A COMPARATIVE ANALYSIS OF THE PERCEPTIONS OF SPECIAL EDUCATION TEACHERS REGARDING EDUCATIVE ACTIVITIES TO FURTHER DEVELOP TEACHING SKILLS

A Dissertation

by

THERESA AROCHA-GILL

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2010

Major Subject: Educational Human Resource Development

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Approved by:

Co-Chairs of Committee,	Homer Tolson
	Toby Egan
Committee Members,	Fredrick Nafukho
	Alvin Larke, Jr.
Head of Department,	Fredrick Nafukho

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Major Subject: Educational Human Resource Development

ABSTRACT

A Comparative Analysis of the Perceptions of Special Education Teachers Regarding Educative Activities to Further Develop Teaching Skills. (May 2010)

Theresa Arocha-Gill, B.A., Trinity University;

M.Ed., College of William and Mary

Co-Chairs of Advisory Committee: Dr. Homer Tolson
Dr. Toby Egan

A comparative analysis of the perceptions of special education teachers in the San Antonio Independent School District (SAISD) regarding the importance, comfort, and frequency levels of educative activities to further develop their teaching skills was conducted by the researcher in order to apply findings to the development of future professional learning opportunities for this group of educators and to the role of human resource development (HRD) with regard to adult learning and organizational processes. Responses were elicited from a selection of educative activities listed on a questionnaire instrument that was distributed to a non-proportional, stratified random sampling from the district's total population of special education teachers in the fall of 2006.

Multivariate analyses of variance resulted in no significant differences in the importance, comfort, and frequency levels of educative activities as rated by special education teachers regardless of teaching level or years of teaching experience. The primary conclusions drawn from this study were: (a) mean responses were homogenous at the group level regardless of the educative activity; (b) there were no significant

perceptual differences found with regard to the rating of educative activities by importance, comfort, and frequency; and (c) there was a need for more research in this area to further investigate or substantiate findings due to the exploratory nature of the study's design.

Recommendations include:

1. Large scale research comprised of similar teacher samplings and research design to add to existing studies regarding the perception and selection of educative activities by special education teachers to further develop teaching skills.
2. Large scale research comprised of similar teacher samplings and research design to explore special education teacher perceptions regarding adult learning and the role of human resource development and other district department professionals in order to add to existing research when designing professional learning opportunities for this teacher group.
3. Review of the questionnaire instrument since no significant differences were found. Items listed should include activities that are distinctly different from each other. In addition, educative activities may need to be added or subtracted depending on new findings from research.

DEDICATION

I would like to dedicate this dissertation to the special education teachers of the San Antonio Independent School District and to the Texas A&M professors who facilitate and guide distance learners through program completion.

ACKNOWLEDGEMENTS

I am much indebted to the following individuals for guiding me through this research journey. A special thanks to Dr. Linda Glessner, who believed that I should make this journey and who provided inspiration along the way. Her energy instills in anyone who knows her the belief that one can do anything. A special thanks to Laura Rodriquez and Diana Canavan, who cheered me on. A special thanks to Dessynie Edwards and Sharon Callihan, who taught me the importance of believing in myself and personal strengths. A special thanks to the SAISD Department of Special Education Services staff, particularly Dr. Stella Carreon, who kept me going when I thought I could not finish.

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CHAPTER I

INTRODUCTION

The existing field of research regarding professional learning opportunities for teachers, as well as other professional groups, does not have a long history and it is only within the past 20 years that researchers have begun to provide systemic processes that help determine how professionals learn. While researchers have found that professional learning opportunities for teachers have led to improved instruction and student learning (Borko, 2004), there existed a need for more research to ascertain how and what teachers learn from professional learning opportunities and, specifically, educative activities associated with professional learning. While traditional professional learning opportunities continued to be the most used method of developing teaching skills for teachers, Cervero and Dimmick (1987) found that professionals learned in a variety of ways and through a myriad of educative activities (Borko, 2004).

