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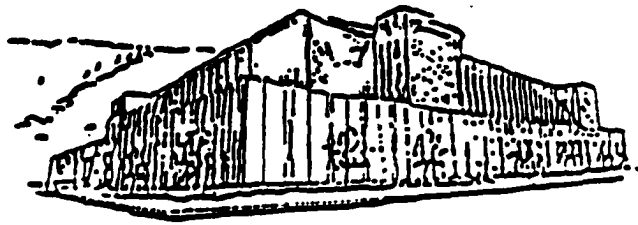
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Presidential Award Winners in Mathematics

at the Secondary Level:

Classroom Management Beliefs and Career Stages

By

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Presented in partial fulfillment of the requirements

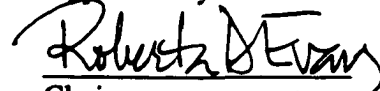
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1999

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Presidential Award Winners in Mathematics at the Secondary Level: Classroom Management Beliefs and Career Stages

Adviser: Roberta D. Evans Ed.D.



This mixed-methodology study examined the classroom management beliefs and career stages of the 1999 Presidential Awards for Excellence in Mathematics and Science (PAEMST) awardees in secondary mathematics. The Attitudes and Beliefs of Classroom Control (ABCC) Inventory (Martin, Yin & Baldwin, 1998) was used to identify classroom management beliefs in the three dimensions of classroom control: people management, behavior management, and instructional management. Sherman and Webb's Career Stages model (1989) was used to determine career stages of the respondents. The return rate was 74% for the survey of the fifty-four awardees in secondary mathematics.

The ABCC Inventory (Martin, Yin & Baldwin, 1998) established that the awardees were strongly interactionalist in their attitudes and beliefs regarding classroom control in all three dimensions. The predominant career stage identified for the awardees was Stage 4. A Grounded Theory analysis of comments from the survey using open coding, axial coding and selective coding further reinforced the conclusion that the PAEMST awardees for secondary mathematics hold interactionalist beliefs in the three dimensions of classroom control.

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CHAPTER ONE

Introduction

The Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) are given each year to four teachers in each state and U.S. jurisdiction. One mathematics teacher and one science teacher at both the secondary and the elementary levels, receive the states' awards. Since its inception in 1983, the PAEMST program has recognized over 2000 teachers. The National Science Foundation administers the program for the White House.

Teachers of mathematics or science, in either public or private schools, employed at least half time and with at least five years experience are eligible for participation. The following criteria are used to evaluate the applicants:

1. subject-matter competence;
2. sustained professional growth in science or mathematics and the art of teaching;
3. an understanding of how students learn science or mathematics;
4. ability to engage students through a variety of teaching strategies;
5. ability to foster curiosity and to generate excitement about the uses of science and mathematics;
6. a conviction that all students can learn science and mathematics and a sensitivity to the needs of all students' cultural, linguistic, learning, and social uniqueness;
7. and experimental and innovative attitude in their approach to teaching; and
8. professional involvement and leadership (National Science Foundation (NSF), 1998).

The teachers selected for these awards undergo a rigorous selection process. Applicants complete an extensive application form and provide an example of a lesson

demonstrating their creativity in teaching. Letters of recommendation from administrators, peers, and students are included in the application. The application is then sent to the State Department of Public Instruction where three semi-finalists are selected in each of the areas of science and mathematics at both the elementary and secondary level. The semi-finalist applications from each state are then sent to the National Science Foundation in Arlington, Virginia, where a committee composed of prominent scientists, mathematicians, past awardees, personnel from the Department of Education, and school administrators screen applications. Each state and U.S. jurisdiction has one winner selected in each of the four categories: elementary mathematics, elementary science, secondary mathematics, and secondary science (NSF, 1998). The intent of the PAEMST program is to identify the finest teachers in each state and territory of United States and recognize them for their excellence in math and science teaching. The National Science Foundation's intent is for the awardees to "serve as models for their colleagues and leaders in the improvement of science and mathematics" (NSF, 1998).

A number of studies have documented the importance of teachers' personal and classroom attributes as they affect learner behaviors within the classroom. Caine and Caine (1994) emphasized that the brain does not separate emotions from cognition either anatomically or perceptually. Learning takes place when students value the activity only to the extent that they see it as meaningful to them. Glasser (1998) pointed out that an activity is meaningful to students when it satisfies an emotional need. Glasser (1998) maintains that if teachers use effective one-on-one relationship building skills, students

are more likely to engage in learning. Student motivation is enhanced when they perceive teachers demonstrate caring and treat them as individuals (Rogers & Renard, 1999).

Purpose of the Study

Since the PAEMST selection process does not focus on the interpersonal attitudes and beliefs of student-teacher interaction, it was important to determine whether PAEMST teachers possess the requisite interpersonal beliefs and attitudes for effective teaching. PAEMST teachers have been identified as excellent teachers through the process of being selected as Presidential Award winners. The National Science Foundation's claim that PAEMST teachers are leaders in the improvement of mathematics and science education gives them a critical professional development role for current teachers and a role in the development of the cadre of future teachers. The purpose of this study was to determine whether PAEMST awardees possess the interpersonal beliefs inherent in effective teachers as defined in seminal and contemporary educational literature.

Research Questions and Hypotheses

The central research questions of this investigation were: a. Does the selection process designed by the National Science Foundation, which focuses on subject matter knowledge, creativity and continuing education, inherently also select those teachers who have those classroom management styles found to maximize student learning? b. What is the predominant career stage of PAEMST award winners?

Teachers' attitudes and beliefs regarding classroom management were examined using a survey designed by Martin, Yin and Baldwin (1998), The Attitudes and Beliefs on Classroom Control Inventory. This survey examined at a broad range of classroom

management behaviors, including instructional management, behavior management, and people management. Teacher scores were placed on a continuum from interventionist (most controlling) to non-interventionist (least controlling). Interactionalist thinking (empowering) teachers score between the two extremes.

A narrative was part of the survey to ascertain such demographic information as the career stage of each of the respondents. Questions determined the respondents' number of years in teaching, education level, gender, and age group.

The research hypotheses were as follows:

H_1 PAEMST award winners in secondary mathematics will demonstrate interactionalist instructional management attitudes and beliefs.

H_2 PAEMST award winners in secondary mathematics will demonstrate interactionalist behavioral management attitudes and beliefs

H_3 PAEMST award winners in secondary mathematics will demonstrate interactionalist people management attitudes and beliefs.

H_4 PAEMST award winners will largely be career stage 3 teachers as described by educational sociologists Webb and Sherman in their seminal model of career stages (1989).

Definitions of Terms

For purposes of this study, the following definitions are used:

Attitude. According to Fishbein and Ajzen, attitude is a “learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (as cited in Hendrickx, 1998, p.6).

Attribute. A hypothetical construct used by theorists to explain observable behaviors (Peterson and Seligman, 1984).

Attributional style. Factors people attribute to their failures and successes and their explanations regarding outside interference (Seligman, 1990).

Authentic. Curricula that present content with the entire real, rich, complex ideas and materials that are necessary for complete understanding (Zemelman, Daniels & Hyde, 1998).

Behavior management. Management techniques used by the teachers, which focus on pre-planned standards of student behaviors and strategies for enforcement of those behaviors (Martin and Baldwin, 1996).

Beliefs. The socially constructed representational systems used by people to interpret and act upon the world (Sigel, 1985).

Career Stages. Career patterns in a profession influenced by organizational structures and aging (Webb & Sherman, 1989).

Career Stage 3. This career stage of teachers most commonly occurs between the ages of thirty-three and forty-four. During this stage teachers typically possess a high degree of energy and commitment. Pride in their professional accomplishments and the pursuit of advanced degrees are common (Webb & Sherman, 1989).

Career Stage 4. This career stage of teachers most commonly occurs between the ages of forty-one and fifty-five. For men this stage is means coming to terms with the fact they are not going to advance beyond the classroom. They begin to place emphasis on themselves, their homes and families. Women in this stage often make a renewed

commitment to teaching and are often anxious to demonstrate their abilities (Webb & Sherman, 1989).

Classroom management. Classroom management is a complex process that includes three broad dimensions; person, instruction, and behavior management (Martin & Baldwin, 1996).

Classroom Management Styles. Refers to the most common behaviors of teachers in managing people, instruction and behavior on a continuum from non-interventionist (least controlling) to interventionist (most controlling) (Martin, Yin & Baldwin, 1998).

Efficacy. “Refers to one’s beliefs rather than to observable behavior (Coladarci, 1992).

Explanatory style. “... The manner in which you habitually explain to yourself why events happen” (Seligman, 1990, p.15).

Instructional management. The management techniques used by a teacher to enable students to learn including; use of time, establishment and maintenance of classroom routines, and physical room arrangements (Martin & Baldwin, 1996).

Interactionalist. Teachers in this category understand that children can only be taught effectively through the teacher’s understanding and addressing the child’s total environment (Wolfgang & Glickman, 1986).

Interventionist. Teachers in this category are the most controlling. They use strategies such a behavior modification and assertive discipline to manage their classrooms (Wolfgang & Glickman, 1986).

Non-Interventionist. Teachers who are least controlling are in this category.

Transactional analysis and Gordon’s Teacher Effectiveness Training are two examples of classroom management strategies used by these teachers (Wolfgang & Glickman, 1986).

People management. Teacher management strategies used to develop the teacher-student relationship demonstrating what teachers believe about students as persons and what they do to enable students to develop as individuals (Martin & Baldwin, 1996).

Delimitations of the Study

This study of the attributes of attitudes and beliefs of teacher management was confined to Presidential Award Winners at the secondary level in mathematics for 1999. Avowed experts have externally reviewed the PAEMST awardees through a system of benchmarks nationally. The criteria for the award vary from year to year, as does the membership of the selection committee. This sample represented the 1999 awardees, a subset of the over 2000 Presidential Award Winners in mathematics and science. Since the subjects of the sample in this study are all PAEMST winners in secondary mathematics, the study is not generalizable to all teachers, nor to teachers recognized for excellence in teaching other subjects.

Significance of the Study

The National Science Foundation, at the request of the President of the United States, has been charged with identifying excellent teachers of science and mathematics. The process they have adopted to make these identifications examines several of the major attributes of good teachers (National Science Foundation, 1998). However, minimal attention has been devoted to the attributes of classroom management these teachers possess. If PAEMST award winners are to serve as model teachers and leaders in curriculum development, it was vital that they be investigated to ascertain whether they genuinely embody a critical mass of the attributes of what is known about excellence in teaching.

Summary

Yerkes (1999) found that the state of mind of the teacher does impact learners by the manner in which they explain events in the world and decisions they make. The relationship between attributional style and classroom management beliefs demonstrates that teachers who are optimistic react differently toward students in the classroom. The Presidential Awards for Excellence in Mathematics and Science Teaching avows to select teachers who should serve as leaders in the improvement of mathematics and science education. These teachers should possess an interactionalist style of classroom management at each of the three dimensions of Martin Yin and Baldwin's (1998) survey, people management, instructional management and behavior management. Since the selection process does not directly address these criteria, it is important to know whether the PAEMST award winners possess these attributes.

CHAPTER TWO

Review of Related Literature

The basis in theory for this study revolves around the concept that what is known about “best practices” in education today is most effectively delivered by a teacher who is interactionalist in nature. The study examined the classroom management styles and career stages of PAEMST award winners in secondary mathematics. The first section of this review of related literature examines what is known about “best practices” in education today. The second section examines the variety of management styles used in classrooms and their philosophical underpinning. The third section of this review of related literature explores the research related to credentials, competence and educational achievement. The fourth section of the review of related literature examines career stage literature pertaining to teachers. Finally, the results of a study of elementary PAEMST teachers are reported in the literature review.

“Best Practices” Research

Recent innovations in curriculum standards in a wide variety of subjects taught in secondary schools in the United States have resulted in a rarely recognized consensus on the part of educators. Reading, writing, mathematics, and science curriculum standards have many of the elements of “best practice” education, including progressive, developmentally appropriate research-based curricula. The following thirteen elements are common to most of the emerging standards for education (Zemelman, Daniels & Hyde, 1998):

1. **Student centered – Student centered education, which focuses on a student’s knowledge base and interests, is incorporated in the curriculum as well as all of the skills, knowledge and concepts expected of schooling. Teachers use their knowledge of the child’s developmental characteristics to develop instruction which students see a relevant to them (Zemelman, Daniels & Hyde, 1998; National Council of Teachers of English (NCTE), 1996; National Association of Secondary School Principals (NASSP), 1996; National Council of Teachers of Mathematics (NCTM), 1989).**
2. **Experiential - Newly developed curriculum standards emphasize the value of experiential education for children. Students learn best by becoming deeply involved with concepts to develop a better understanding of the concept and it’s implications through simulated or direct interaction (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).**
3. **Holistic - Traditionally, curricula has been presented to children in small blocks which are intended to result in a construct of the knowledge base being taught. Often students find this fragmented curriculum meaningless. A holistic approach provides students with an encounter with whole ideas presented in a meaningful context (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).**
4. **Authentic - New curricular standards emphasize the need to present students with curricular materials, which present the knowledge base in all of its complexity. Students have the ability to handle complexity and simplifying the concepts often**

- makes the learning worthless (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).
5. **Expressive** - Traditionally, schools have used the model of the student as a receptacle for knowledge provided by the teacher. It is clear that learning does not work best this way. Students must be engaged in the learning process and be allowed to interact with others to express the ideas they are learning in a wide variety of ways (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).
 6. **Reflective** - Reflecting on a learning experience is valuable for students. Time provided for this process is often accomplished by asking students to keep a log of their reflections on the learning process. When given the opportunity to reflect on the strategies they used and the success or failure of the experience for them they often become more proficient learners (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).
 7. **Social** - Students seek social interaction. Using this need of students in instruction is valuable to help them learn. Schools are overcoming the tradition of isolation and silence in the classroom. The social interaction provides support for students as they construct their knowledge base (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).
 8. **Collaborative** - Students learn best with others. Schools are working to develop a more cooperative learning climate to replace the competitive model that has existed to date. Collaboration results in a better learning environment and

- provides a valuable life-skill (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).
9. **Democratic** - In democratic school and classroom environments, students are participants who have ownership in the process. Choice is essential for students in the learning environment. Teachers need to help students make intelligent choices regarding their own behavior and learning whenever possible. Doing so helps students become more effective learners and life-long learners (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).
 10. **Cognitive** - Higher order thinking skills are receiving more attention as teachers begin to understand that meaningful learning requires the opportunity to think deeply about the curricula of the school. Efforts to help students develop skills in metacognition provide them with the skills to monitor their own thinking and learning (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).
 11. **Developmental** - New curricula take into account the developmental level of students. The National Council of Teachers of Mathematics (1989, p.9) has recognized that not all students are alike. On the other hand, it recognizes that all students should have the opportunity to learn the important ideas of mathematics. Developmentally appropriate education means that instruction is geared to the developmental level of the student (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).
 12. **Constructivist** - All curricula standards recognize that students are not simply passive recipients of knowledge. Students integrate learning into their past

experiences with the result of a new construct of understanding the curricula and how it relates to their own reality. This reinvention of the students cognitive system occurs in every content area (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).

