) recommendations for further research.

Summary of Purpose

The purpose of this study was to identify the formal and informal professional learning experiences in which middle grades principals participate and the perceived contributions of these experiences to effective middle grades leadership. This study also examined the relationship between these professional learning experiences and developmentally responsive middle grades leadership. The knowledge gained through this study added to the limited research related to the professional learning experiences of middle grades principals, developmentally responsive middle grades principal leadership, and the relationships that may exist between formal and informal professional learning experiences and developmentally responsive middle grades leadership.

Summary of Descriptive Data

Descriptive data were collected through both the adapted MLLQ and the PLEQ-ML. Specifically, principals identified those exemplary middle grades structures and practices that were being implemented in their schools through Part II of the adapted MLLQ and they provided demographic information about themselves and their schools through the PLEQ-ML.

Varied teaching and learning approaches, exploratory curriculum, and team teaching were each implemented in 75% or more of the schools. Involvement of families and communities; programs that promote good health, wellness, and safety; and democratic governance of the school were each implemented in 50 to 75% of the schools. Flexible scheduling and advisory programs were each implemented in less than 50% of the schools.

Most respondents were 47 to 57 years old (47.9%), female (52.1%), and white (70.1%). A slight majority of principals, 52.1%, reported having teaching endorsements in middle grades education; however, less than half had undergraduate (28.7%), master's (33.5%), specialist's (26.9%), or doctoral degrees (4.8%) in middle grades education. Only 13.2% of the principals reported an administrative endorsement or certificate in middle grades education. The average respondent had spent 3.6 years as an assistant principal at a middle grades school and 5.9 years in the principalship, with 4.6 of those years in a middle grades school and 4.1 years in their current assignment.

Most of the principals reported working in rural schools (43.7%), while 37.1% and 15.6% reported working in suburban and urban schools, respectively. Principals reported that over half of the students in their schools (53.3%), on average, received free or reduced lunches.

Summary of Findings

The following summarizes the findings for each research question.

Research Question 1

In what formal middle grades professional learning experiences have principals of middle grades schools participated?

The majority of principals have participated in all five of the formal professional learning experiences related to middle grades education: taking university classes, participating in in-

service at the school, participating in in-service through the district, attending district or state conferences and seminars, and attending national conferences and seminars. District conferences and seminars and university classes were the highest ranked formal professional learning experiences in relationship to all 19 professional learning experiences in which the principals participated, ranking 2 and 5, respectively. Only one principal included a formal professional learning experience (i.e., military experience) not included in the questionnaire.

Research Question 2

In what informal middle grades professional learning experiences have principals of middle grades schools participated?

There was a wide range of participation by respondents in informal professional learning experiences related to middle grades education, from 18.0% of principals being mentored by another administrator to 88.0% reporting that they read articles in professional journals. There were eight informal professional learning experiences in which nearly 50% of all principals participated: reading professional journal articles (88.0%), reading professional books (84.4%), networking in schools (80.8%), working with a consultant (61.1%), networking outside school (60.5%), serving as a member on a local committee (59.3%), studying with groups outside school (49.7%), and studying with groups inside school (49.1%). Reading professional journal articles, reading professional books, and networking in school were in the top 5 of all 19 formal and informal professional learning experiences in which principals participated.

Research Question 3

What formal middle grades professional learning experiences do middle grades principals perceive as contributing to their effectiveness as developmentally responsive middle grades leaders?

Principals perceived all five of the formal professional learning experiences contributed to their effectiveness when controlling for participation, with 82 to 98 % responding that formal professional learning experiences contributed to their effectiveness. It appears that if principals participated in a formal professional learning experience they perceived that experience as contributing to their effectiveness. Participating in in-service at the school, participating in in-service at the district level, and attending conferences at the district level were the highest ranked formal professional learning experiences in relationship to all 19 professional learning experiences perceived as contributing to principals' effectiveness, ranking 6, 7, and 9, respectively.

Research Question 4

What informal middle grades professional learning experiences do middle grades principals perceive as contributing to their effectiveness as developmentally responsive middle grades leaders?

Principals perceived all 14 of the informal professional learning experiences contributed to their effectiveness when controlling for participation, with 88 to 99% responding that informal professional learning experiences contributed to their effectiveness. Networking in school, studying with a group inside school, reading professional books, mentoring another principal, and working with a consultant were the highest ranked informal professional learning experiences principals perceived as contributing to their effectiveness, ranking 1, 2, 3, 4, and 5, respectively in relationship to all 19 professional learning experiences. Writing reflections, holding a formal leadership position, and participating in book clubs were the lowest ranked informal professional learning experiences that contributed to effectiveness, ranking 15, 16, and 18, respectively.

Research Question 5

What formal middle grades professional learning experiences do middle grades principals perceive as contributing most to their effectiveness as developmentally responsive middle grades leaders?