The first theoretical framework used to conceptualize the dynamic nature of professional learning occurring among professional groups was found in the research of Houle (1980, 1984). Houle identified three structural forms of educative activities that conveyed knowledge, skills, and sensitiveness across professional groups, and his work has been used by researchers from various professional areas as a tool to understand how professionals learn (Cervero & Dimmick, 1987; Houle, 1980, 1984). In his original work, Houle (1980) identified three overlapping modes of learning for professionals: (a) inquiry, (b) instruction, and (c) performance. In 1987, Cervero and Dimmick

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This dissertation follows the style of *The Journal of Educational Research*.

expanded upon Houle's research and empirically tested his original framework. Cervero and Dimmick supported Houle's theoretical framework, but they revised his original typology and divided the mode of instruction into two separate modes of learning—group instruction and self-instruction. Thus, Cervero and Dimmick (1987) proposed four modes of learning. In addition, Cervero and Dimmick differentiated between those educative activities that professionals planned for themselves from those activities that were planned by others (Cervero & Dimmick, 1987). Their research contained analytical frameworks that could help researchers identify the learning activities performed by professionals. Through the application of empirically tested analytical frameworks to analyze educative activities used by professionals, researchers, and leaders could begin to research and discuss why professionals undertake certain educative activities and how to integrate educative activities into professional learning opportunities (Cervero & Dimmick, 1987).

The research conducted by Houle (1980), and Cervero and Dimmick (1987) was significant and their work was the basis for subsequent studies. Developers of professional learning opportunities considered the structured forms of learning when planning profession-wide continuing education and training activities, and these professional learning opportunities included a wide variety of educative activities found in each of the four modes of learning (Cervero & Dimmick, 1987). While the work of Cervero and Dimmick (1987) revised Houle's typology and provided an analytical framework to account for structural forms of professionals' continuing learning, they acknowledged that more work had to be done with other professions.

What is currently known about professional learning activities and practices for teachers? Researchers have indicated a variety of training methods that have shown promising results; however, Cervero (2000) found that there was no system of professional learning that met the needs of most professionals including teacher professionals. With regard to educators, traditional professional learning opportunities for teachers continued to include a fragmented approach to disconnected topics (Gelman, Pullen, & Kauffman, 2004). Teachers were found to need more training on research-based programs and strategies with follow-up sessions. While the strategy of peer coaching teams was found to be an effective way to improve understanding and implementation, existing research regarding the identification of effective professional learning opportunities for teachers was limited or not comprehensive (Lang & Fox, 2003).

Houle (1980) predicted that social change, research-based knowledge, and technological innovations would require professionals to participate in professional learning experiences in order to improve their practice throughout their lifetime of work. In contrast, Cervero (2000) stated that for many years, professions and their members felt that a professional's initial education would be sufficient for a lifetime of work. Knowing that this thinking was not effective, Cervero (2000) proposed a need for professions to develop systems that would keep their members up-to-date on the profession's knowledge base and called for professions to establish partnerships with political, economic and community groups, and with institutions of higher learning.

The current provision for high quality professional learning delineated in the No Child Left Behind Act of 2001 (NCLB) for teachers was found to have implications for professional learning developers, school districts, educators, and researchers (U.S. Department of Education, 2001). Not only did the NCLB Act of 2001 include provisions that teachers must meet specified "highly qualified" requirements, but it also included that state education agencies must ensure high quality professional learning opportunities for all teachers by the year 2006 (U.S. Department of Education, 2001). While the NCLB Act of 2001 included mandates whereby education agencies must ensure the implementation of high-quality professional learning opportunities, educators and researchers have found the steps depicted in the education act to be unclear and that there was a further necessity for more research. (Berry, Hoke, & Hirsch, 2004; Rebell & Hunter, 2004). Lastly, the NCLB Act of 2001 included legislative recommendations such as the establishment of professional learning partnerships with universities and colleges, opportunities to work with experienced teachers, and time to collaborate with professors.