13. **Challenging - Best Practices** teachers challenge students to take responsibility for their own learning. The curriculum is demanding and the expectations are high. Students learn best when given genuine challenges and have choices and the responsibility for their own performance (Zemelman, Daniels & Hyde, 1998; NCTE, 1996; NASSP, 1996; NCTM, 1989).

Teacher Behavior Continuum

Wolfgang and Glickman (1986) documented the philosophies of teachers regarding children and learning. Three major schools of thought regarding classroom management emerged from their studies: interventionist, non-interventionist, and interactionist. Each of these schools of thought has their roots in psychology and learning theory. Wolfgang and Glickman (1986) view them on a continuum with interventionist and non-interventionist as the extremes and interactionist in the center. An individual teacher may display attributes of all three philosophies in various situations, but one philosophy will predominate.

Non-Interventionists share a belief in the inner person. Their beliefs are congruent with the humanistic and psychoanalytical thought of people like Carl Rogers and Sigmund Freud. Non-interventionists believe that every child has an inner rationality that is constantly striving to improve. Teachers who hold the non-interventionist

philosophy believe that outward behavior should not be their focus, but rather the inner emotions and feelings require attention (Wolfgang & Glickman, 1986).

Interventionists believe that external forces shape students. They do not believe in the inner person. Observable behavior is the only necessary information to understand the social growth of individuals. They believe that changes in student behavior come solely through changes in external conditions. B.F. Skinner's behavioristic theory serves as the intellectual foundation for Interventionists (Wolfgang & Glickman, 1986).

Interactionalists are practitioners of social, Gestalt and Developmental psychologies. They believe that the child must be understood in terms of the interrelationships of the parts of the total environment. Internal and external growth is the result of a constant interplay between the child and society (Wolfgang & Glickman, 1986). As cognitive developmentalist Jerome Bruner (1997), stated:

One finds no internal push to growth without a corresponding external pull, for, given the nature of man as a species, growth is as dependent upon a link with external amplifiers of man's powers as it is upon those powers themselves. (p.78)

Alfred Adler supported the interactionalist philosophy with his emphasis on the interrelationship between the individual and the group (Wolfgang & Glickman, 1986).

The Teacher Behavior Continuum (TBC) provides a convenient way to understand a teacher's behavior in the context of the classroom. The Attitudes and Beliefs of Classroom Control (ABCC) Inventory developed by Martin, Yin and Baldwin (1998) is designed to help place teachers on the TBC continuum.

Using the ABCC Inventory, researchers have discovered several relationships between groups of teachers. Larger class sizes result in more interventionist behavior on the part of the teacher (Martin, Yin & Baldwin, 1998). Novice teachers with 0 to 3 years of experience scored more interventionist than veteran teachers (Martin & Baldwin, 1993). Secondary teachers hold a more interventionist philosophy than elementary teachers do (Martin, Yin & Baldwin, 1998).

The Teacher Behavior Continuum and Best Practices

When the three models of classroom management on the TBC (Wolfgang & Glickman, 1986) are examined to determine best fit with “best practices” (Zemelman, Daniels & Hyde, 1998), the interactionist philosophy emerges as the most congruent classroom management philosophy. A holistic view of the child and learning is vital to provide a “best practices” education. Only the interactionist philosophy provides this management outlook.

Student-centered thinking is natural for the non-interventionist and interactionist teacher. Teachers with either philosophy pay attention to the student’s interests and knowledge base. The interventionist teacher does not place a high priority on student interests (Wolfgang & Glickman, 1986).

Experiential, holistic and authentic curriculum is of interest for teachers across the TBC. Using Wolfgang and Glickman’s (1986) definitions on the TBC interventionists, interactionists and non-interventions would all use these elements in instructional planning.

The interventionist teacher would pay little attention for students’ need for opportunities to be engaged in the learning process. They view the student as a receptacle

for the knowledge the teacher provides. Both interactionalist and non-interventionist teachers consider the need for students to be involved and interact with others and the curriculum (Wolfgang & Glickman, 1986).

Both interactionalist and non-interventionist teaching styles would be certain to provide opportunities for students to reflect on learning and interact socially with other students in a collaborative manner. They are also inclined to provide a democratic atmosphere in the classroom. The interventionist teacher would be more likely to consider these opportunities as unnecessary since the inner needs of the child are secondary to the curriculum (Wolfgang & Glickman, 1986).

Non-interventionist teachers are likely to spend less time planning a carefully-organized learning experience for students. Interventionist and interactionalist teachers have a tendency to provide a highly structured environment for students which pays attention to teaching higher order thinking skills using a developmentally appropriate and challenging curriculum (Wolfgang & Glickman, 1986; Zemelman, Daniels & Hyde, 1998).

Interventionist teachers do not attend to the inner needs of the child, but rather attend to the external stimuli of the classroom. Non-interventionist teachers attend to the inner needs of the child but pay less attention to the external stimuli vital to provide the holistic and well-organized instruction vital to “best practices.” Interactionalist teachers attend to both the needs of the inner child and provide the effective external stimuli important to “best practices” (Wolfgang & Glickman, 1986).

Credentials and Competence

Awards such as the PAEMST are designed to reward teachers who have been identified as excellent teachers by the standards of the PAEMST. The PAEMST award provides a credential, which claims to ascribe competence to the awardee. According to UCLA sociologist Gabriel Rossman (1996), there is a strong relationship between education, income, and prestige. He points out that education is the principal foundation for later life and education provides competence and credentials for professionals such as teachers. In Western society, the credentials earned through education are used to qualify for desirable careers. The correlation between a father's education and his son's education is above 0.2 (Hauser & Featherman, 1997). There's even higher correlation between parents' educational attainment and the child's expectations for his or her own education (Rossman, 1996).

Rossman (1996) determined that the parents' educational levels largely shape educational aspirations and achievements and a love of learning that is correlated with number of books in the home. While love of learning does motivate students to seek advanced degrees, it does little to provide competency. The lust for credentials provides competency, but does not inspire learning as an end in itself (Rossman, 1996).

Once teachers have achieved the credentials to teach, it appears that they lose interest in career ladders and merit pay (Matthes & Tollerud, 1990). In general, teachers are less interested in autonomy and achievement than other professionals. Women teachers, especially, tend to seek attachment, intimacy, and collaboration in school (Gilligan, 1982). A school environment that promotes self-efficacy and effectiveness is

motivating to teachers (Sykes, 1983). Teachers remain skeptical that competition between them will improve teaching (Matthes & Tollerud, 1990).

Life View and Career Choice

While the life view of PAEMST awardees has not been researched, studies have been conducted to explore the life view of other workers. Many people have a linear view of life. These individuals view life as progressing steadily upward through hard work and perseverance. They believe that good works bring success and happiness; they are not prepared for the unexpected events, which may interfere with life plans (Sandra, 1995). When making career choices, Sandra (1995) found that 40% of youth studied turned to family or friends first. Thirty-seven percent sought advice from counselors, and only 30% had discussed career choices with school or college counselors. Only 36% had made a conscious career choice or plan.

Teachers work in an environment devoid of career ladders. Pay is frequently independent of performance, but rather it depends most often upon longevity and education. At the same time, there is great pressure on schools and the teachers within them to reform. The result has often been exhaustion and cynicism, with burnout a common phenomenon (Faber & Ascher, 1991).

Teacher Motivation

While researchers have conducted few studies to determine what motivates teachers to apply for awards, a significant amount of effort has been expended to determine the factors that motivate teachers to stay in the profession and make the required commitment to serving children. Several constructs are significant in

maintenance of teacher motivation locus of control (internal vs. external), outcome expectation, stress level, and response to failure (Czubaj, 1996).

Parkay, Olenik, and Proller (1988) found that teachers who felt that they were in control of their lives and classrooms, in other words, had an internal locus of control, felt less stress, scored higher on teacher evaluations, and had students who scored higher on achievement tests than teachers who had an external locus of control. Teachers with an internal locus of control tend to engage in self-reflection and analysis. They make carefully considered choices about instruction based upon the needs of students and assume responsibility for the curriculum (Darling-Hammond & Goodwin, 1993). Teachers with an external locus of control, who feel that events are beyond their control, experience more anxiety, neurotic symptoms, and self-punitiveness (Czubaj, 1996).

Efficacy, as defined by Coladarci (1992), refers to “one’s beliefs rather than to observable behavior.” He demonstrated that human behavior is influenced by the individual’s beliefs regarding two classes of expectations. First, outcome expectations refer to “a person’s estimate that a given behavior will lead to certain outcomes.” Generally, efficacy outcome expectation refers to “the conviction that one can successfully execute the behavior required to produce the outcome.” Coladarci (1992) found that teachers who had higher efficacy had students who achieved better than did the students of teachers with low efficacy. Efficacy was higher among elementary teachers than secondary teachers. Teachers with graduate school experience had higher outcome efficacy than did those without. Moreover, a positive correlation was found between teacher’s high efficacy and their maintaining collegial interaction concerning instructional matters.

Coladarci (1992) defined commitment to the teaching profession as the “teacher’s psychological attachment to the teaching profession.” He found that most teachers without commitment left the profession within five years. Attrition was highest among math and science teachers, which the author attributed to their higher academic ability; they were often placed in supervisory capacities. Low salary and working conditions were most often cited as the reason for leaving. Other reasons given for leaving the profession were: “excessive non-teaching responsibilities, large class sizes, lack of job autonomy and discretion, sense of isolation from colleagues and supervisors, insufficient administrator support, and powerlessness regarding important decision making processes” (Coladarci, 1992).

Bertock, Nielsen, Curley, and Bor (1989) cited teacher stress as a serious educational problem. Their focus was on developing a treatment plan to help teachers deal with stress, which they did with a twelve-step program, which significantly reduced teacher stress. The stressors they identified were categorized into three groups of: (a) Environmental stress factors which included student discipline and attitude problems, teacher competence, and teacher administrative relations. (b) Teacher emotional stress components including anger, self-doubt, and lack of confidence, exhaustion, hypertension, absenteeism, and early retirement. (c) Teacher personality stress components were identified as negative self-perception, negative life experiences, low morale, and struggle to maintain personal values and standards in the classroom.

Clifford, Kim, and McDonald (1988) concluded that optimum motivation is achieved by providing individuals with moderately difficult tasks. Their research indicated that these tasks improved performance even when failure occurred.

Constructive responses to failure may help ensure persistence, continued achievement, and intrinsic motivation. Two attributions to failure response were identified by Clifford et al, (1988); effort attribution and ability attribution. If failure is perceived as the result of effort, success is implied in an effort to try harder. On the other hand, if failure is seen as the result of a lack of ability then future success is unlikely.

Career Stages

Webb and Sherman (1989) maintained that there are patterns in careers and that they are influenced by organizational structures. The research on career patterns for educators has documented five separate stages. These career stages are linked to the aging process for those teachers who followed traditional career paths. Non-traditional teachers, such as those who enter the profession after another career, have less concern regarding self than traditional teachers do (Bendixen-Noe & Redick, 1995). Most of the work in this area has focused on career stages for men. The little work that has been done on career stages for women is included in the following information.

Stage 1, early adulthood stage, occurs roughly between the ages of 21 through 28. It is commonly seen as a transition period between "growing up" and "settling down." Levinson (1979) documented that individuals explore two options. Individuals keep their options open by avoiding strong commitments and maximize alternatives. These individuals also look for ways to establish a stable life structure and become more responsible in order to make something of themselves. The challenge they face at this stage of their lives is to find a balance between exploration and commitment. Two problems faced by young teachers include under-commitment and early commitment. Under-committed teachers characterize those who see education as a career choice that

gives them the maximum time off work with a reasonable paycheck while they explore other career alternatives. These teachers typically either develop a commitment to the profession or go elsewhere within a few years. Early-commitment teachers often feel that they are trapped in a profession that is wrong for them. Gilligan (1982) maintained that many women value relationships and social responsibility over power and personal ambition. Women then tended to find education satisfying because they found opportunities to demonstrate caring, morality, responsibility, conflict resolution, and develop satisfying human relationships. Nias (1985) explored attributes, which sustain teachers through difficult times. Nias also found that teachers express their commitment to education in moral terms. Teachers discuss their responsibility to the subject matter, to the student, to society and to the profession. The ideals of teachers differ significantly from the individualistic ideals that dominate American culture (Nias, 1985). Bicklen (1985) found that woman teachers tended to focus on the occupation of classroom teacher rather than teaching as a path to other occupational choices. They were more committed to quality performance than to career value.

Teachers who survived Stage 1 of their teaching careers have reported numerous reasons why this is so. While they faced many obstacles, they also learned numerous skills to help them be more successful. Among the skills reported by Webb and Sherman (1989) are:

1. strategies for budgeting time,
2. finding balance between curriculum objectives and the needs of students,
3. the understanding that they had a great deal to learn about teaching and the students they were teaching,

4. the importance of enjoying students and becoming more relaxed with them,
5. the importance of enthusiasm,
6. understanding of the complexity of teaching and,
7. the development of genuine idealism and the feeling that they are part of something that is very important.

Stage 2 is commonly called the Age 30 Transition. Most adults between the ages of 28 through 33 exhibit the characteristics of this stage. During this time, individuals often assess their accomplishments and shortcomings. Often, then, career dreams change and career courses are reset. Teachers often seek new challenges and responsibility that they believe will lead to greater recognition and fulfillment. Levinson (1979) believed that this re-evaluation occurs because experience has made individuals more aware of their abilities and interests. Levinson (1979) also pointed out that individuals are likely to be very disappointed in later life if they believe they have a poor choice. Future career and personality development will be difficult, with unhappiness a frequent result. If teachers stay in the classroom they must be able to justify the decision to work with children. While they often believe that the work of the teacher is worthwhile to the well being of society, American teachers must often make decisions contrary to the national ethic of self-improvement and upward mobility. By staying in the classroom, they are dropping out of the race for upward mobility (Levinson, 1979).