Approximately 20 to 32% of the total respondents who participated in a formal professional learning experience listed that experience as contributing most to their effectiveness. Attending conferences and seminars at the district level and attending conferences at the national level were ranked highest in relationship to all 19 professional learning experiences, ranking 3 and 5, respectively. Participating in in-service at the district level, taking university classes, and participating in in-service at the school were the lowest ranked formal professional learning experiences, ranking 10, 11, and 14, respectively.

Research Question 6

What informal middle grades professional learning experiences do middle grades principals perceive as contributing most to their effectiveness as developmentally responsive middle grades leaders?

Approximately 5 to 40% of the total respondents who participated in an informal professional learning experience listed that experience as contributing most to their effectiveness. Networking inside school, networking outside school, and studying with a group outside the school were ranked highest in relation to all 19 professional learning experiences with a 1, 2, and 4 ranking, respectively. Mentoring another principal, writing reflections, participating in a book club, and serving on a local committee were the lowest ranked informal professional learning experiences, ranking 16 to 19, respectively.

Research Question 7

Is there a relationship between the formal middle grades professional learning experiences in which middle grades principals participate and developmentally responsive middle grades principal leadership behaviors?

Participation by principals in university classes was significantly and positively related to two factors of DRMLL, responsiveness to faculty and responsiveness to exemplary middle grades education in schools. In addition, when the five formal professional learning experiences were grouped and correlated to factors of DRMLL, participation in formal professional learning experiences was significantly related to responsiveness to students. Regression analyses also indicated formal professional learning experiences significantly predicted responsiveness to students. Therefore, the null hypothesis Ho1 was rejected.

Research Question 8

Is there a relationship between the informal middle grades professional learning experiences in which middle grades principals participate and developmentally responsive middle grades principal leadership behaviors?

Serving on a local committee, serving on a state or national committee, participating in a book club, studying with a group in school, networking in school, and mentoring another principal were significantly related to one or more factors of DRMLL. In addition, grouping informal professional learning experiences together and comparing this group to the three factors of DRMLL resulted in significant relationships between informal professional learning experiences in which principals participated and responsiveness to faculty, responsiveness to students, and responsiveness to exemplary middle grades education in schools. Moreover,

regression analyses indicated informal professional learning in which principals participated significantly predicted all three factors of DRMLL.

Research Question 9

Is there a relationship between the formal middle grades professional learning experiences principals identify as contributing to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?

There was a positive significant relationship between principals' perception of university classes contributing to their effectiveness and one factor of DRMLL, responsiveness to schools. However, when all five formal professional learning experiences were grouped, no significant relationships existed between formal professional learning experiences principals perceived as contributing to their effectiveness and any factors of DRMLL. In addition, regression analyses indicated that formal professional learning experiences that principals perceived as contributing to their effectiveness did not predict any factors of DRMLL. With only one formal professional learning experience correlating with one factor of DRMLL and the other correlations and regression analyses resulting in no significant relations, null hypotheses Ho3 was not rejected.

Research Question 10

Is there a relationship between the informal middle grades professional learning experiences principals identify as contributing to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?

Serving as a member of a local committee, participation in a book club, studying with a group in school, networking in school, and networking out of school were informal professional learning experiences that principals perceived as contributing to their effectiveness that were significantly related to one or more factors of DRMLL. In addition, grouping all 14 informal

professional learning experiences together and correlating this group with the factors of DRMLL resulted in a significant relationship with one of the factors, responsiveness to students. Moreover, regression analyses showed that informal professional learning experiences that principals perceived as contributing to their effectiveness predicted one factor of DRMLL, responsiveness to students. As a result of the individual and group correlations and the regression analyses, null hypothesis Ho4 was rejected.

Research Question 11

Is there a relationship between the formal middle grades professional learning experiences principals identify as contributing most to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?

No formal professional learning experience identified as contributing most to the effectiveness of middle grades principals was significantly related to any of the three factors of DRMLL. In addition, when all five of the formal learning professional learning were grouped together, no significant relationships existed between formal professional learning experiences principals perceived as contributing most to their effectiveness and factors of DRMLL. Therefore, null hypothesis Ho5 was not rejected.

Research Question 12

Is there a relationship between the informal middle grades professional learning experiences principals identify as contributing most to their effectiveness as middle grades leaders and middle grades principals' developmentally responsive leadership behaviors?

Participation in a book club and networking outside school were informal professional learning experience principals perceived as contributing most to their effectiveness that were significantly related to factors of DRMLL. Participating in book clubs was correlated with

responsiveness to students, while networking outside school was correlated with responsiveness to faculty. However, grouping all 14 informal professional learning experiences together and correlating this group with factors of DRMLL resulted in no significant relationship with any of the factors of DRMLL. Therefore, with only two informal professional learning experiences significantly related to only one factor of DRMLL, null hypothesis Ho6 was not rejected.