Researchers such as Gelman et al. (2004) stated that the NCLB Act of 2001 requirements have led to more questions than answers. They reminded us that the federal government cannot mandate university-school partnerships, and more guidance was needed in order to begin to develop high-quality professional learning. These researchers proposed that school districts educate teachers on the importance of research-based programs and promote research-based teaching strategies and techniques in their professional learning trainings. Most researchers conceded that only a long-term

commitment to research and reform would produce the information needed by states and districts to develop professional learning opportunities that would lead to the improvement of teacher learning and student performance (Gelman et al., 2004).

With professional learning regulations imbedded in current legislation, these opportunities must be based on researched practices. This has forced researchers to reexamine the kinds of studies that are needed to identify characteristics of effective teacher education programs, professional learning opportunities, and educative activities that help teachers improve student achievement. Some researchers have shown that teachers with pedagogical and content preparation are more successful in engaging students in the learning process than those teachers who are not prepared in these areas (Wilson, Floden & Ferrini-Mundy, 2001). However, much of this existing research was limited to small sample groups, select institutions, and select programs. The findings of two large-scale studies by the Association of American College of Teacher Education (AACTE) and the International Reading Association (IRA) did find teacher education programs with a coherent programmatic vision, a constructivist approach to teaching, and opportunities for application of course-based knowledge in real classroom settings to be more successful than those programs without these key factors (National Center for Research on Teacher Learning [NCRTL], 1991; Wideen, Mayer-Smith, & Moon, 1998).

In the field of special education, researchers have found limited studies and a research base that did not compare to studies found in the area of general education. In addition, alternative certification programs have emerged, thus making the research of teacher education programs and practices even more difficult because these types of

teacher preparation programs differed from traditional teacher education programs (Brownell, Ross, Colón, & McCallum, 2005). With new research findings in the area of subject-matter preparation, comparative studies or much research in this area with regard to special education was difficult to find. Most research in the area of special education focused on instructional interventions and not on subject-matter instruction. Research by Leko and Brownell (2009) included the use of educative activities by special education teachers. Specifically, they recommended that teachers engage in activities that are presented by experts in the field, content-based, collaborative, and reflective.

New changes in legislation, specifically the 1997 and 2004 amendments to the Individuals with Disabilities Education Act (IDEA) and the 2002 implementation of the No Child Left Behind (NCLB) Act of 2001, have led to the emergence of new questions in this area. Can special education teachers implement effective interventions even though they do not have a deep content area knowledge-base? If research indicated that subject-matter knowledge and preparation is needed to improve student achievement levels, how can special education teachers who teach multiple content areas teach in an effective manner? Much more research in this field was found to be needed. Specifically, there was a need to develop frameworks that could help researchers determine effective practices in teacher education in the area of special education. Researchers have found that there was a need to expand the current special education research base, and there was a need for pedagogical change with regard to how special education teachers and educators view teaching (Brownell et al., 2005).

Since it is through the provision of professional learning experiences and educative activities that teachers further develop their teaching skills, human resource development (HRD) professionals and other school district department professionals were found to need to stay abreast of adult learning theories and those processes that build the capacity of their teacher workforce in order to meet the goal of high student performance. HRD and department professionals must apply adult learning principles when designing professional development opportunities for teachers in order to ensure that the workforce continuously meets organizational performance goals.

Statement of the Problem

With the passage of the NCLB Act of 2001, which included a provision for high quality professional learning, there is a need for more research in the area of learning opportunities for teachers, specifically, in the area of special education. While education reform provisions are not new, it was feared that educators would not be able to accomplish their goal of providing high quality professional learning opportunities to teachers if provisions within the NCLB Act of 2001 and supporting research did not provide clear, specific, and realistic direction. The issue of high quality professional learning became especially important since this education act included the requirement that states must develop professional learning opportunities based upon research-based knowledge and practices.