It is not uncommon for teachers to move three or four times in as many years until they find a teaching position that suits them. They're likely to have confidence in their abilities and take pride in what they have learned in their experience of eight to ten years in the classroom. Often these teachers at Stage 2 of their careers may resist changes that

are forced on them and will not allow them to use and expand their skills. They will embrace changes that expand their abilities and improve their teaching performance. These individuals have set the stage to become their own persons both professionally and privately. This work that is begun during Stage 2 continues well into the teachers mid 40's. Gilligan (1982) believed that the career aspirations of women teachers and many men teachers have a more social than individualistic orientation. She suggested that these teachers in their 30's are more able to have a positive impact on their students and their schools because of their feelings of competence.

Stage 3 is often referred to as the "settling down" stage of teachers' careers. During this time the tasks of establishing a niche in society and becoming one's own person are addressed. These Stage 3 teachers often possess a great deal of energy and commitment. This is a time of high activity and increased visibility. Occupational identification has been fully internalized and teachers possess pride and personal identity from their classroom successes. Teachers often pursue advanced degrees, understanding that they are limited to horizontal rather than vertical professional advancement. Those entering graduate school are publicly declaring an interest in advancement, professional development and commitment through hard work and sacrifice. Those who pursue administrative degrees are likely to begin to separate themselves from the everyday concerns of classroom teachers. They begin to see the school from the vantage point of an administrator culture (Becker, 1993).

Stage 4 teachers are those who are coming to terms with their lives and what they have accomplished. This stage of career typically occurs between the ages of 40 to 55.

Webb and Sherman (1989) maintain that this career stage means different changes for men than for women.

Between the ages of 40 and 55, men teachers realize that they have been passed over for promotion and that they, in all likelihood will remain classroom teachers for the remainder of their careers. For some, this realization is a bitter reality and they begin putting energy into part-time career options. Other male teachers reassess their commitments and place emphasis on themselves, their homes, and their families. Men typically emerge from the mid-life more passive and less career-oriented than they previously had been (Webb & Sherman, 1989).

Women in this same mid-life transition often make a renewed commitment to teaching since their children are typically grown and gone from the home. They are often anxious to demonstrate their abilities in another arena. Women typically go through their mid-life transition around the age of 35 and often become more assertive and determined regarding their teaching careers (Sheeley, 1976).

Teachers in the 40 to 55 age range begin to change their views of children to a parental model. Teachers in their thirties often feel more distant from the children they serve than do both younger and older teachers. Younger teachers often regard themselves as older siblings and older teachers feel more of a parent or grandparent role (Webb & Sherman, 1989).

The relationship with other teachers in the school goes through a transition during mid-life as well. Older teachers often become de facto leaders in the school and assume a quasi-parental role with younger teachers. Those teachers who fail to adjust well to the

mid-life transition often no longer get satisfaction from the job, students, or colleagues (Webb & Sherman, 1989).

Stage 5 is comprised teachers of aged 55 to retirement. During this stage of a teacher's career, reflection, introspection and self-evaluation become more common. Teachers tend to become more accepting of student behaviors and minor classroom problems. Often these teachers have gained a reputation for themselves, which can be a source of pride for them. Some become very influential with students and faculty (Webb & Sherman, 1989).

Characteristics of PAEMST Teachers at the Elementary Level

The National Science Foundation funded a study conducted by Horizon Research Inc. of Chapel Hill, NC, of elementary mathematics teachers (grades 1-6) in 1997. The survey compared 930 past winners of the PAEMST with a random sample of 2065 mathematics and science teachers (NSF, 1997). The study results regarding mathematics teachers are as follows:

1. PAEMST teachers relied on textbooks less than their peers do. Twenty two percent of PAEMST winners grades 1-6 considered textbooks a "major influence" on what they teach compared to 79 percent of math teachers overall.
2. PAEMST teachers were better prepared academically to teach mathematics. Thirty-six percent of the PAEMST winners hold a degree or a minor in mathematics compared to only 7 percent of their peers.
3. PAEMST teachers were more committed to lifelong learning and professional development than were their peers. More than 75 percent of PAEMST

winners devote at least 35 hours per year to in-service compared to 12 percent of their peers. PAEMST winners were about nine times more likely to be involved in professional activities than their peers.

4. PAEMST teachers felt more competent in teaching mathematics than did their peers.
5. PAEMST teachers tended to use more advanced classroom tools and teaching techniques than did their peers. Ninety-three percent of PAEMST awardees in elementary mathematics said they were well aware of the NCTM standards compared to 10 percent of their peers. These PAEMST educators were more likely to integrate mathematics with other subjects and to endorse the use of computers and calculators in the classroom.

Summary

The Presidential Awards for Excellence in Mathematics and Science teaching seek to recognize teachers who can serve as leaders in curriculum development and models for their colleagues. The award does not take into consideration the classroom attributes of these teachers. Emerging “best practices” (Zemelman, Daniels & Hyde, 1998) coupled with the Teacher Behavior Continuum (Wolfgang & Glickman, 1986) indicate that teachers who display the interactionist philosophy will be the most effective in implementing “best practices” in the classroom.

Career stages of teachers indicate a change from an older-sibling relationship in the early years of Stage 1, (21 to 28 years of age.) Stage 2, (28 through 33 years of age) represents a period of transition during which teachers often make the decision to continue in education or pursue another line of work. They are often confused by a

changing role with students. Those who stay in the profession during Stage 2 emerge with a more paternal attitude towards students during Stage 3 (33 through 44 years of age). Teachers in Stage 3 tend to be comfortable with their profession and themselves and often pursue advanced degrees, even though they realize they are limited to horizontal promotion unless they choose to go into administration. Stage 3 teachers are typically full of energy and enthusiasm for the profession. Finally, as described in the model, teachers at Stage 4 and 5 tend to become more complacent and show less energy for their profession (Webb & Sherman, 1989).

CHAPTER THREE

Methodology

The specific intent of this study was to determine whether PAEMST teachers use practices and hold beliefs about children's learning which are consistent with the body of literature documenting "best practices" in education today. This study also determined the Career Stages of PAEMST teachers, using Webb & Sherman's (1989) model.

Research Design

This study was a descriptive study of the Career Stages and classroom control attributes of PAEMST award winners in secondary mathematics as well as the career stages represented by the winners. The study included questions used to collect demographic information to ascertain career stages and examine classroom management beliefs via the Attitudes and Beliefs of Classroom Control Inventory (Martin, Yin & Baldwin, 1998). Classroom management beliefs were examined in three dimensions of classroom management. The three dimensions measured by the ABCC are People Management, Behavior Management, and Instructional Management.

Research Questions

The central research question in this study was: Are PAEMST winners in secondary mathematics teachers who hold interactionist beliefs in their practice of managing people, behavior, and instruction? The qualitative portion of this research aimed to answer the question; what is the predominant career stage of PAEMST award winners in secondary mathematics?

Population and Sample

The sample for this study included all fifty-four of the 1999 Presidential Award for Excellence in Teaching Science and Mathematics winners in secondary mathematics. Eligible applicants for the PAEMST in secondary mathematics are grade 9-12 mathematics teachers and middle school mathematics teachers who teach mathematics 50 percent or more of the time (NSF, 1998). Each state and U.S. jurisdiction of the United States has one awardee in secondary mathematics each year. A panel of experts meets in Arlington, Virginia annually to spend several days reviewing the applications and selecting the winners for each state and territory.

Instrumentation

Two instruments were used in this study. The Attitudes and Beliefs on Classroom Control Inventory (Martin, Yin & Baldwin, 1998) was used to determine where the PAEMST award winners are in the continuum of classroom management from interventionist (most controlling) to non-interventionist (least controlling) in each of the three dimensions of classroom management. Teachers who hold interactionalist beliefs in classroom management score between the two extremes. The demographic information from the survey was used to determine the career stage of the PAEMST award winners using information on age; number of years in the profession and the year the first teaching contract was signed.

Attitudes & Beliefs on Classroom Control (ABCC) Inventory

The instrument used for gathering quantitative data was the Attitudes and Beliefs on Classroom Control Inventory (ABCC) (Martin, Yin & Baldwin, 1998). The survey

assesses people management, behavior management, and instructional management attitudes and beliefs. Appendix B contains the survey.

Martin, and Baldwin began developing the ABCC in 1993 to identify classroom management attributes of teachers. It has been used to compare teachers by gender, experience, and level taught. The purpose of the inventory was to identify the classroom management styles of the teachers surveyed. The instrument consists of 26 items in a Likert format with scores ranging from one to four. Three sub-scales are derived from the survey: Behavior Management (4 items, reliability = 0.69), Instructional Management (14 items, reliability = 0.82), and People Management (8 items, reliability = 0.69). Teachers are scored on a continuum from non-interventionist (least controlling) to interventionist (most controlling). The mid-range score represents interactionalist management style.

In this study, the teachers who have received the PAEMST award for secondary mathematics were placed on the continuum for each of the sub-scales of the ABCC based on their response to the survey. Figure 1 shows the three dimensions of the ABCC Inventory with the range of scores for each.

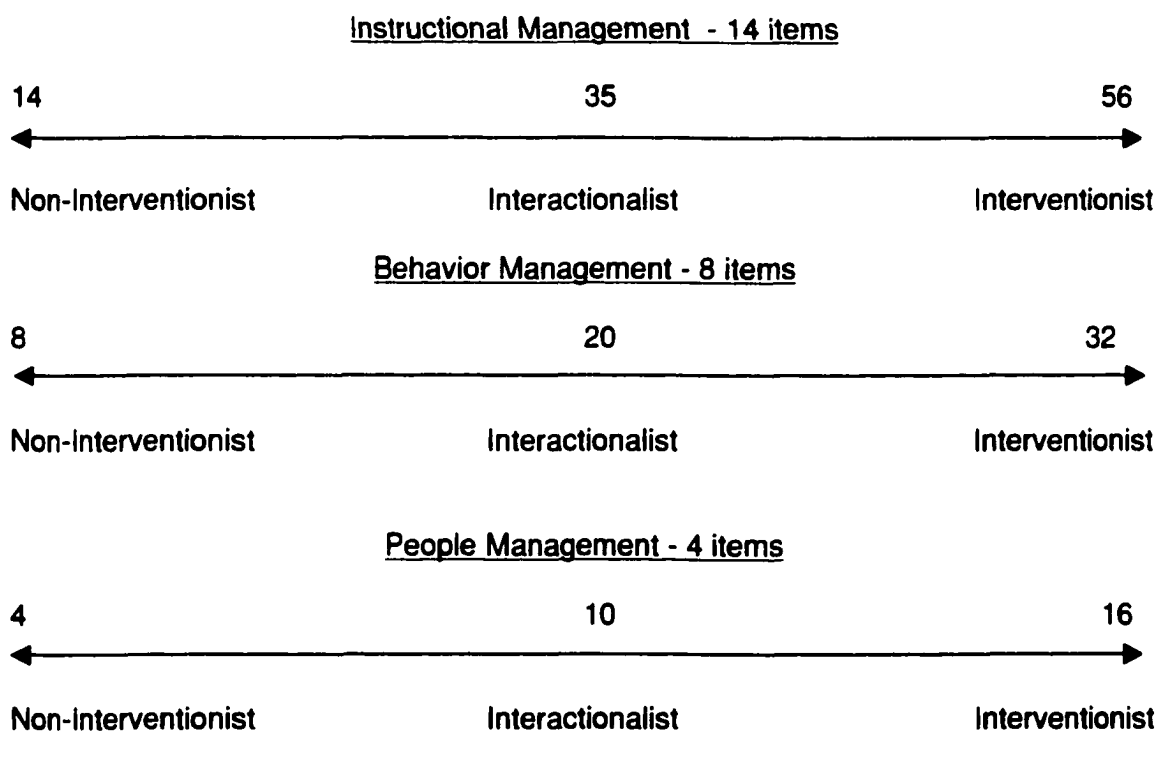
Instructional management addresses issues that contribute to the classroom atmosphere, such as, monitoring student work, material allocation, and structuring daily routines. Fifty percent of the questions deal with this category since without good instructional management a good classroom environment is impossible. Well-planned instruction and smoothness in transitions are characteristics of well-planned instruction, which prevents off-task behaviors (Martin, Yin & Baldwin, 1998).

The people management dimension explores teacher beliefs about students and efforts to develop relationships with students. As Glasser (1998) points out, productive

behaviors lead to academic achievement and are influenced by teacher-student relationships (Martin, Yin & Baldwin, 1998).

Behavior management reflects teacher pre-planning and thinking about student behavior. The establishment of classroom rules, reward structures, and student input reduces reactionary discipline problems (Martin, Yin & Baldwin, 1998).

Figure 1 ABCC Inventory Sub-Scale range for each of the three dimensions: Instructional Management, People Management and Behavior Management.



Career Stages Survey

Career stage was determined based upon demographic information (age and number of years of experience) for teachers who have followed a traditional career path in education. Stage 1 teachers are typically between the ages of 21 to 28. Stage 2 teachers

are ages 28-33. Stage 3 teachers are age 33 to 40. Stage 4 teachers are between 40 and 55 years of age. Stage 5 teachers are 55 and older as delineated for the Webb and Sherman (1989) model.

Procedures

Surveys were mailed to the 1999 PAEMST award winners in secondary mathematics. A cover letter explained the survey and procedures to be used to complete it. Subjects were offered an opportunity to receive a synopsis of results. Two follow-up letters were sent to those who did not respond. The target response rate was 67%.

Treatment of the Data

Each respondent's survey was scored for each of the sub-scales of the ABCC, instructional management, people management, and behavior management. The ABCC allows scores for instructional management to range from 14 to 56. Non-interventionist teachers will score at the low end of the scale, and interventionist teachers will score at the high end, with interactionalist teachers scoring in the mid-range. Behavior management scores range from four to 16, with non-interventionists scoring at the low end and interventionist teachers at the high end. The mid-range scores represent interactionalist teachers. The people management sub-scale allows scores ranging from eight to 32. Again, non-interventionists score at the low end and interventionists at the high end of the scale, with interactionalist teachers scoring in the mid-range.