Conclusions

Eight conclusions can be drawn from this study. First, the preparation of Georgia principals specifically for the principalship in the middle grades was limited. Although just over 50% of the middle grades principals had endorsements or certificates in middle grades education, less than one third had any degree related to middle grades education. Approximately one-third of middle grades principals had little or no teaching experience at the middle grades and about one-third had not served as an assistant principal in the middle grades. Few of the respondents (13.2%) had administrative endorsements or certification specifically for the middle grades. The limited preparation of middle grades principals specifically for leadership in the middle grades noted in this study supports conclusions made by other researchers examining national trends of middle grades principal preparation (Gaskill, 2002; Lucas, 2003; Valentine et al., 2002).

Second, analyses of the descriptive data indicated implementation of exemplary middle grades structures and practices is a continuing issue in middle grades schools in Georgia. Only three of the eight exemplary middle grades practices and structures were reported to be implemented by 75% or more of the principals. The remaining five exemplary middle grades practices and structures were reported to be implemented by 57% or fewer of the principals. The tendency for self-reported survey data to over-inflate desired outcomes (Desimone & Le Floch, 2004; Fowler, 2002; Groves et al., 2004) suggests that actual implementation of exemplary

middle grades structures and practices may be lower than that reported in this study. Other researchers and middle grades advocates (Dickinson, 2001; McEwin et al., 2003; Valentine et al., 2002) who have examined national data have also concluded that the implementation of exemplary middle grades structures and practices is problematic and uneven.

Third, the adapted Middle Level Leadership Questionnaire (MLLQ) may provide a valid and reliable means to examine leadership behaviors of middle grades principals that are congruent with exemplary middle grades education. Although Anfara et al. (in press) tested the MLLQ with teachers and a limited number of principals, the results of the present study provided three factors and reliability for the MLLQ based exclusively on middle grades principals' responses. The results of the present study suggest that principal responses to their own leadership behaviors are more congruent with the Developmentally Responsive Middle Level Leadership (DRMLL) model proposed by Brown and Anfara (2002) than was the initial testing of the MLLQ by Anfara et al. The DRMLL model suggests three constructs underlie effective middle grades leadership: responsiveness to the developmental needs of students, responsiveness to faculty in their efforts to be developmentally responsive to students, and support of exemplary middle graded education in schools as it supports the needs of students and faculty. The present study found that the adapted MLLQ measured principal behaviors in these three constructs with construct validity and internal reliability established through acceptably high *alpha* coefficients.

Fourth, principals perceived all types of professional development in which they participated as contributing to their effectiveness. Most of the middle grades principals viewed each professional learning experience in which they participated as contributing to their effectiveness. This result confirms those of Riccardi (1999), who found that 77% of middle grades principals valued the professional development in which they had participated, and

Brown and Anfara (2002), who found middle grades principals valued professional development activities in which they participated.

Fifth, principals perceived their participation in both formal and informal professional learning experiences contributed to their own developmentally responsive middle grades leadership. The strongest relationship between professional learning experiences and developmentally responsive middle grades leadership in this study was participation. Participation in formal professional learning experiences was associated with and predicted principal behaviors related to responsiveness to the developmental needs of students. Informal professional learning experiences were associated with and predicted principal behaviors with respect to all factors of developmental responsive leadership, responsiveness to faculty, responsiveness to students, and responsiveness to exemplary middle grades education in schools.

Although there are no related studies associating principal participation in professional learning experiences with any outcome measures, Wenglinsky (2002), in a study of student achievement, found that teacher participation in professional development was associated with and predicted student achievement. The more teachers participated in professional development, the higher the achievement of students. Similarly, Joyce and Showers (2002) found that the more teachers participated in professional development the more likely they were to implement innovative practices. In the present study, participation in both formal and informal professional learning experiences was associated with and predicted elements of developmentally responsive middle grades leadership, which Brown and Anfara (2002) suggest represent an effective model of middle grades leadership.

Sixth, from the principals' perspectives, informal professional learning experiences appear to be more valuable than formal professional learning experiences. Specifically, networking

inside the school was the most consistent professional learning experience for both perceived contribution to effectiveness and association with the three factors of DRMLL, ranking in the top five in each contribution ranking and correlating with all three factors of the adapted MLLQ in the two regression analyses. In addition, studying with groups in school, being a mentor to another principal, and networking outside the school were ranked high and were associated with DRMLL. Conversely, no formal professional learning experiences were ranked in the top 10 as far as perceived contribution to effectiveness and were also correlated with any factors of DRMLL.

These findings support the teacher and limited principal professional development literature related to characteristics and activities associated with effective professional development. Effective professional development in the literature is characterized as collegial, job embedded, goal oriented, and problem centered. In addition, effective professional development occurs over time, values principals' experience, allows for principal input, and considers how adults learn best (Garet et al., 2001; Guskey, 2003; Joyce & Showers, 2002; National Staff Development Council, 2000, 2001; Neufeld, 1997; Ricciardi, 1999). The informal professional learning experienced valued and valued most by principals in this study and that were also associated with DRMLL appear to include these characteristics. When relationships between professional learning experiences and DRMLL are examined without rankings, seven of the eight experiences encompass effective professional development characteristics, with university classes being the singular exception.