Purpose of the Study

The primary purpose of this study was to apply research findings found in the work of Houle (1980, 1984), and Cervero and Dimmick (1987) to the study's research

design and to the development of its questionnaire instrument. Specifically, analyses were applied to data gathered from questionnaires completed by the study's sampling of SAISD special education teachers who were classified by teaching level and years of teaching experience. Results from analyses were used to determine how special education teachers in SAISD rated education activities with regard to importance, comfort, and frequency. A basis for further research regarding the use of educative activities to further develop teaching was provided in this study.

Research Questions

For special education teachers in SAISD who differed in terms of teaching levels, answers to the following questions were sought in this study:

1. Is there a significant difference in terms of perceived importance concerning educative activities to further develop teaching skills?
2. Is there a significant difference in terms of perceived comfort concerning educative activities to further develop teaching skills?
3. Is there a significant difference in terms of perceived frequency concerning educative activities to further develop teaching skills?

For special education teachers in SAISD who differed in terms of years of teaching experience, answers to the following questions were sought in this study:

4. Is there a significant difference in terms of perceived importance concerning educative activities to further develop teaching skills?
5. Is there a significant difference in terms of perceived comfort concerning educative activities to further develop teaching skills?

6. Is there a significant difference in terms of perceived frequency concerning educative activities to further develop teaching skills?

It should be noted that this study did not address the interaction of teaching levels by years of teaching experience due to small cell sizes that resulted from the cross classification of these two independent variables.

Assumptions

1. The interpretation of the data collected accurately reflected what was intended by those surveyed.
2. The respondents surveyed understood the scope of the study and the language of the instrument, were competent in self-reporting, and responded honestly and objectively.
3. The respondents were able to rate the importance, comfort, and frequency levels of listed educative activities through the utilized instrument.
4. The methodology proposed and described was the most logical and appropriate design for this particular research project (Gall, Borg, & Gall, 1996).
5. The researcher was impartial in the collection and analysis of the research data.

Limitations

1. The study was limited to the information acquired from the literature review and the self-assessment questionnaire instrument.

2. The study was restricted to the selection of educative activities listed in the questionnaire instrument.

Delimitations

A sampling of special education teachers assigned to elementary, middle, and high school teaching levels and who differed by years of teaching experience in the San Antonio Independent School District (SAISD) during the fall of 2006 were participants in this study. The results of the study may be generalized to the populations of special education teachers in SAISD only. Because the study was conducted on a non-proportional, stratified random sampling of special education teachers in a school district whose demographic characteristics may not be representative of all areas of the United States, the results may not be generalized to special education teachers in other geographic areas.

Significance of the Study

While education reform initiatives are not new, the goals of past reforms have been found by researchers to be unfulfilled due to a lack of research and long-term commitment to designing and conducting longitudinal studies with similar participant samplings (Gelman et al., 2004). For many years, researchers and educators have known that there was a need for further and more extensive study to ascertain how professional educators learned and to determine the characteristics of effective professional learning opportunities. However, educators are aware of the time-sensitive provisions for high-quality professional learning found in the No Child Left Behind (NCLB) Act of 2001 and have raised a sense of urgency for more research.

Findings from this study could be used to develop recommendations that may assist in improving the teaching skills of special education teachers by integrating highly effective educative activities into professional learning opportunities. Information regarding teacher use of educative activities to develop their teaching skills could be used to assist the SAISD in planning professional learning opportunities for special education teachers.

Operational Definitions

For the purpose of this study, the following terms have been defined in order to provide a common focal point and level of understanding:

Cervero and Dimmick's Four Modes of Learning: Cervero and Dimmick (1987) expanded Houle's three modes of learning among professions to four modes that include inquiry, performance, group instruction, and self-instruction.

Comfort Level: Comfort level is divided into four intervals with a corresponding numerical value ranging from 1 (indicating no comfort) to 4 (indicating high comfort).

Comparative Analysis: Comparative analysis is a statistical technique used to compare means, variances, and other statistical applications from data results.

Department of Human Resources: The Department of Human Resources is an entity formed within an organization in order to organize their human workforce and work in a way that best supports the organization's goals.