The career stage of each teacher was determined by ascertaining the age group, years of experience, educational level and gender data. Webb and Sherman's (1989) description of career stages will help ascertain the career stage of those teachers who followed a traditional career path.

Post Hoc Treatment of Unanticipated Comments

Over half of the respondents added comments to qualify their responses to the survey. A post hoc evaluation of these comments was conducted using a grounded theory (Creswell, 1998) approach that utilized open, axial and selective coding to present a clear picture of the attitudes and beliefs of classroom control of the PAEMST awardees. The final step determined the core category and subcategories that emerged from the coding process. Chapter four describes the procedures for this analysis and the emergence of the grounded theory.

CHAPTER FOUR

Data Analysis

Demographic Profile

Forty of the fifty-four PAEMST awardees in secondary mathematics responded to the survey. This represents a response rate of 74%. Since the research targeted a 67% response rate, that expectation was exceeded. The first request for surveys resulted in a 54% response rate. The second and third follow-up requests increased that percentage to the final 74% response rate.

Table 1

Gender of Respondents

Gender	Number of respondents
Female	31
Male	9

As Table 1 demonstrates, the number of female respondents outnumbered the male respondents by a ratio of approximately 3.5:1. Males represented 22.5% of the PAEMST teachers who responded. Females made up 77.5% of the PAEMST awardees in secondary mathematics that responded to the survey.

Table 2 depicts the data by age groups that are consistent with Webb and Sherman's career stage model (1989). Both of the teachers in the 29 through 33 age group were males. Of those in the 34 through 40 age group, one was a male and seven

were female. The 41 through 55 age group contained six males and 22 females. Both of the teachers in the 56 and older age group were females.

Table 2

Age Groups Represented in the Survey Responses

Age Group	Number of Respondents
29-33	2
34-40	8
41-55	28
56 and older	2

Eight of the teachers had not followed a traditional career path. This group included seven females and one male. A traditional career path implies that teachers graduated from college in their early twenties and proceeded directly into careers. The determination regarding career path was made by comparing the number of years in the field to the number of years since signing the first contract, then correlating that information with age.

Of the 32 teachers who had followed a traditional career path, eight were males and 24 female. Of the females who had followed a traditional career path, 16 were career Stage 4 teachers. Six of the females were in career Stage 3 and one was in career Stage 5. Five of the male teachers in a traditional career path were in career Stage 4, two were in career Stage 2 and one was a career Stage 3 teacher. As a result, H_4 , which states PAEMST award winners will largely be career Stage 3 teachers as described by

educational sociologists Webb and Sherman in their seminal model of career stages (1989), was rejected.

Table 3

Teaching Assignments of PAEMST Respondents

Teaching Assignment	Number of Respondents
Middle School	8
Middle School and High School	4
High School	27
High School and Junior College	1

Teaching assignments of the PAEMST awardees in secondary mathematics are disaggregated in Table 3. The PAEMST allows teachers who teach at least half time at the secondary level and teachers who teach full time at the middle school level to apply for the secondary teacher award. Nearly a third of the award winners for 1999 did not teach exclusively at the secondary level if at all. The one teacher who taught at the junior college level as well as at the secondary level had earned a doctorate in education.

As Table 4 indicates, the vast majority (90%), of the respondents had earned at least a master degree. PAEMST awardees with a bachelor degree represented 7.5% of the sample. Of the three teachers with a bachelor degree, one had earned an additional fifteen credits and two had earned an additional sixty credits. Five of the awardees with a master degree were working towards a doctorate and two of the awardees with a bachelor degree were working towards a master degree. The remaining 33 awardees were not working towards another degree.

Table 4

Educational Level of PAEMST awardees

Education	Number of Respondents
Bachelor + 15	1
Bachelor + 60	2
Master	4
Master + 15	5
Master + 30	10
Master + 45	15
Master +60	1
Doctorate	1

Formal nomination by a specific individual is not required for the PAEMST application. Typically, someone suggests to a potential awardee that they apply for the award, and that person is considered by the teacher to be the one who nominates him or her for the award. The PAEMST application process requires the teacher to complete the application information. Letters of recommendation are part of that process and are often completed by administrators, peers or college professors. Twenty-five of the respondents had been recommended for the award by their administrators, which represented 46.3% of the respondents. A peer had recommended twelve awardees, or 22.2% of the total. A professor had recommended one awardee and two awardees had nominated themselves. Table 5 disaggregates the data for the source of the awardees' nomination. Clearly the most common source of nominations was an administrator.

Table 5

Source of Nomination for Awardees

Nominator	Number of Awardee Respondents
Administrator	25
Peer	12
Self	2
College Professor	1

Data Analysis for the Attitudes and Beliefs of Classroom Control Inventory

The ABCC provides scores for three sub-scales that apply to three classroom management dimensions: Instructional Management, People Management and Behavior Management. Each of the sub-scales gives the teacher a score, which then can be compared to the three philosophies of classroom management derived from Wolfgang and Glickman's (1986) Teacher Behavior Continuum. The TBC places non-interventionist on the left, with interactionalist philosophies at the midrange, and interventionists represented by the far right.

Instructional Management

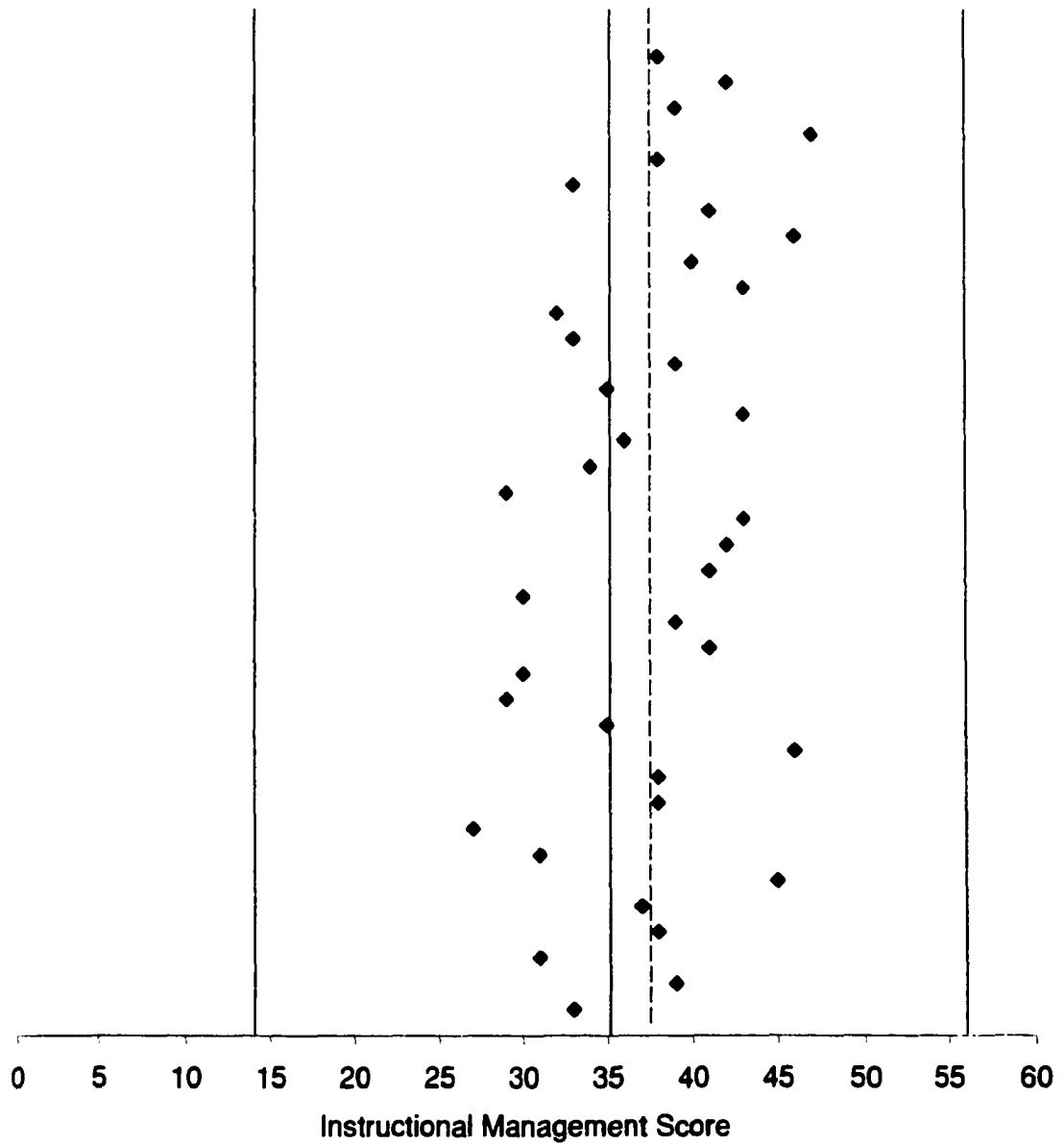
Table 6 contains the scores for Instructional Management of the PAEMST awardees. The scoring rubric for Instructional Management allows a range from 14, representing strongly non-interventionist attitudes and beliefs of classroom control, to 56, which represents strongly interventionist attitudes and beliefs. A mid-range score near 35 indicates interactionalist attitudes and beliefs.

Table 6

ABCC Instructional Management Scores for PAEMST Awardees

Teacher	Score	Teacher	Score	Teacher	Score
1	33	19	42	36	39
2	39	19	42	37	42
3	31	20	43	38	38
4	38	21	29	39	38
5	37	22	34	40	30
6	45	23	36		
7	31	24	43		
8	27	25	35		
9	38	26	39		
10	38	27	33		
11	46	28	32		
12	35	29	43		
13	29	30	40		
14	30	31	46		
15	41	32	41		
16	39	33	33		
17	30	34	38		
18	41	35	47		

Figure 2

Distribution of Instructional Management Scores

As depicted in Figure 2, the mean score for the Instructional Management sub-scale was 37.2. The standard deviation was 5.3. The left vertical line in Figure 2

represents the lowest score possible (14) on the Instructional Management sub-scale. A teacher scoring at this line would be strongly non-interventionist. The central vertical line represents the median score of 35, which would be indicative of a teacher who is strongly interactionalist. A teacher who is strongly interventionist would score on the right vertical line (56). The dashed vertical line represents the mean score (37.2) for the 40 respondents. As Figure 2 demonstrates, the presidential awardees scored interactionalist on the Instructional Management sub-scale of the ABCC. Therefore H_1 , which states that PAEMST award winners in secondary mathematics will demonstrate interactionalist Instructional Management attitudes and beliefs, is accepted.

Behavior Management

The data for Behavior Management is reported in Table 7 with a visual representation in Figure 3. Behavior Management refers to the strategies the teacher uses in the classroom to manage student behavior. Non-interventionist teachers would typically accept students as they are and accept the attitudes and behaviors they exhibit. An interventionist teacher would be more inclined to address attitudes and behaviors that the teacher found unacceptable and work to change those aspects of the student. The interventionist would have little concern for the individuality of each student, but rather would focus on controlling behaviors to minimize distractions to the presentation of the curriculum. An interactionalist teacher would be inclined to accept students as they are. At the same time, the interactionalist would remain cognizant of the need to structure the classroom in a manner which would enable students to display appropriate behavior. This would mean establishing clear guidelines for acceptable behavior (Martin, Yin and Baldwin, 1998).

Table 7

ABCC Behavioral Management Scores for PAEMST Awardees

Teacher	Score	Teacher	Score	Teacher	Score
1	23	19	21	37	28
2	27	20	19	38	25
3	15	21	26	39	29
4	22	22	25	40	21
5	23	23	17		
6	29	24	21		
7	16	25	24		
8	16	26	20		
9	24	27	18		
10	21	28	19		
11	29	29	32		
12	24	30	23		
13	15	31	22		
14	23	32	25		
15	18	33	21		
16	22	34	19		
17	15	35	28		
18	21	36	21		

Figure 3

Distribution of Behavior Management Scores

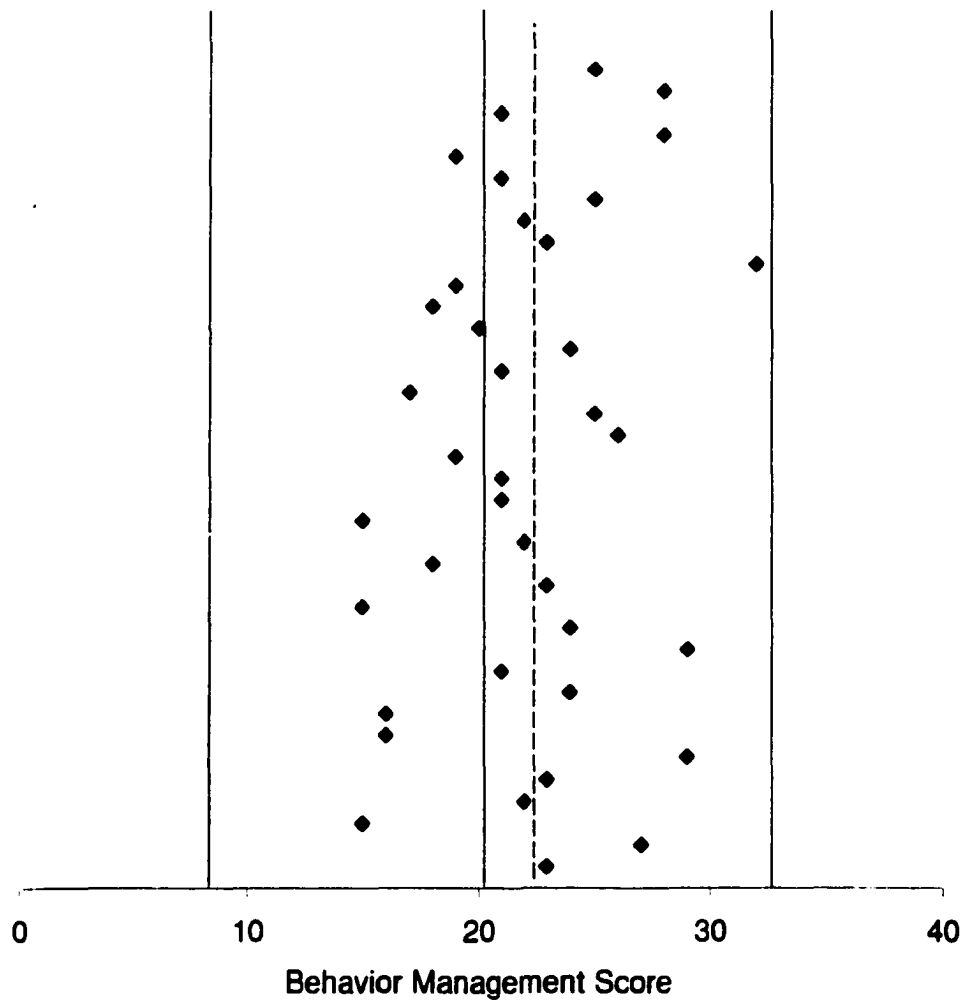


Figure 3 depicts the relationship between the PAEMST respondents and the ABCC behavioral management sub-scale. The mean for Behavior Management was 22.2. The standard deviation was 4.3.