Seventh, the professional development that principals perceived as effective may not, in fact, be the most effective types of professional development in terms of developmentally responsive middle grades leadership behaviors. Participation in book clubs, university classes,

membership on local committees, and membership on national committees all had low rankings by principals as far as perceived contribution to their effectiveness yet were significantly correlated with factors of DRMLL. Conversely, reading professional books, working with a consultant, attendance at district conferences and seminars, attendance at national conferences and seminars, and studying with groups outside the school were all ranked high by principals with respect to contributing and contributing most to effectiveness, yet did not correlate significantly with any of the three factors of DRMLL.

Eighth, the significant predictive relationships between formal and informal professional learning experiences and the factors of DRMLL noted in this study need to be examined in light of practical significance. At best, formal and informal professional learning experiences accounted for 18% of the variance associated with the factors of DRMLL. Certainly, the number of influences on principals' behaviors is large and may include the context of the school, teacher experience, and district and state policy mandates, to name of few. This study, however, does introduce the possibility that formal and informal professional development may have an impact, though limited, on middle grades principals' behaviors.

Implications for Principals and Policy Makers

The present study found that middle grades principals in Georgia participate in a variety of formal and informal professional learning experiences and that participation in both types of experiences is related to the Developmentally Responsive Middle Grades Leadership (DRMLL) model of leadership. It was also determined that the more professional learning experiences middle grades principals participated in, the more likely they were to engage in developmentally responsive middle grades leadership behaviors. Several implications result from these findings. First, from an individual perspective, principals should consciously avail themselves of every

professional learning opportunity available related to young adolescents or develop their own professional learning experiences to heighten their developmentally responsive leadership behaviors. In the time-strained day of a middle grades principal, this may be difficult and principals must be creative in how they participate and create opportunities to participate in professional learning experiences. Networking with other middle grades principals via the internet, creating and joining teacher study groups addressing teacher concerns, and organizing professional book clubs with middle grades principals in the same school district or geographic region are ways middle grades principals may enhance their own professional learning experiences. Second, from a policy standpoint, district, state, and federal leaders should provide increased professional development opportunities for middle grades principals directly related to middle grades education. Providing adequate time, resources, and appropriate types of professional development opportunities for middle grades principals may mean rethinking priorities and increasing allocation of professional development funding for principals.

This study also found that informal professional learning experiences were more highly valued by principals, correlated significantly with, and were more predictive of middle grades principals' leadership behaviors than formal professional learning experiences. The implication for principals is that participation in informal professional development activities, such as networking with other faculty members in the school and participating in study groups in the school, may more efficiently and effectively lead to developmentally responsive middle grades leadership behaviors than more formal types of professional learning experiences. From a policy standpoint, providing more opportunities for principals to learn about and engage in informal professional experiences in addition to providing traditional professional development for principals, such as sending principals to conferences and providing one-day district or state level

in-service opportunities, may need to be included in district priorities and goals. The professional development literature and this study point to the need to move to more informal professional development experiences that are long-term, job embedded, collegial, and related to content directly associated with issues of the school, such as exemplary middle grades education for middle grades principals. Designing professional learning experiences that rely on collegial relations and are embedded in schools may mean that superintendents and state education offices need to provide effective staff development specifically for principals to help them learn how to work collaboratively in such activities as networks and study groups within and outside their own schools.

Recommendations for Future Research

This study is the first to use the adapted MLLQ to compare professional development of middle grades principals to the Developmentally Responsive Middle Level Leadership (DRMLL) model of middle grades leadership. It is also the first to use formal and informal professional learning experiences as a framework for examining professional development. As such, this study provides much fertile ground for further research. The following recommendations are presented for consideration.

First, confirmatory factor analyses should be conducted related to the MLLQ and the adapted MLLQ on both teacher and principal data sets. Two different groups of constructs related to the MLLQ have resulted from the Anfara et al. (in press) study based on teacher data and this study based on principal data. Until confirmatory factor analyses are completed, the actual constructs and validity of those constructs cannot be confidently established.

Second, further studies need to be conducted using the PLEQ-ML or modifications of the instrument. It appears that the instrument adequately provided information relevant to principals'

professional learning experiences. Reformatting the PLEQ-ML into a 4 or 5 Likert-scaled instrument and asking principals to respond to each professional learning experience on a continuum from not contributing to significantly contributing to their effectiveness may provide additional comparisons with variables such as the factors of developmental responsiveness middle level leadership.

Third, completion of confirmatory factor analyses of the MLLQ and the adapted MLLQ, and further study of the PLEQ-ML will also provide the foundation for a replication of this study. This study was the first to examine formal and informal professional experiences of principals, developmentally responsive middle grades leadership, and the intersection of these two. According to Hough (2003), a weakness in the middle grades research is a lack of replication of studies related to the middle grades. There is a need to replicate this study to confirm or reject the conclusions made, in part or in whole.

Fourth, beyond replication of this study there is a need to complete studies to further examine middle grades principal professional development. The research related to principal professional development in general, and middle grades principal professional development in particular, is sparse. The literature related to principal professional development is generally extrapolated from teacher studies to provide criteria for effective principal professional development rather than relying on research directly related to principals.