Educative Activities: Educative activities are those efforts that provide opportunities for professionals, specifically teachers, to improve practices and strategies and to stay abreast of current trends with regard to their profession's knowledge base.

Expertise: Expertise is acquired when people confront new situations in terms of what they know. Experts have the ability to solve problems and generate new knowledge dependent on available knowledge that may have to be modified and restructured. Experts show fast access to multiple possible interpretations as new problem features are introduced and result in changed problem representations (Glaser, 1985).

Frequency Level: Frequency level is divided into four intervals with a corresponding numerical value ranging from 1 (indicating rarely used) to 4 (indicating frequently used).

Group Instruction: Group instruction is defined as activities that involve the discrimination of established knowledge through group formats such as course work, workshops, panels, and conferences. The instructor already knows what the participants will learn. Most activities in this area are other-planned, and group instruction activities are primarily educative in nature (Cervero & Dimmick, 1987).

Houle's Three Modes of Learning: Houle's (1980) research included a theoretical framework that included three modes of learning for professionals who seek professionalizing goals in their select vocations. Houle's three modes of learning are the modes of inquiry, instruction, and performance.

Importance Level: Importance level is divided into four intervals with a corresponding numerical value ranging from 1 (indicating no importance) to 4 (indicating high importance).

Inquiry: Inquiry is defined as the "process of creating some new synthesis, idea, technique, policy, or strategy of action" (Houle, 1980, p. 31). Mode of inquiry can be seen in the structured form of discussion and encounter groups, seminars, and guided experiences to help people achieve new ideas or new ways of thinking, though the outcome cannot be predicted in advance. Learning is a by-product from activities directed at "establishing policy, seeking consensus, working out compromises, and projecting plans" (Houle, 1980, p. 31). Most activities in this mode are other-planned. Inquiry activities have learning as a motivation, but the learner may not have a desired knowledge or skill in mind. Inquiry activities are considered secondarily educative (Cervero & Dimmick, 1987).

Performance: Performance is defined as the process of internalizing an idea or using a practice habitually, so that it becomes a fundamental part of the way in which a professional thinks about and undertakes his or her work (Houle, 1980). Pre-service professional experiences are often seen in the structured forms of drill, supervision, and through presentations. Evaluation of this mode is measured through actual, observed performance by peers, supervisors, appraisers, etc. In addition, performance activities are self-planned by the individual professional. A professional can seek advice and information from various

individuals and materials but still retain control of and responsibility for decisions (Cervero & Dimmick, 1987). The person can obtain knowledge and skill from a variety of individuals, books, and programs without giving up the responsibility for deciding when to use any or all of these resources (Tough, 1979). Performance activities have learning as a motivation, but learning outcomes are not known in advance. Performance activities are considered secondarily educative (Cervero & Dimmick, 1987).

Professional Learning Opportunities Professional learning opportunities include processes and activities designed to enhance professional knowledge, skills, and attitudes in order to improve performance. For teachers, professional learning opportunities enhance their knowledge and skill in order to improve student performance and teaching practices. For purposes of this study, professional development and professional learning opportunities have the same operational definition. The teachers sampled attended at least two of five SAISD professional learning opportunities that included (a) TEKS Towers (curriculum scope and sequence); (b) Integrated Skills Method (ISM); (c) Math Exploration; (d) the Frayer Model reading strategy, the Know, What, and Learn (KWL) reading strategy; and (e) Think Aloud reading strategy.

San Antonio Independent School District (SAISD): SAISD is a public school district located in San Antonio, Texas, with an approximate student enrollment of 55,000.

Self-Instruction: Self-instruction is defined as activities where books or other sources are the teachers. The professional plans what needs to be learned as opposed to another resource or person planning what they need to learn. Self-instruction activities are self-planned, and self-instruction activities are primarily educative in nature (Cervero & Dimmick, 1987).