The left vertical line represents the low end of the Behavior Management score of 8. A teacher at this end of the scale would be strongly non-interventionist in Behavior Management. The solid vertical line in the middle represents the mid-range score of 20. A teacher scoring near this line would be strongly interactionalist. The dashed vertical line represents the mean of 22.2 for the PAEMST respondents. The vertical line at the right represents the upper limit score of 32 for Behavior Management sub-scale. A teacher scoring near this line is strongly interventionist. With a mean score of 22.2, it is clear that the PAEMST respondents are interactionalist in their attitudes and beliefs for management of behavior in their classroom. Therefore, H_2 that PAEMST award winners in secondary mathematics will demonstrate interactionalist behavioral management attitudes and beliefs, is accepted.

People Management

The People Management sub-scale of the ABCC measures the attitudes and beliefs of teachers regarding the type of relationship building strategies used in the classroom. Four questions of the ABCC were used to establish this score. The low-end score of 4 represents a teacher who is strongly non-interventionist regarding relationship building. Non-interventionist teachers would be characterized by a non-controlling relationship over the students in their classroom. The high end of the scale is represented by a score of 16. Teachers who score at the high end of the scale are strongly interventionist. The teachers at this end of the sub-scale would be characterized as having a controlling relationship with students, with little concern for the feelings and attitudes of students. The mid-range score of 10 represents teachers who are strongly interactionalist. These

teachers understand that students need guidance, but that attention must be paid to their inner feelings and attitudes (Martin, Yin & Baldwin, 1998).

Table 8

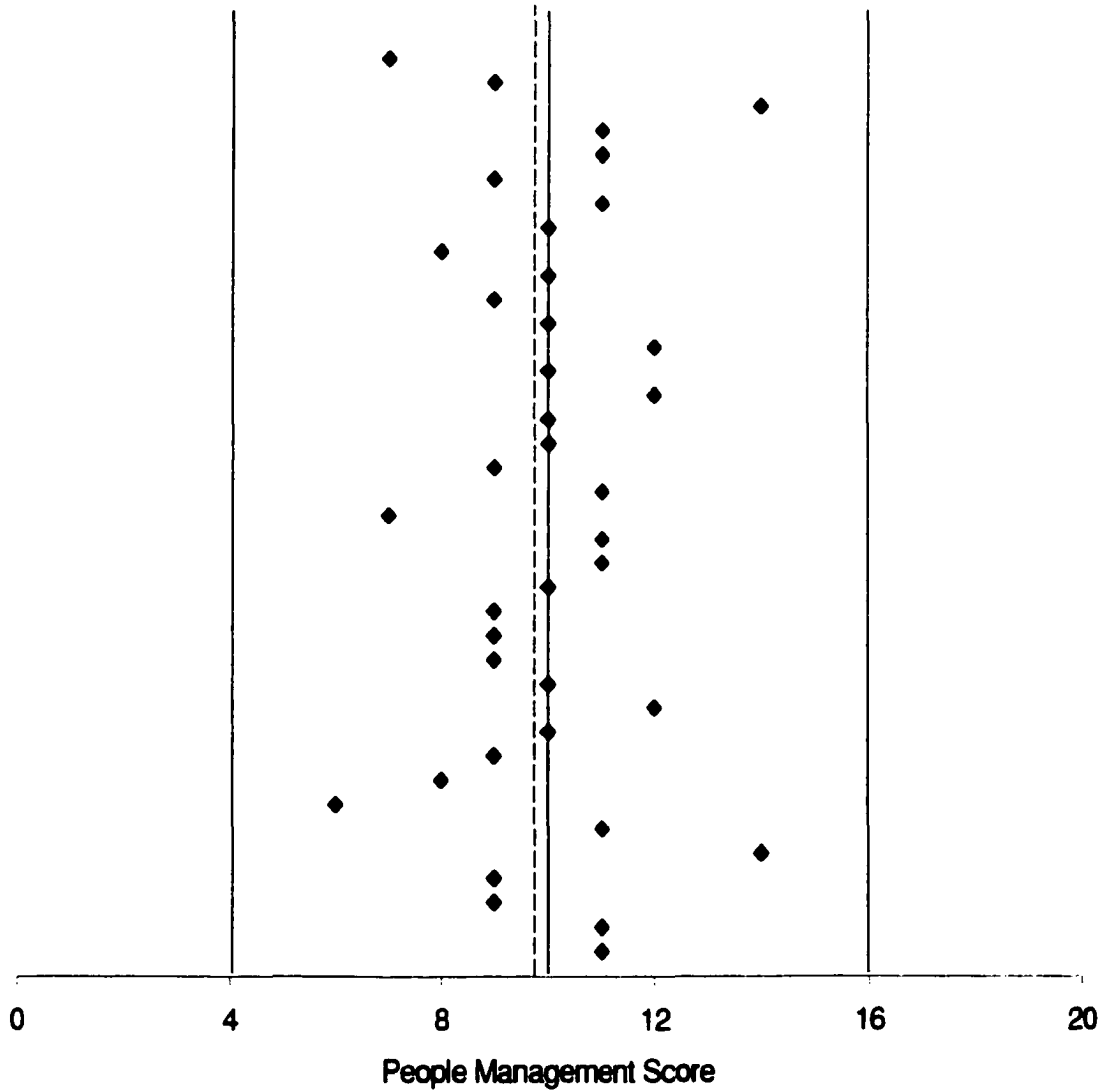
ABCC People Management Scores for PAEMST Awardees

Teacher	Score	Teacher	Score	Teacher	Score
1	11	18	11	35	11
2	11	19	7	36	14
3	9	20	11	37	9
4	9	21	9	38	7
5	14	22	10	39	10
6	11	23	10	40	8
7	6	24	12		
8	8	25	10		
9	9	26	12		
10	10	27	10		
11	12	28	9		
12	10	29	10		
13	9	30	8		
14	9	31	10		
15	9	32	11		
16	10	33	9		
17	11	34	11		

Table 8 contains the scores of the respondents for the People Management sub-scale of the ABCC. The mean was 9.9. The standard distribution was 1.7. Figure 4 shows the relationship between the PAEMST awardees and the People Management sub-scale.

Figure 4

Distribution of People Management Scores



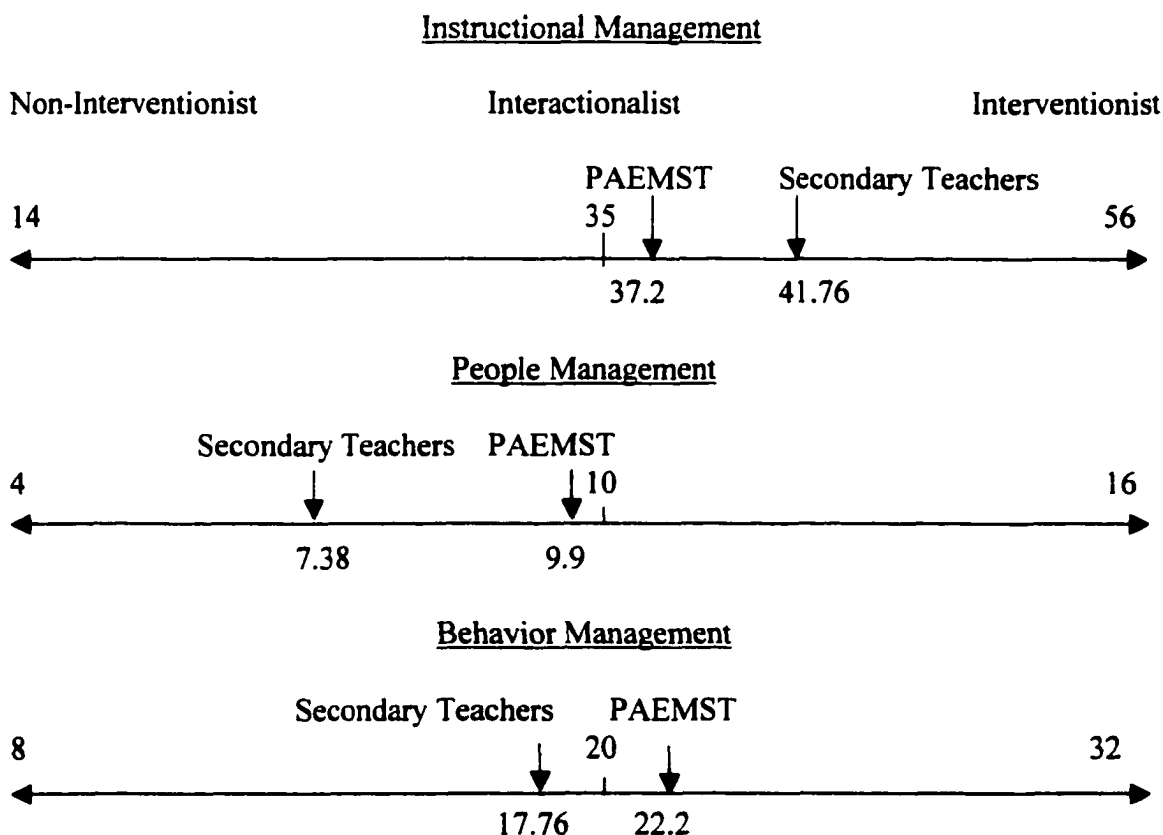
The left vertical line in Figure 4 represents the low end of the People Management sub-scale (4). Teachers scoring at or near four are strongly non-interventionist. The vertical dashed line represents the mean score (9.9) for the PAEMST awardees. The central vertical line represents the median of the People Management sub-scale (10). Teachers close to this line are strongly interactionalist. The right vertical line represents the upper end of the People Management sub-scale (16). Teachers scoring near this line are strongly interventionist in their People Management attitudes and beliefs. Therefore, H_3 , PAEMST award winners in secondary mathematics will demonstrate interactionalist People Management attitudes and beliefs, is accepted.

PAEMST Awardees and the TBC

Wolfgang and Glickman's Teacher Behavior Continuum (TBC) is the underlying theory for the ABCC. The purpose of the ABCC is to place teachers on the TBC which ranks teachers on the continuum from non-interventionist to interventionist, with interactionalist teachers in the mid-range. Figure 5 shows the placement of the PAEMST awardees on the TBC for each of the three dimensions of classroom control measured by the ABCC.

PAEMST awardees scored interactionalist on all three sub-scales of the ABCC inventory. While it was hypothesized that this would be so, it was surprising that the scores on Instructional Management, People Management and Behavioral Management so closely matched the interactionalist philosophy of classroom management. Figure 5 also shows the placement of the results Martin, Yin and Baldwin (1998) found for their sample of 196 secondary teachers.

Figure 5

PAEMST Awardees Mean Scores on the TBC for the Three Dimensions of ClassroomControl

Martin, Yin and Baldwin's (1998) data was compared with the results of the PAEMST winners using a two-tailed t test. Using $\alpha = .05$ requires a t value of ≥ 2.021 to show significance.

Instructional Management

With $\alpha = .05$ and H_0 stated, There is no statistically significant difference between the PAEMST Awardees and Martin, Yin and Baldwin's random sample of secondary teachers for the dimension of instructional management. For the two tailed t-test the value of $t = 5.44$. H_0 rejected at the $\alpha = .05$ significance level.

Behavior Management

With $\alpha = .05$ and H_0 stated, There is no statistically significant difference between the PAEMST Awardees and Martin, Yin and Baldwin's random sample of secondary teachers for Behavior Management. For the two tailed t-test the value of $t = 6.24$. H_0 rejected at the $\alpha = .05$ significance level.

People Management

With $\alpha = .05$ and H_0 stated, There is no statistically significant difference between the PAEMST Awardees and Martin, Yin and Baldwin's random sample of secondary teachers for People Management. For the one tailed t-test the value of $t = 9.375$. H_0 is rejected at the $\alpha = .05$ significance level.

There is a statistically significant difference between the PAEMST awardees and the population of secondary teachers surveyed by Martin et al (1998) in all three dimensions of the ABCC. The PAEMST awardees are statistically significantly more interactionist than Martin et al's (1998) data in the dimensions of People Management and Instructional Management. The PAEMST awardees are statistically significantly more interventionist for the dimension of Behavioral Management than Martin et al's (1998) population.

Data Analysis of Unsolicited Responses

The PAEMST teachers provided a large number of unsolicited responses as they completed the ABCC. These questions further clarified responses to the questions and offered opinions regarding the subject of the questions. These responses indicated strong feelings about the issue of classroom management and their number warranted further analysis. The complete text of all the unsolicited comments is presented in Appendix D.

Analysis of the unsolicited responses was pursued using a qualitative approach. The process involved three steps. The first was to use open coding to identify categories and properties of the categories using the data gathered to find the dimensions or possibilities present in the data. Upon completion of that step, axial coding was used to find a new way to assemble the data around a central phenomenon. Strategies and consequences that result from the central phenomenon were then identified. The final step in the analysis of the unsolicited comments involved selective coding to develop a “story line” to describe the attributes of a typical PAEMST award winner in secondary mathematics (Creswell, 1998).

Open coding

Open coding (Creswell, 1998) of the unsolicited comments involved finding categories for the information and the identification of subcategories that represented the information over the continuum of responses. The three general categories in the unsolicited comments followed those posed in the instrumentation, namely: (a) Instructional Management, (b) Behavioral Management, and (c) People Management. These three categories were explored for their properties and dimensions.

People Management

Table 9 presents the category of People Management. The properties of People Management identified in the data are then included. Finally the dimensional range of the properties of People Management is given. The dimensional range represents the extremes relating to each property that were present in the data.