Fifth, this study did not provide any data as to why principals participated in professional learning experience, how these experiences contributed to their perceived effectiveness, or why certain professional experiences were valued more than others. These questions require a more qualitative approach. It is recommended, therefore, that qualitative studies be conducted related

to formal and informal professional learning experiences, developmentally responsive middle grades leadership, and how these two constructs interact from the principals' perspectives.

Sixth, as an initial study comparing types of principal professional development with a model of leadership, this study spotlighted a current research issue in the principal professional development literature. In this study, what principals perceived as professional development that contributed to their effectiveness did not necessarily correlate with professional development that supported DRMLL. The current research related to principal professional development almost exclusively relies on principal perception of effective practices without any comparative standards to evaluate whether perceptions lead to any type of outcome. The implication for researchers is to find ways to compare principals' perceptions of effective professional development with some outcome measure. Possible outcomes may include models of leadership or mediating factors that have been linked to student outcomes, such as teacher self-efficacy or organizational health.

Finally, the use of formal and informal professional learning experiences is one framework in which to examine the professional development of middle grades principals. The use of this dichotomous framework has its issues, however. Some professional learning experiences, depending on the context or process of the experience, may be both a formal and an informal professional experience. Even with the inherent issues related to categorizing professional learning experiences, using the formal and informal framework may provide researchers with a mechanism to study the professional development of principals. It may also provide policy makers with a framework to make decisions about professional development that meets policy goals. In the context of middle grades schools and middle grades principal

leadership, this study also introduces a research topic and potential policy goal of formal and informal professional development—developmentally responsive middle grades leaders.

Concluding Thoughts

The concepts of formal and informal professional learning and developmentally responsive leadership are simply ways of examining the broader question of how to enhance the practices of middle grades principals. Enhancing practices inherently assumes a standard by which to judge improvement. Research related to principal leadership has struggled to connect principal practice to outcome measures or standards, and little research has been completed to examine antecedents and influences contributing to principal practice, such as professional development. The evidence that exists about principal professional development relies on participants' perceptions rather than outcome measures or standards. This study also examined principals' perceptions of their own professional development. Like the limited number of previous principal professional development studies, the findings from this investigation support the notion that principals perceive that participation in all types of professional learning experiences contribute to their effectiveness.

Unlike previous studies, however, this investigation of the professional learning experiences of principals compared professional development with a standard—developmentally responsive middle grades leadership. Developmentally responsive middle grades leadership is theorized to lead to exemplary middle grades education. Exemplary middle grades education, in turn, has been linked indirectly to positive student outcomes. The findings from this study indicate that participation in collaborative informal professional development has potentially greater interaction with principals' developmentally responsive middle grades leadership practices. This rather convoluted chain of indirect influences from professional learning

experiences of middle grades principals to student outcomes points to the complexity of principal professional development research and, perhaps, the relatively small but significant effect sizes noted in this study. This finding, that collaborative informal professional development may have a greater association with developmentally responsive middle grades principal practices than formal professional development, also supports the teacher professional development literature that indicates effective professional development is informal in nature.

As an initial study examining principal professional development with an outcome measure indirectly linked to effective practice, this investigation provides much fodder for further research. The major findings from this study also suggest policy makers consider two issues related to how they provide professional development for principals and support principal learning. First, rather than an afterthought to teacher professional development, policy makers may consider providing more professional development opportunities directly targeted toward principals. Second, providing more opportunities for principals to learn about and engage in informal professional experiences may provide greater support to principals in their efforts in becoming developmentally responsive leaders.

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APPENDIX A

ADAPTED MIDDLE LEVEL LEADERSHIP QUESTIONNAIRE

FOR OFFICE USE ONLY

MIDDLE LEVEL LEADERSHIP QUESTIONNAIRE (MLLQ)

Adapted with permission from Anfara, V. A., Roney, K., Smarkola, C., & DuCette, J. (in press). The Middle Level Leadership Questionnaire (MLLQ). Westerville, OH: National Middle School Association.

Directions: Listed below are statements that describe a variety of behaviors middle school principles may exhibit. Reflecting on your behaviors as a middle school principle please respond to each item by bubbling in the appropriate response following each statement.

1	2	3	4	5
Not at all	Once in a While	Sometimes	Fairly Often	Frequently, if not always

As the Principal of a middle school I...