Table 9

Properties and Dimensional Range of the People Management Category

Category	Properties	Dimensional Range
People Management	Student interaction	Teach appropriate behaviors
	with peers	↕
		Keep students on task
	Student interaction	Teachers are fallible
	with teacher	↕
		Teachers deserve respect
Student interaction	Allow freedom within the curriculum	
with curriculum	framework	
	↕	
	Necessary to do some things they	
	would rather not	

Student Interaction with Peers. Comments from teachers indicated that they believe they have the responsibility to teach appropriate ways to interact. One teacher commented that appropriate interactions are “learned by seeing – actions modeled [by

students].” Another teacher commented, “Johnson & Johnson and Kagen both stress the need to teach social skills.”

Student Interaction with Teacher. Teachers believed that it is important for students to listen to adults, but the opinion is qualified by a recognition of the fallibility of adults. Comments from teachers included: “There is value in listening” and “they [the student] have to believe in the adult,” and “Who is this God-like adult?”

Student Interaction with the Curriculum. Commenting teachers recognized the importance of giving students the maximum amount of freedom to pursue their own interests within the framework of the curriculum at the secondary level. A teacher commented: “Yes [to freedom] if curriculum related – No if time wasting.” Another stated, “when given a limited number of choices [freedom is allowed].” Several also indicated that they felt students at the middle school level could handle fewer choices than the secondary level students. The comment of a middle school teacher summed it up best: “In the middle and elementary schools, I question the maturity level in this belief [freedom to pursue interests].”

Behavior Management

Behavior Management refers to teacher preplanning of strategies to manage student behaviors. The ABCC survey explored the attitudes and beliefs regarding the management of student behaviors. Open coding of the comments from the survey related to Behavior Management is included in Table 10. This table displays the category Behavior Management. The properties that were identified in the data relating to Behavior Management are in the second column. The dimensions of each of the properties, representing the range of responses for each property, are in the third column.

The three columns describe the properties and dimensional range of Behavior Management present in the unsolicited responses to the ABCC survey.

Table 10

Properties and Dimensional Range of the Behavior Management Category

Category	Properties	Dimensional Range
Behavior Management	Establishment of classroom rules	Few rules
		↕
	Management of student behaviors	Emphasis on guidelines and procedures
		↕
	Student participation in establishing rules	Give students "space" when necessary.
		↕
	Rewards for good behavior	Require and expect courtesy and respect.
↕		
	Student participation encouraged	
	↕	
	Students must accept some rules	
	↕	
	Few rewards	
	↕	
	Rewards	

Establishment of Classroom Rules. The teachers commenting on the procedure for establishing and maintaining classroom rules agreed that few rules were necessary. Indeed, one teacher commented, “ I give guidelines and procedures, not rules.” Another stated that: “We have very few rules – just common sense ones.” A third concurred, noting, “Good teachers don’t need penalties.” When the PAEMST awardees were asked if they would change a rule students thought unfair, several responded: “I only have one rule. That rule is show respect.” Added another: “I would have to support their reasoning to some degree.” In addressing rules, one awardee responded that: “Mine are all fair.”

Management of Student Behavior. Enforcing the rules and guidelines in the classroom was not a concern for the teachers responding with comments. In general, it seemed that these teachers have the experience and expertise to maintain good discipline and an orderly classroom environment with little effort. One teacher commented: “The ‘look’ usually works.” Another stated, “It sounds harsh, but I want the other drivers on our crazy streets to obey the rules.”

PAEMST awardees are concerned about the feelings of the individual student. Several comments reflected this outlook. One teacher wrote, “I like to hear causes. I may be misunderstanding the situation.” Another noted: “Sometimes students need space on their ‘bad days’. [I give it to them] if they don’t interfere with others.” A third teacher commented, “[Rules] help shape behavior-if well devised and ‘lovingly’ enforced, they can help development.”

Student Participation in Establishing Rules. While several of the responding PAEMST awardees agreed that it is a laudable goal to have student participation in the

establishment of rules for the classroom, they stated that it is difficult to do so. One teacher commented; “ [Having students participate in establishing classroom rules is] a goal but not well done by me.” Another teacher observed that the classroom rules are a “combination” of teacher rules and those developed by students. The teachers’ philosophy regarding rules was revealed further in these comments: “Class rules are guidelines needed- their [the students’] personal moral code may step on other people,” and “When students understand that to get respect, they must show respect, everything works.”

Rewards for Good Behavior. It is clear from the few comments on giving rewards for good behavior that the PAEMST awardees believe that good behavior is expected and class time should not be used to reward students. One teacher stated, “Brain research discourages rewards and encourages celebrations.” Another commented, “There is a reward, but not these [a party or free time].”

Instructional Management

Instructional Management refers to the techniques the teachers used to enable students to learn, including the use of time, establishment and maintenance of classroom routines, and physical room arrangement. The majority of the comments offered by the respondents were in the category of Instructional Management. Fourteen of the twenty-six questions of the ABCC were dealing with this important part of classroom management. Open coding of the unsolicited comments from the PAEMST awardees on Instructional Management is included in Table 11.

Table 11

Properties and Dimensional Range of the Instructional Management Category

Category	Properties	Dimensional Range
Instructional Management	Monitoring of student tasks	Teacher leads students in moving from task to task ↕ Students self-direct
	Seating and classroom routines	Teacher directed routine and seating ↕ Students have freedom in approach to task – students choose seats
	Control of curricular topics and tasks	Teacher controlled ↕ Teacher controlled with student input
	Student assessment	Teacher assesses ↕ Teacher and student assess

Monitoring of Student Tasks. The unsolicited responses on the ABCC survey regarding transitions in the classroom indicated that a sensitivity to the needs of the

students on behalf of the PAEMST awardees. One teacher commented: “[The teachers should direct transitions] and also anticipate which learning style will be most appropriate.” Another teacher commented that the teacher should “lead” the transition and help the students “discover” the transition. Another teacher commented that she felt it is important “to assist, and be available” as students work.

Seating and Classroom Routines. The PAEMST awardees commented on seating arrangements in the classroom. Regarding student choice in seating assignments, one stated, “They get input, but I write seating charts to facilitate groups.” Another commented that students “rarely” get input in seating, “unless it’s an unstructured non-academic activity.”

Regarding the establishment of routines in the classroom one teacher observed, “If it is too routine it is boring.” Another commented, “expectations need to be made clear [to students].”

Control of Curricular Topics and Tasks. One teacher commented that the teacher should choose the topics and task adding that it occur: “With the experience to know what they [the student] will find interesting.” Another teacher believed that the teacher was responsible for choosing the “objectives and concepts”, but that students could have input on themes and topics. On the other hand, one teacher stated, “I don’t have that freedom. District and state objectives determine this [the topics and tasks].”

Student Assessment. PAEMST awardees agree that students should judge the quality of their own work. The only qualifying comment was: “I use peer evaluation as part of my evaluation plan, but I still have to grade the work.”

Axial Coding

Open coding, as demonstrated in the previous section, revealed three categories. Axial coding was conducted on the open-coded data. Axial coding involved de-contextualizing the data into segments, which were then analyzed and re-contextualized in new ways (Creswell, 1998). Analysis of the re-contextualized data using axial coding revealed relationships and properties referred to as: “Causal Condition,” “Phenomenon,” “Context,” “Intervening Conditions,” and “Action/Interaction,” as described by Creswell (1998).

Causal Condition. Causal conditions influence the phenomenon identified in the study (Creswell, 1998). In this study the causal condition is the individuals employment as a teacher of mathematics.

Phenomenon. The phenomenon is an idea or event that emerges from the causal condition (Creswell, 1998). For this study, responses aligned with an extant instrument meant that three phenomena emerged: (a) People Management, (b) Behavior Management, and (c) Instructional Management.

Context. Context refers to the set of properties pertaining to each phenomenon along a dimensional range (Cresswell, 1998). The context of the phenomena emerged through the re-contextualizing of the data.

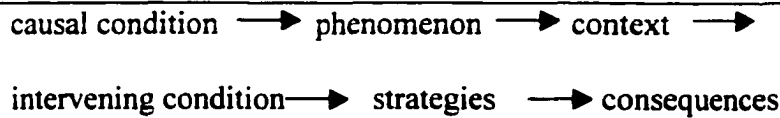
Strategies. Strategies describe the Action/Interaction used by teachers to manage or respond to the phenomena (Creswell, 1998).

Intervening Conditions. Intervening conditions refers to both the narrow and broad conditions which influence the strategies (Cresswell, 1998).

Consequences. Consequences describe the outcomes for the phenomena (Cresswell, 1998). Table 12 displays the analytical flow between the parts of the axial coding process.

Table 12

Axial Coding Process



The process begins with the causal condition and the resulting phenomena. The phenomena were related to context, which identified features of each phenomenon. Strategies were impacted by intervening conditions. The final step involved describing the consequences which resulted from the strategies (Cresswell, 1998).

The first step in axial coding involves the identification of the causal condition and the related phenomena. Table 13 presents the results of this step.

Table 13

Causal Condition and Phenomena

Causal Condition	Phenomena
Being a PAEMST award winner in secondary mathematics	People Management
	Behavioral management
	Instructional management

As is shown, the phenomena emerged from the initial survey of PAEMST awardees. The three dimensions of classroom management serve as the phenomena for this study of the awardees

Phenomenon of People Management

The phenomenon of people management together with the contexts from the unsolicited comments is presented in Table 14. The phenomenon and contexts have emerged from the axial coding process.

Table 14

The Phenomenon of People Management in Context

Phenomenon	Context
People Management	Teachers feel that they have the responsibility to teach students to treat each other with respect through example.
	Teachers believe that students should listen to adults, but be cognizant that the adult is fallible.
	Students should be allowed as much freedom in the classroom as they can handle and still learn the curriculum.

Three contexts emerged for the phenomenon of People Management from the axial coding process. The three contexts and the features of those contexts are presented next.

People management Context #1: Teachers feel that they have the responsibility to teach students to treat each other with respect through example.

Intervening Condition

- Teachers are aware that they have a role in shaping students interpersonal skills.

Strategies

- Teachers actively engage in teaching social skills.

Consequence

- Students learn to interact appropriately.

People management Context #2: Teachers believe that students should listen to adults, but be cognizant that the adults are fallible.

Intervening condition

- Teachers understand that they must earn the respect of students.
- Teachers make sure students know that “they are human.”

Strategies

- Teachers model appropriate social interactions

Consequence

- Students respect the teacher.

People management Context #3: Students should be allowed as much freedom in the classroom as they can handle and still learn the curriculum.

Intervening conditions

- The teacher assumes the responsibility of designing and teaching the curriculum.

Strategies

- Teachers keep students on task, but allow students to choose tasks within teacher established limits.
- Teachers establish a caring relationship with all students while holding high expectations of student performance.

Consequence

- Students retain a sense of some control while still meeting the teacher's goals for the curriculum simultaneously.

Phenomenon of Behavior Management

The phenomenon of Behavior Management emerged from the dimensions of classroom control assessed by the ABCC survey. This phenomenon and its features also emerged through the axial coding procedure. The three contexts for the phenomenon of Behavior Management and its features are presented in Table 15. The phenomenon of Behavior Management and the three contexts associated with it emerged from the axial coding process. Each of the three contexts of Behavior Management was explored for intervening conditions, strategies, and consequences as part of the axial coding process.

Table 15

The Phenomenon of Behavior Management

Phenomenon	Context
Behavior Management	<p data-bbox="637 395 1222 427">PAEMST teachers see the need for few rules.</p> <p data-bbox="637 544 1333 651">Teachers expect respect, but give students space when they need it.</p> <p data-bbox="637 768 1259 874">Students participate in setting some rules for the classroom.</p>

Behavior Management Context #1: PAEMST teachers see the need for few rules.

Intervening conditions

- PAEMST teachers felt in control with little formal planning for rules.

Strategies

- Teachers' guidelines and procedures were sufficient.
- Teachers used appropriate interpersonal monitoring (e.g.; the "look")

Consequence

- Behavior Management was not an issue of concern for PAEMST teachers.

Behavior Management context #2: Teachers expect respect, but give students space when they need it.

Intervening Conditions

- Teachers are sensitive to the needs of students
- Teachers expect student compliance
- Free interaction is allowed in the context of the curriculum.

Strategies

- Teachers' give students latitude in participating if they sense students are having a bad day.
- Students are treated with respect.

Consequence

- Teachers have the respect and cooperation of teachers.

Behavior Management context #3: Students participate in setting some rules for the classroom.

Intervening conditions

- PAEMST teachers are experienced with many successful years of teaching experience
- Teachers value student opinions.

Strategies

- Teachers discuss and negotiate classroom rules.
- Teachers plan instruction to minimize behavioral issues.

Consequences

- Little classroom time needs to be spent on behavioral issues.

Phenomenon of Instructional Management

The phenomenon of Instructional Management encompasses over half of the questions of the ABCC. This concept emerged through the process of axial coding and was a major category of open coding. Table 16 presents the two contexts for Instructional Management and their features. The contexts emerged during axial coding of the open coding data from the unsolicited comments on the ABCC survey.

Table 16

Phenomenon of Instructional Management

Phenomenon	Context
Instructional Management	<p>Teachers have clear standards for student learning, but students have limited freedom in meeting those standards.</p> <p>Both student and teacher assess student work.</p>

Instructional Management Context #1: Teachers have clear standards for student learning but students have limited freedom in meeting those standards.

Intervening conditions

- Teachers considers student learning style
- Student expectations are made clear
- Student input welcome as long as it helps achieve the objective

Strategies

- Teachers use “brain compatible” teaching strategies.
- Teachers allow students to progress at their own rate within reason.

Consequences

- Students meet the teachers’ standards.
- Students cooperate with the teacher.

Instructional Management context #2: Both student and teacher assess student work.

Intervening conditions

- Teachers assign grades, but students judge their own work.

Strategies

- Teachers use peer evaluation is part of assessment.

Consequences

- Students take responsibility for their own learning.
- Students meet the teacher’s standards.

The axial coding process is complete. The causal condition “Being a PAEMST award winner in secondary mathematics,” led to the development of the three phenomena. Each of these phenomena evolved as a central idea to which actions were associated.

Selective coding

The selective coding process allowed examination of the data in a “story line” which resulted in a story that integrated the categories identified in the axial coding process (Cresswell, 1998). This process helped build a complete picture of these teachers

emerging through the coding process. Within this story, the context of each phenomenon is identified in **bold** type. This story line shows the interrelationships of the phenomena which are presented in narrative form in “A Snapshot of a PAEMST Awardee in Secondary Mathematics.”

A Snapshot of a PAEMST Awardee in Secondary Mathematics

The typical PAEMST awardee in secondary mathematics is a female teacher whose age is between 41 and 55. She has earned her master’s degree and has between 15 and 30 credits beyond her degree. She has been teaching for 18 to 32 years. She has kept current in the field of education through college classes and workshops and is conversant with the NCTM Mathematics Standards. She is energetic and enthusiastic about her job and, about what her curriculum means to students. This teacher has some firmly held beliefs regarding **classroom management**.

She believes that the concept of **classroom management** has three dimensions, including **people management, behavior management, and instructional management**. While these three dimensions can be examined separately, they are very much intertwined in practice. We will discuss her views on each of the three dimensions separately.

Regarding the dimension of **people management**, this teacher holds several strong beliefs. She feels that she has the responsibility to **teach students how to interact appropriately** in the classroom. She also believes that students have the duty to **listen to adults**, but they must also realize that **adults are fallible**. She believes that students in her classroom should be **given as much freedom as they can handle and still learn the curriculum** of the course.

When discussing the issue of **behavior management**, she expresses the view of a master teacher. She believes that **few rules are necessary** for the orderly conduct of the classroom. She expects students to **treat her and others with respect**. She models this behavior for her students. **The few rules that are necessary for the classroom are developed with the participation of the students**. She believes that being well prepared with a variety of activities for her class is the best way to control student behaviors.

Instructional management is an important topic for her. She believes that **clear standards for student learning** are important. Students are given as much **freedom to meet those standards** as possible. In this regard, she is firmly in control of the curriculum in her classroom. **Assessment of student work** is often conducted through peer evaluation, but **she routinely makes her own assessment of student work**.

As a PAEMST award winner, she knows that she is exemplary in subject matter competence and has an understanding of how students learn. She has demonstrated sustained professional growth, professional involvement and leadership. She has the ability to engage students through a variety of teaching strategies that foster student interest. In short she is an exemplary teacher who cares about her students individually and, she is realistic in her expectations. Simply put, she is dedicated to teaching every student in her classroom.

The selective coding process revealed the relationships between the phenomena, People Management, Behavior Management and Instructional Management. The integration of the data during the selective coding process led to the emergence of the core category. This core category is labeled "Classroom Management," and it is related to the three phenomena that were examined during the axial coding process. The

emergence of the core category from the holistic analysis of the phenomena requires a change in terminology. The phenomena are now referred to as subcategories. The core categories and its interrelationships with the subcategories form the backbone of the narrative report.

Core Category

The core category has been defined through its relationships with the three subcategories that emerged from the selective coding process. The three subcategories include (a) People Management, (b) Behavior Management, and (c) Instructional Management. These three subcategories are related to each other as well as to the core category, Classroom Management.

Subcategories

People Management. PAEMST teachers believe that it is important that students learn to interact appropriately. These teachers give students as much freedom as they can handle responsibly. At the same time, these teachers believe that students must listen to adults. The subcategory, Behavior Management, is directly connected to the subcategory People Management, What the teacher believes about managing relationships (People Management) has a direct impact on how behavior is managed.

Behavior Management. PAEMST teachers believe that few rules are necessary in the classroom. Respect for everyone in the classroom is the expectation for teacher and students. The teacher often consults with students to establish necessary rules. This subcategory is directly related to the subcategory People Management as well as the subcategory Instructional Management. Teacher beliefs about managing behavior are heavily influenced by beliefs about people and instruction.

Instructional Management. PAEMST teachers hold Instructional Management beliefs that are complementary to their beliefs about People Management and Behavior Management. While the teacher maintains clear expectations for student learning and curricular goals, students have freedom in meeting those goals and expectations. Peer evaluation is important to these teachers, but the teacher also actively assesses student performance.

Summary

Data from the ABCC identified the PAEMST teachers as interactionalist in all three dimensions of classroom management: People Management, Behavior Management and Instructional Management. Figure 5 shows the placement of the PAEMST teachers on the Teacher Behavior Continuum.

The career stage data indicated that Webb and Sherman's (1989) career stage model applied to 80% of the teachers who responded to the survey. For those who the model applied to, 66% were Career Stage 4 teachers and only 21% were Career Stage 3.

Analysis of the unsolicited comments using open, axial, and selective coding provided further verification of the interactionalist attitudes and beliefs of the PAEMST teachers. The qualitative procedures of open, axial and selective coding were applied to the unsolicited comments. The open coding process identified several themes that were present in the comments. The themes were de-contextualized into data segments during the axial coding process. The themes were then re-contextualized by the relationships that emerged through the microanalysis as part of the axial coding process. The final part of the axial coding process identified six phenomena and their respective components from the data.

A macro analysis of the data was used in the selective coding process. The results of this macro analysis in the narrative resulted in the emergence of a core category, Classroom Management. The phenomena were then identified as subcategories; People Management, Behavior Management, and Instructional Management, of the core category and the interrelationship of the core category and subcategories formed the basis of the grounded theory. The grounded theory allowed the writing of the narrative report titled “A Snapshot of a PAEMST Awardee in Secondary Mathematics.”

CHAPTER 5

Findings, Recommendations, and Conclusions

The Presidential Award for Excellence in Mathematics and Science Teaching claims to recognize the finest mathematics and science teachers in the United States. While the selection process puts great emphasis on a number of important aspects of teaching, it pays little attention to the classroom management attributes of the awardees. As Glasser (1998) pointed out, the mind does not separate emotion from intellect. The questions to be answered by this study were: (a) Do the PAEMST awardees possess the interpersonal attributes of interactionalist teachers? (b) What is the predominant career stage of the PAEMST awardees?. As benchmarked in the relevant literature, interactionalist beliefs and attitudes characterize the best fit for the implementation of “best practice” teaching. This study determined that the PAEMST awardees do indeed possess the interpersonal attitudes and beliefs of interactionalist teachers.

Findings

The results of the ABCC, career stage information, and the storyline completed with the qualitative analysis of the unsolicited responses has created a description of the PAEMST teacher that has not been articulated before. The application process for the PAEMST does sort for teachers who use “best practices” as demonstrated in the review of literature. Significantly, the process for selecting the PAEMST awardees for 1999 inherently selected teachers who possessed the attitudes and beliefs of interactionalist teachers as well.

Elements of the application include:

1. **subject-matter competence;**

2. sustained professional growth in science or mathematics and the art of teaching;
3. an understanding of how students learn science or mathematics;
4. ability to engage students through a variety of teaching strategies;
5. ability to foster curiosity and to generate excitement about the uses of science and mathematics;
6. a conviction that all students can learn science and mathematics and a sensitivity to the needs of all students' cultural, linguistic, learning, and social uniqueness;
7. and experimental and innovative attitude in their approach to teaching; and
8. professional involvement and leadership (NSF, 1998).

When these elements are compared to the thirteen common themes of "best practices," the two lists parallel one another, as Chapter 2 described.

Findings regarding Attitudes and Beliefs of Classroom Control

The Attitudes and Beliefs of Classroom Control Inventory (ABCC) placed the PAEMST awardees on Wolfgang and Glickman's (1986) Teacher Behavior Continuum (TBC). The results show that the PAEMST teachers are strongly interactionalist in their attitudes and beliefs of classroom control for all three dimensions of the ABCC.

PAEMST awardees scored a mean of 9.9 (sd=1.7) on the people management scale. This places them precisely in the center of the interactionalist range of the ABCC. Martin, Yin and Baldwin (1998) surveyed 194 randomly chosen secondary teachers and found a mean of 7.38 (sd=2.49). This indicates that PAEMST awardees are clearly interactionalist in their people management attitudes and beliefs.

The PAEMST awardees scored a mean of 37.2 (sd=5.3) on the instructional management scale of the ABCC. This score represents strongly interactionalist

instructional management attitudes and beliefs. Martin, Yin and Baldwin (1998) surveyed a random sample of 196 secondary teachers and their mean was 41.76 with a standard deviation of 6.29.

The PAEMST awardees scored a mean of 22.2 (sd=4.3) on the behavior management scale of ABCC. This score represents a close fit between interactionalist attitudes and beliefs and the PAEMST award winner's attitudes and beliefs regarding behavior management. Martin, Yin and Baldwin (1998) found a mean of 17.76 (sd=3.89) from their sample of 196 secondary teachers.

Statistical analysis of the ABCC results of PAEMST awardees in Secondary Mathematics showed that that they differ in a statistically significant way from the secondary teacher population of Martin et al (1998) in all three dimensions of Classroom Management. The PAEMST awardees were more interactionalist in the dimensions of People Management and Instructional Management than the population of Martin et al (1998). In the dimension of Behavior Management, the PAEMST awardees, while interactionalist, demonstrated more pre-planning for management student behavior than the population of Martin et al (1998).

Findings regarding Career Stages

The fourth hypothesis, H_4 , posited that PAEMST award winners would be, predominantly, Career Stage 3 teachers as described by educational sociologists Rodman B. Webb and Robert R. Sherman in their seminal model of career stages (1989). Of the 40 teachers who responded to the survey, the career stage model could be applied to 32. Twenty-two were Career Stage 4 teachers. Two of the awardees were Career Stage 2 and

eight were Career Stage 3. The career stage model was invalid for eight of the teachers who did not follow a traditional career path.

Regarding career stage, it was hypothesized that PAEMST award winners would be predominately Career Stage 3 teachers. The results of the survey demonstrated that they were predominately Career Stage 4 teachers (66%), with only a small percent in Career Stage 3 (21%), Career Stage 2 (6%), or Career Stage 5 (6%). When gender was considered 75% of the female teachers were Career Stage 4 and 62% of the males were Career Stage 4. Webb and Sherman (1989) hypothesized that women in Career Stage 4 often make a renewed commitment to teaching. They further found them anxious to demonstrate their abilities in their profession. Congruently, this research determined that they are likely to apply for the PAEMST.

Men in Career Stage 4 typically are beginning to focus their time and energy outside of their teaching practice and are less career-oriented than they had been earlier in their teaching careers. Of the 40 teachers responding to the survey, only nine (23%) were men while 31 (77%) were women. This may be a reflection of the change in career focus for men. Webb and Sherman (1989) hypothesized that career Stage 3 would be the stage at which men were more concerned about recognition and advancement. Only one of the male respondents was a Career Stage 3 teacher while five were Career Stage 4 and two were Career Stage 2. Two scenarios are possible. Male teachers at Career Stage 3 did not seek recognition through the PAEMST process, or Career Stage 3 male teachers who applied for the award did not meet the criteria to receive the award.

Findings from the Qualitative Analysis of Unsolicited Comments

The large number of unsolicited comments indicates the strong feelings the PAEMST awardees possessed concerning attitudes and beliefs of classroom management. The quantity and strength of these comments presented an opportunity to examine the attitudes and beliefs of classroom management from a perspective different from the ABCC. The qualitative analysis of the unsolicited comments in Chapter 4 describes characteristics of the typical PAEMST awardee which further validates the results of the quantitative study. It is clear that the PAEMST awardees are teachers who take their responsibility to teach mathematics very seriously. It is also clear that they accept the responsibility to teach appropriate interpersonal skills to students and to model those skills in their classrooms. These teachers show a caring attitude towards their students, and they understand their students in a holistic manner.

Recommendations

Recommendations for Further Research.

While this research has shed light on the attitudes and beliefs of the PAEMST awardees, several new questions have emerged indicating the need for further research.

First, while the PAEMST awardees were encouraged to apply for the awards by administrators, peers, and others, nonetheless the application process requires a great deal of time to complete. Qualitative research should be done to ascertain the motivation for applying for the award.

Second, it is clear that the PAEMST awardees in secondary mathematics are interactionalist in their attitudes and beliefs of classroom control. A descriptive survey

should be employed to determine if teachers who are recognized for other awards share the same attitudes and beliefs.

Third, a descriptive study should be employed to determine whether interactionist attitudes and beliefs are a necessary condition for implementing “best practices.” This study needs to include teachers who are interventionist and non-interventionist in the sample.

Fourth, a descriptive study needs to be conducted to explore reasons why the majority of PAEMST secondary mathematics awardees are women.

Fifth, a descriptive study needs to be conducted of secondary teachers recognized for excellence from disciplines other than mathematics, to determine their attitudes and beliefs regarding classroom control. The purpose of this study would be to determine whether the interactionist attitudes and beliefs are universal among excellent teachers.

Finally, Webb and Sherman’s (1986) career stages model needs to be updated, especially insofar as it relates to non-traditional students. Other career models involving a cyclic view combined with Webb and Sherman (1986) may provide a more complete picture of the career teacher.

Recommendations for the World of Practice.

Since the PAEMST awardees do indeed possess the attitudes and beliefs of classroom control that are ideal for the implementation of “best practices” and, they also have demonstrated an understanding of “best practices” through the application process, these teachers represent a valuable resource for colleges and schools. These teachers should be used to help train new teachers and provide in-service to teachers in the profession.

State Offices of Public Education (OPI) should coordinate with the public schools in making the PAEMST awardees available for in-service training of classroom teachers. Money should be budgeted by either the OPI or the local schools to pay awardees for sharing their skills. A more public celebration of these skilful teachers should be coordinated by OPI to better inform the public of the significance of this recognition.

The teacher education colleges should include PAEMST awardees in training new teachers through methods classes. The focus should be on the implementation of “best practices” and the requisite attitudes and beliefs of classroom control. These excellent teachers can serve as inspiration and role models for prospective teachers.

Recommendations for Improving the Process of Selecting PAEMST winners

The survey contained a question asking the awardees how they felt the process could be improved. The responses to this question indicated that the awardees, in general were comfortable with the process, but felt that the inclusion of a video of teaching or an observation by the selection committee would have been valuable. One teacher wrote that she thought a portfolio of student work would have helped the committee make its decision.