	1	2	3	4	5
1. design and implement policies and procedures that reflect the needs of young adolescents.	O	O	O	O	O
2. promote the development of caring relationships between teachers, staff, and students through structures like advisory periods, etc.	O	O	O	O	O
3. provide transition programs from middle to high school for my middle school students.	O	O	O	O	O
4. provide transition programs from elementary to middle school for my middle school students	O	O	O	O	O
5. organize the curriculum around real-life concepts.	O	O	O	O	O
6. advocate for middle schools and the middle school concept in the school district.	O	O	O	O	O
7. prepare a daily schedule that includes time for team planning and meeting.	O	O	O	O	O
8. stay current on what the research says about best practices for middle schools.	O	O	O	O	O
9. group students and teachers in small learing communities.	O	O	O	O	O
10. have a vision of what an exemplary middle school is and strive to bring that vision to life.	O	O	O	O	O

1 Not at all	2 Once in a While	3 Sometimes	4 Fairly Often	5 Frequently, if not always
11. provide curricular materials that enhance young adolescents' acceptance of self and others and that enable them to accept differences and similarities among people.				1 2 3 4 5
12. provide adequate counseling/advisory opportunities.				1 2 3 4 5
13. demonstrate an understanding of the intellectual, physical, physiological, and social characteristics of young adolescents.				1 2 3 4 5
14. demonstrate an understanding of the relationship between the cognitive and affective needs of young adolescents.				1 2 3 4 5
15. spend time each day with students.				1 2 3 4 5
16. provide students with opportunities to explore a rich variety of topics in order to develop their identity and demonstrate their competence.				1 2 3 4 5
17. develop connections with and involves families in the education of their children.				1 2 3 4 5
18. provide age-appropriate co-curricular (or extra-curricular) activites.				1 2 3 4 5
19. provide students with opportunities to explore, make mistakes, and grow in a safe, caring environment .				1 2 3 4 5
20. encourage mature value systems by providing opportunities for students to examine options of behavior and to study consequences of various actions.				1 2 3 4 5
21. regard young adolescents as resources in planning and program development and involve them in meaningful roles.				1 2 3 4 5
22. make decisions based on young adolescent development and effective middle-level practices.				1 2 3 4 5
23. allow teachers and students to plan activities that integrate genders.				1 2 3 4 5
24. provide time for general education teachers to collaborate with special education teachers in order to meet the diverse needs of young adolescents.				1 2 3 4 5

1 Not at all	2 Once in a While	3 Sometimes	4 Fairly Often	5 Frequently, if not always
25. encourage teachers to modify time, grouping, and instructional strategies to help individual students achieve mastery of subject matter.			1 2 3 4 5 O O O O O	
26. encourage teachers in their efforts to respond to the needs of young adolescents.			1 2 3 4 5 O O O O O	
27. encorage teachers in their use of a wide variety of instructional approaches and materials.			1 2 3 4 5 O O O O O	
28. encourage active discovery learning on the part of students rather than teacher lectures.			1 2 3 4 5 O O O O O	
29. encourage activities such as special-interest classes and hands-on learning.			1 2 3 4 5 O O O O O	
30. create opportunities for professional development of teacher/staff that address strategies for meeting the need of young adolescents.			1 2 3 4 5 O O O O O	
31. support appropriate instructional strategies with the necessary resources (i.e., money, time needed, etc.)			1 2 3 4 5 O O O O O	
32. encourage teachers to make connections across disciplines to reinforce important concepts.			1 2 3 4 5 O O O O O	
33. require teachers to provide classroom activities that address the needs of academically diverse learners who vary greatly in readiness, interests, and learning profile.			1 2 3 4 5 O O O O O	

Directions: Please mark each of the middle school components that are implemented in your school to an extent that you would invite others to observe them in action.

O Exploratory Curriculm

O Varied Teaching and Learning Approaches

O Flexible Scheduling

O Democratic Governance of the School (with teachers, parents, community members)

O Programs that Promote Good Health, Wellness, and Safety

O Team Teaching

O Advisory Programs

O Involvment of Families and Communities

APPENDIX B:

PRINCIPAL PROFESSIONAL LEARNING EXPERIENCES QUESTIONNAIRE-MIDDLE LEVEL

The National Middle School Association and other organizations that advocate for the educational needs of young adolescents, ages 10-15, suggest specific structures and practices for middle level schools. Advocates suggest these structures and practices are developmentally appropriate and best serve middle level students academically, socially, and emotionally.

The following is a list of professional learning experiences that may contribute to a principal's understanding of the unique nature of middle level education and the principal's role in facilitating these structures and practices.

Please complete the following three tasks:

1. First, in column #1 indicate whether, as a professional educator, you **have participated in** the learning experiences listed by checking either the yes or no box for each experience.

2. Second, in column #2 indicate the professional learning experiences in which you **have participated that have contributed** to your effectiveness as a middle level principal in facilitating the structures and practices of middle level education by checking either the yes or no box for each experience.

3. Third, in column #3, indicate the **THREE** professional learning experiences in which you have participated that have **contributed MOST** to your effectiveness as a middle level principal in facilitating the structures and practices of middle level education by checking three boxes.

Professional Learning Experiences

Column #1 Participated In		Column #2 Contributed to Effectivness		Column #3 Three that Contributed Most to Effectivness	
Yes	No	Yes	No	Mark only Three	
O	O	O	O	O	1. University Classes focusing on middle level education
O	O	O	O	O	2. In-service classes offered through your school focusing on middle level education that could be taken for job or pay advancements, or additional endorsements or certifications
O	O	O	O	O	3. In-service classes offered through your county/district focusing on middle level education that could be taken for job or pay advancements, or additional endorsements or certifications
O	O	O	O	O	4. Conferences/seminars offered through county/district or state agencies focusing on middle level education
O	O	O	O	O	5. Conferences/seminars offered through national agencies or organizations focusing on middle level education
O	O	O	O	O	6. Participation in formal leadership positions in a professional organization focusing on middle level education
O	O	O	O	O	7. Membership on a local committee that was directly related to middle level education
O	O	O	O	O	8. Membership on a state or national committee that was directly related to middle level education
O	O	O	O	O	9. Participation with a consultant from outside the school that addressed middle level education issues
O	O	O	O	O	10. Participation in book clubs focusing on middle level education
O	O	O	O	O	11. Professional books read focusing on middle level education as part of personal study
O	O	O	O	O	12. Articles read from professional journals focusing on middle level education as part of personal study
O	O	O	O	O	13. Reflection on middle level education through personal writing, such as journaling, reports, or formal articles.
O	O	O	O	O	14. Professional study groups within the middle school
O	O	O	O	O	15. Professional study groups focusing on middle level education with other principals or educators outside the school
O	O	O	O	O	16. Regularly scheduled networking meetings with educators within the school, such as teams, departments, or grade level meetings, focusing on middle level education issues
O	O	O	O	O	17. Regularly scheduled networking meetings with principals or other educators outside the school focusing on middle level education
O	O	O	O	O	18. Mentor to another middle level principal
O	O	O	O	O	19. Being monitored by another middle level principal
				O	20. other
				O	21. other
				O	22. other

Please write only in boxes

DEMOGRAPHICS:

Age: O 21-35 O 36-46 O 47-57 O 58+

Gender: O Male O Female

Race:
O White
O Black
O Hispanic
O Asian/Pacific Islander
O American Indian or Alaskan Eskimo
O Other

Percent of students receiving free/reduced lunch at your school: ☐

Type of community in which your school is located: O Rural O Suburban O Urban

Yes	No	**FORMAL PREPARATION AS A MIDDLE LEVEL EDUCATOR**
O	O	Undergraduate degree in middle level education
O	O	Endorsement/certification in middle level education
O	O	Master's degree in middle level education
O	O	Specialist's degree in middle level education
O	O	Doctorate in middle level education
O	O	Administrative endorsement/certificate specifically in middle level education

Other (Specify) ☐

Years of teaching before becoming a principal: ☐☐

Years of teaching at the middle level: ☐☐

Years of being a middle level assistant principal: ☐☐

Years of being a principal: ☐☐

Years of being a middle level principal: ☐☐

Years as principal at this school: ☐☐

Would you be willing to be interviewed, at your school or some other convenient place, concerning learning experiences that have contributed to your effectiveness as a middle school principal? These interviews would last from 30 to 45 minutes.

Yes, I am willing to be interviewed: O

No thanks: O

If yes, please enter your email address in the box below

☐

For Office Use Only

☐☐☐

APPENDIX C:

ORIGINAL MIDDLE LEVEL LEADERSHIP QUESTIONNAIRE FACTORS

Factor #1: Developmentally Appropriate Learning Environment/Support of Teachers

The developmentally responsive middle level principal helps teachers in the creation of a learning environment that addresses students' affective and cognitive needs. This includes encouraging teachers to provide students with opportunities to explore, make mistakes, and grow in a safe, caring environment, encouraging active, discovery learning and offering special interests classes.

Factor #2: Best Practices

The developmentally responsive middle level principal understands the middle school philosophy and implements it though best practices like advisory and transition programs as well as varied instructional approaches.

Factor #3: Developmentally Appropriate Learning Environment/Support of Student Needs

The developmentally responsive middle level principal makes decisions based in the needs of young adolescents and supports students by providing opportunities to examine options of behaviors and their intendant [sic] consequences.

Factor #4: Promotes Student Self-Confidence and Competence

The developmentally responsive middle level principal supports students in making connections to achieve self-confidence and competence through spending time with students; allowing them to explore topics and demonstrate competence; and viewing students as important participants in planning and program development.

Factor #5: Responsiveness to Student needs/Support of Teachers

The developmentally responsive middle level principal provides teachers with time for planning and encourages modifications of time, grouping, and instructional strategies to meet student needs.

APPENDIX D:

PROCEDURES USED IN MAILING INSTRUMENTS

Simply stating that the two surveys in this study were mailed to middle grades principals is a simplistic description of the process used to obtain responses. The process actually began with the researcher soliciting the help of the Georgia Survey Research Center (GSRC) four months before the surveys were mailed to participants. Soon after the initial contact with the GSRC, the researcher contracted with the Center for five services[1]. The GSRC printed the two surveys, the Adapted Middle Level Leadership Questionnaire and the Professional Learning Experiences Questionnaire, in a format that could be scanned. Scanning the questionnaire would yield a faster turn around time for analysis and would decrease errors related to data entry. Second, the GSRC researched the names and email addresses of each principal, and the addresses and phone numbers for each principal's school. Third, the GSRC mailed the questionnaires from the Center using a tracking number. This tracking number meant that the researcher could follow-up with non-respondents while still maintaining anonymity of the participants. Fourth, questionnaires were mailed back to the GSRC, where personnel at the GSRC entered data into the data analysis software. Finally, the GSRC provided technical support for the researchers' analyses of the data.