Conclusions

The PAEMST awardees in secondary mathematics possess the characteristics of interactionist teacher attitudes and beliefs in all three dimensions of classroom management; People Management, Behavior Management and Instructional Management. The PAEMST awardees believe the following about each of these dimensions of classroom management:

1. **People Management for the PAEMST awardee means that they understand and accept the students in their classroom at a personal level. They understand that emotion and intellect are intertwined and that learning will be enhanced when they have good interpersonal relations with their students.**
2. **Behavior Management in the PAEMST teacher's classroom is a fine balance between teaching responsible behavior and enforcing rules that are agreed upon by both the student and teacher. The relationship between student and teacher minimizes behavior problems through good interpersonal relations among all in the classroom. Teachers and students respect each other.**
3. **PAEMST teachers who have clear curricular goals and clear expectations for student achievement enhance Instructional Management. While students are given freedom within the curriculum in meeting those goals and expectations, they are on task in class.**

This study has shown that PAEMST teachers provide a classroom environment that helps children grow socially as well as academically.

The application for the PAEMST award ensures that these teachers understand and apply the principles of "best practices." The National Science Foundation selects the PAEMST awardees using the criteria of:

1. **subject-matter competence;**
2. **sustained professional growth in science or mathematics and the art of teaching;**
3. **an understanding of how students learn science or mathematics;**
4. **ability to engage students through a variety of teaching strategies;**

5. ability to foster curiosity and to generate excitement about the uses of science and mathematics;
6. a conviction that all students can learn science and mathematics and a sensitivity to the needs of all students' cultural, linguistic, learning, and social uniqueness;
7. and experimental and innovative attitude in their approach to teaching; and
8. professional involvement and leadership (NSF, 1998).

These 8 criteria are congruent with the 13 points of "best practices" in Chapter 2.

PAEMST teachers are interactionalist in all three dimensions of classroom management, and they understand and implement "best practices" in their classrooms. With these two qualities assured it is apparent that they do indeed represent the best teachers in mathematics education in America's schools. The caring attitude, maturity, experience, skill, and enthusiasm displayed by these outstanding teachers ensure that they deserve the recognition afforded by the Presidential Award for Excellence in Mathematics and Science Teaching. The claim of the National Science Foundation (1998) that the PAEMST teachers "...represent a premier group of science and mathematics teachers and provide the nation with an impressive array of expertise to help improve teaching and learning..." is certainly true.

Appendix A
Approval for Instrument Use



March 10, 2000

Mr. Tim Skinner
13040 Rocky Butte Rd.
Ronan, MT. 59864

Dear Mr. Skinner,

As per your request, you have my permission to use the Attitudes & Beliefs on Classroom Control (ABCC) Scale. In exchange for its use, my co-authors and I request that you share the results of your study with us and that you cite us appropriately.

Full psychometric information regarding the ABCC can be found in the following article: Martin, N. K., Yin, Z., & Baldwin, B. (1998). Construct Validation of The Attitudes and Beliefs on Classroom Control Inventory. *Journal of Classroom Interaction*, 33 (2), 6-15.

If you should need any additional information regarding the ABCC, please feel free to contact me at nmartin@utsa.edu or 210-458-5426. I appreciate your interest on our work.

Sincerely,

Nancy K. Martin, Ed.D.
Associate Professor
Educational Psychology

Xc: Zenong Yin
Beatrice Baldwin

Appendix B

ABCC Inventory and Career Stages Survey

.

Tim Skinner
 1340 Rocky Butte Road
 Ronan, MT 59864
 January, 2000

Attitudes and Beliefs of Classroom Control Inventory

There are no incorrect responses. Good teachers hold a wide variety of beliefs. Please reflect on your response and place a check on the statement best reflecting your belief and attitude.

1. I believe the teacher should direct the students' transition from one learning activity to another.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
2. I believe it's important to continuously monitor students' learning behavior during seatwork.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
3. I believe students should create their own daily routines as this fosters the development of responsibility.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
4. I believe that students will be successful in school if allowed the freedom to pursue their own interests.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
5. I believe the teacher should decide what topics the students study and the tasks used to study them.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
6. During the first week of class, I will announce the classroom rules and inform students of the penalties for disregarding the rules.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
7. The teacher knows best how to allocate classroom materials and supplies to optimize learning.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
8. When a student bothers other students, I will immediately tell the student to be quiet and stop it.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually

	<input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
9. I believe class rules stifle the student's ability to develop a personal moral code.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
10. While teaching a lesson on library skills, a student begins to talk about the research she is doing for her book report. I would remind the student that the class has to finish the lesson before the end of the class period.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
11. I believe teachers should require student compliance and respect for law and order.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
12. When moving from one learning activity to another, I will allow students to progress at their own rate.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
13. If students agree that a classroom rule is unfair, then I would replace it with one that students think is fair.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
14. I believe that students need the structure of a daily routine that is organized and implemented by the teacher.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
15. I allow students to select their own seats.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all

16. When students behave appropriately, I will provide a reward of some kind such as points towards a party or free time.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
17. I believe students should judge the quality of their own work rather than rely on what the teacher tells them.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
18. I believe students will be successful in school if they listen to the adults who know what's best for them.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
19. I believe that students should choose the learning topics and tasks.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
20. During the first week of class, I will allow the students to come up with a set of classroom rules.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
21. I believe the primary purpose of homework is to provide drill and practice of skills learned in the classroom.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
22. I believe that students need direction in how to work together.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
23. Students in my classroom are free to use any materials they wish during the learning process.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all

24. I specify a set time for each learning activity and try to stay within my plans.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
25. I believe friendliness, courtesy, and respect for fellow students is something that students have to learn first-hand through free interaction.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all
26. I believe class rules are important because they shape the student's behavior and development.	This statement <input type="checkbox"/> Describes me very well <input type="checkbox"/> Describes me usually <input type="checkbox"/> Describes me somewhat <input type="checkbox"/> Describes me not at all

Demographic Information

1. I best fit the following age group:

- 21 to 28 years of age
- 29 to 33 years of age
- 34 to 40 years of age
- 41 to 55 years of age
- 56 years of age or older

2. My gender is

- Female
- Male

3. How many years have you been a classroom teacher? _____

4. What year did you sign your first teaching contract? _____

5. How were you nominated for this award?

- Self
- By an administrator
- By a peer
- Other (Please explain)

6. What grade levels do you teach? High school
 Middle school
 Both
7. Please mark the selection that most closely reflects your level of education:
- | | |
|---|---|
| <input type="checkbox"/> Bachelors | <input type="checkbox"/> Master's plus 15 credits |
| <input type="checkbox"/> Bachelor's plus 15 credits | <input type="checkbox"/> Master's plus 30 credits |
| <input type="checkbox"/> Bachelor's plus 30 credits | <input type="checkbox"/> Master's plus 45 credits |
| <input type="checkbox"/> Bachelor's plus 45 credits | <input type="checkbox"/> Doctorate |
| <input type="checkbox"/> Bachelor's plus 60 credits | |
| <input type="checkbox"/> Bachelors plus 75 credits | |
| <input type="checkbox"/> Bachelors plus 90 credits | |
| <input type="checkbox"/> Masters | |
8. Are you currently working towards another degree? Yes No
9. How could the application process have been improved to give the selection committee a more complete picture of your qualities?
10. Would you like a copy of the summary of this research? _____

Tim Skinner
 1340 Rocky Butte Road
 Ronan, MT 59864
 January, 2000

Appendix C

Letter to PAEMST Awardees

January 3, 2000

«First» «Last»
«Address»
«City», «State» «Zip»

Dear «First» «Last»,

Congratulations on being selected as a Presidential Award winner in mathematics at the secondary level. As an outstanding teacher who will have a great deal of influence on the teaching profession your opinions are of great interest to us. We hope you can take a few minutes of your time to complete the survey attached.

Your beliefs and attitudes regarding classroom management are the subject of this research. There are no wrong answers and no attempt will be made to identify you or your school individually. Responses will be analyzed and reported in aggregate form. We feel that this research will add to the knowledge base regarding attitudes and beliefs of classroom management of those identified as outstanding teachers. We hope that you choose to participate.

In advance we thank you for the careful completion of this work. If you would like a synopsis of the findings, the final page offers you that opportunity. Please use the self-addressed envelope and return this work by January 31, 2000.

Sincerely,

Tim Skinner
Doctoral student
The University of Montana

Appendix D
Unsolicited Comments

People Management

I believe that students will be successful in school if allowed the freedom to pursue their own interests.

“Yes if curriculum related- No if time wasting.”

“True, but in the real world we all have to do things that don’t interest us.”

“In the middle and elementary schools, I question the maturity level in this belief.”

“When given a limited number of choices.”

I believe students will be successful in school if they listen to the adults who know what’s best for them.

“Who is this God-like adult?”

“There is value in listening.”

“They have to believe in the adult.”

I believe that students need direction in how to work together.

“Johnson & Johnson and Kagen both stress need to teach social skills.”

“Remind them how to best use time.”

I believe friendliness, courtesy, and respect for fellow students is something that students have to learn first-hand through free interaction.

“?”

“?”

“Learned by seeing- actions modeled”

“What does this mean?” (Referring to free interaction)

Behavior Management

During the first week of class, I will announce the classroom rules and inform students of the penalties for disregarding the rules.

“We have very few rules – just common sense ones.”

“I give guidelines and procedures, but...”

“The classroom rules are not decided by me alone.”

“Good teachers don’t need penalties.”

When a student bothers other students, I will immediately tell the student to be quiet and stop it.

“& find out why.”

“Are they talking math? If it is really bothering yes- I will deal with it.”

“The “look” usually works.”

“Sometimes, not often”

“Or address it in an appropriate manner.”

“I like to hear the causes. I may be misunderstanding the situation.”

“Sit down with them and work with them.”

I believe class rules stifle the student’s ability to develop a personal moral code.

“Class rules are guidelines needed- their personal moral code may step on other people.”

“When students understand that to get respect, they must show respect, everything works.”

I believe teachers should require student compliance and respect for law and order.

“Sounds harsh- but I want the other drivers on our crazy streets to obey rules.”

“Sometimes kids need space on their “bad days” if they don’t interfere with others.”

“It should be earned.”

If students agree that a classroom rule is unfair, then I would replace it with one that students think is fair.

“I have never had this problem.”

“I only have one rule. That rule is show respect.”

“Mine all are fair”

“I would have to support their reasoning to some degree.”

When students behave appropriately, I will provide a reward of some kind such as points towards a party or free time.

“Brain research discourages rewards and encourages celebrations.”

“Only for substitutes.”

“There is a reward, but not these.”

During the first week of class, I will allow students to come up with a set of classroom rules.

“A goal, but not well done by me.”

“Combination”

“We don’t have classroom rules.”

“Does not apply.”

I believe class rules are important because they shape the student's behavior and development.

"No!"

"I believe in class rules, but disagree with the last part."

"They have to feel that the rules are not being imposed on them."

"Help shape behavior- If well devised and honestly and 'lovingly' enforced they can help development

Instructional Management

I believe the teacher should direct the students' transition from one learning activity to another.

"not direct- discover or lead"

"not clear"

"students may direct it as well"

"also anticipate which learning style will be most appropriate"

I believe it's important to continuously monitor students' learning behavior during seatwork.

"I give relatively little seatwork, but when I do I believe such."

"to assist, be available"

I believe students should create their own daily routines as this fosters the development of responsibility.

"Expectations need to be made clear."

"There are often disruptions to the routine. Handling these is important."

"High School?"

I believe the teacher should decide what topics the student's study and the tasks used to study them.

"With the experience to know what they will find interesting."

'Teacher- objectives, concepts, Student- themes, topics"

"I don't have that freedom. District and state objectives determine this."

"Yes- but open to ideas, suggestions and circumstances."

The teacher knows best how to allocate classroom materials and supplies to optimize learning.

"As long as I stay informed of what's out there."

While teaching a lesson on library skills, a student begins to talk about the research she is doing for her book report. I would remind the student that the class has to finish the lesson before the of of the class period.

"Rarely would I stifle real world interest."

"I don't teach such lessons."

When students move from one learning activity to another, I will allow students to progress at their own rate.

"Within reason"

"Within limits"

"With guidance"

I believe that students need the structure of a daily routine that is organized and implemented by the teacher.

"brain compatible instruction"

"combination"

“If it is too routine it is boring.”

I allow students to select their own seats.

“Rarely – unless it’s an unstructured non-academic activity.”

“They get input, but I write seating charts to facilitate groups.”

I believe that students should judge the quality of their own work rather than rely on what the teachers tell them.

“I use peer and self evaluation as part of my evaluation plan.”

“but I still have to grade the work.”

I believe that students should choose the learning topics and tasks.

“When possible- multiple tasks possible”

“Select from the choices I offer.”

I believe the primary purpose of homework is to provide drill and practice of skills learned in the classroom.

“It is to extend learning outside the classroom.”

“I believe homework is necessary to reinforce concepts, not meaningless problems that students don’t understand.”

“Opportunity to think about something without relying on me.”

Students in my classroom are free to use any materials they wish during the learning process.”

“calculators”

I specify a set time for each learning activity and try to stay within my plans.

“Maximize the activity as I see how its going.”

“I’m too random and an activity is over when kids understand.”

Responses to Improving the Selection Process for the PAEMST

Question number nine on the survey asked, "How could the application process have been improved to give the selection committee a more complete picture of your qualities?" Many of the awardees responded. Their comments are recorded below.

"Submitting a videotape of my classroom would allow others to see the kind of learning atmosphere in my classroom."

"Seeing my classroom firsthand is helpful. However, the logistics make that impossible."

"I felt the choices given would not express all of my thoughts."

"I believe the teacher must set the tone for the classroom, and direct but not 'control' the students. Classroom control is not a topic that interests me very much I'm afraid. The survey seems fine as is."

"I thought the application process was fair and thorough."

"Videotape of actual learning – Survey of students – Require a letter from a student or their parent."

"Allow for the submission of a video taped lesson of the teacher interacting with the students in a classroom learning environment."

"Give students, parents, administrators, and peers a survey to complete on the PA applicant."

"I can't imagine- the process was extensive and complete."

"Maybe instead of all the paperwork, do a ten minute video."

"I think the process is just fine."

“A portfolio of student work that fits on one 8 ½ by 11 page.”

“Video”

“Observation- but I realize that is not practical.”

“No suggestions.”

“Allow about one page that is not quite so restrictive, so the applicant can just have the opportunity to express something special about his/her teaching.”

“I know that it would be time consuming, but add the component of a personal interview for the top five candidates at state level.”

“Possibly add a video of teaching.”

“More student work samples, submit assessments and scoring rubrics, projects assigned.”

“I have no suggestions.”

“Interview candidates face to face.”

“All they know is what you write and you could lie. But even observations can be fake. They have to rely on your words and the recommendation letters.”

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