While contracting with the GSRC the researcher, on the advice of a member of the dissertation committee, also contacted three large county school districts that required written permission to complete research in those counties. The process at each of these districts was arduous. Each county's application process required completion of a 3 to 5- page form and a detailed written description of the research to be completed. The written description was either the complete dissertation prospectus, or an equivalent description outlining the research. Anywhere between three to seven copies of the form and detailed written description were sent

[1] Thanks to the members of the researcher's dissertation committee for their help in obtaining the Graduate School's Dean Award that helped defray the costs associated with contracting with the GSRC.

or delivered to each county office. Approval to initiate the research in the counties took between 3 to 5 weeks depending on when the approval committee met.

After permission was obtained and surveys were sent to middle grades principals and returned to the GSRC, one additional county contacted the researcher stating that permission needed to be obtained prior to initiating research in the county. As the responses were anonymous it was impossible to delete the data obtained from the principals from this district. The researcher sent an email to this district explaining the situation. No response was received from this county.

APPENDIX E:

IMPLIED CONSENT

Dear Colleague,

As a doctoral student in the Middle School Education Program at University of Georgia I am interested in middle level principal leadership and how middle level principals learn to apply middle level concepts in their schools. I value your experience as a middle level principal. I hope you will take a few minutes to provide me with your views and comments on the attached survey. Your perspectives would be very helpful.

This information will be used in two important ways. First, your experiences and ideas will be used to address an important gap in the current leadership literature—research related to the unique nature of the middle level principalship. Second, your responses could provide a basis for construction of professional development that will meet the unique needs of middle level principals.

In order that you can answer freely, these surveys are confidential. No names are on the surveys, and no information will be released to schools, school systems, or other researchers in any form that could potentially identify specific individuals. Surveys will be coded, by number, to allow me to follow-up with nonrespondents. I will follow-up three times to encourage participation. You may return a blank survey to indicate you do not wish to participate.

I would like to interview a few middle level principals about the learning experiences related to middle level education. If you are willing to participating in an interview there will be a place on the survey for you to indicate your interest.

The survey should take approximately 30 minutes to complete. When you are finished filling out the survey, place it in the lettersized self-addressed stamped envelope and place it in the US mail by **March 5, 2005.** Keep this cover letter in case you have questions later.

Returning the survey constitutes your consent to participate in this data collection effort. Again, we would very much appreciate your insights and thoughts.

Thank you.

Dana L. Bickmore
Doctoral Student University of Georgia
706-549-6564 (Home)
706-542-4244 (Middle School Program, University of Georgia)
danabick@uga.edu

APPENDIX F

OPEN-ENDED PRINCIPAL RESPONSES TO FORMAL PREPARATION

Open-ended Principal Responses to Formal Preparation

1. Masters, Specialist's, Doctorate in Ed. Leadership, Adult/Career Education Doctorate in Leadership in Education
2. EDS in ED Leadership
3. Doctorate in Education Administration
4. Ed. S level of coursework in middle grades ed.
5. Ed. Leadership Doctorate
6. EdS in ADM./Supv.
7. Leadership Add on to Ed.s K-12
8. L7 - K-12 Leadership and Supervision
9. Doctorate Educational Administration
10. MED-leadership K-12 plus 32 hrs.
11. Counseling
12. Doctorate in Leadership in Education
13. All of my certificates are P - 12 (That includes middle school)
14. Undergrad-Secondary math, grad-secondary, grad + specialist - k-12 Admin. And Supervision
15. B.A. in music Ed. K-12/ M.A. in Music Pref./Eds Leadership
16. Educational Leadership
17. Doctorate of Education Administration and Supervision
18. Admin endorse - not specific to MS
19. MS and EDS in Ed Leadership
20. Specialist in ECE and Admin.
21. Doctorate in Education Leadership
22. L-5 Leadership certificate in K-12
23. Ed. Leadership - Specialist's Degree
24. Specialist in Leadership
25. L-G Leadership
26. Certification in 4-8 teaching, K-12 Counseling
27. Admin - Specialist's
28. Reading Specialist K-12
29. L-Certification 6-12 Business Edu.
30. l-7 Certificate
31. Health and PE 7-12 Spec. Ed. Admin. Currently working on DR.
32. PhD- Educational Supervision
33. K-12 Administration and supervision
34. Specialist Ed. Leadership, Admin/Supervision
35. Ed. Leadership through UGA
36. Undergraduate Degree in Elementary Ed, M.Ed. In Administration and Supervision
37. BS Hth & PE, med & EdS Administration
38. Ed.D. Ed Leadership 21 yrs Adm exp @ middle level
39. L-7 K-12 Leadership
40. MA in Literacy, Specialist in Administration