Special Education Teachers: Special education teachers are those teachers currently employed by SAISD and who meet Texas teacher certification requirements to teach in the area of special education.

Teaching Skills: Teaching skills include instructional knowledge, methodology, and strategies that improve student learning through measurable means such as national, state, district, and informal assessment scores.

Contents of the Dissertation

Chapter I is an overview of the theoretical foundations related to (a) the study of educative activities to further develop teaching skills, (b) the documented need for the present study, (c) the posed research questions, and (d) the operationally defined variables. Chapter II is an overview of previous research relevant to the theory of how teachers learn and further develop teaching skills. Chapter III is a presentation of specific questions tested in the present study, a description of the instrument used and the subjects who participated in the study, a description of the procedures used to gather and analyze the data, and a description of factor analysis results. Chapter IV is an analysis of the results of the study, and Chapter V is a discussion of the conclusions,

recommendations, and implications of these results in terms of current theory and future research.

CHAPTER II

REVIEW OF THE LITERATURE

> The quality of learning that takes place in an organization is affected by the kind of organization it is.
>
> –adapted from Marshall McLuhan

Introduction

For HRD professionals in school systems, the teacher workforce was considered to be the most valuable and important resource to their organization's success. Without high quality teachers, school districts could not accomplish their primary goal of high student achievement and performance. Organizations measure goal attainment through performance indicators; therefore, an important role for HRD was to incorporate those practices that continuously built knowledge and expertise in order to promote and improve organizational goals. With regard to this study, the question of how professional learning opportunities and educative activities can help teachers develop their teaching skills and, thereby, impact teacher performance was explored. In addition, the question of how HRD can improve teacher performance and ensure the maintenance of a quality teacher workforce was researched and included in the review of the literature.

Most HRD professionals have agreed that a key role for HRD is to focus on maximizing organizational performance outcomes through their workforce (Knowles, Holton, & Swanson, 2005). Others have maintained that HRD should focus on individual development without using organizational performance as a significant measure of worth (Dirkx, 1996). Holton (1998) bridged this gap between organizations and individuals by encouraging HRD professionals to pay attention to performance

outcomes, such as the delivery of high-quality services, and to performance drivers, such as learning and process improvements. For most organizations, performance variables included the following components: (a) mission statements/goals, (b) systems, (c) capacity, (d) motivation, and (e) expertise. All of these variables were found to be impacted by three key performance levels: (a) organizational, (b) process, and (c) individual. High organizational competency was directly dependent on the existence of quality knowledge and expertise in all of the performance variable and level areas (Knowles et al., 2005). Without question, adult learning was stated to play an important role to maintain performance and to improve upon it. Thus, HRD was found to have the potential to become a powerful organizational improvement strategy when it was allowed to become an integral part of an organization's performance system. While it was understood that not all functions of HRD revolved around training or adult learning, adult learning was considered to be HRD when adult learning outcomes and learning processes were controlled by the rules and requirements of an organization (Knowles et al., 2005). For this study, adult learning was viewed from the perspective that it plays a critical role with regard to the advancement of an organization's goals. Lastly, current findings regarding alternative teacher certification programs and HRD roles unrelated to training or adult learning were found to have an impact on the teacher workforce and selection process.

With respect to the purpose of this study, the review of the literature included research that identified professional learning as a field of study and also listed what was known about effective professional learning systems. In addition, a look at research

directly tied to the concept that professionals do use educative activities to further develop their skills was reviewed. Since this study's analysis included findings by teaching level and by years of experience, research that identified the professional learning needs of novice and experienced teachers was also included. A comparative look at how general and special education teacher programs differed was also explored. Lastly, the impact of HRD with respect to adult learning and non-adult learning roles was examined.

Specifically, the review of the literature related to this study included: (a) professional learning as a field of study, (b) an empirically tested framework regarding educative activities, (c) effective professional learning systems and educative activities, (d) the existence of emotive connections in professional learning, (e) professional learning considerations for beginning teachers, (f) educative activities used by beginning teachers to develop teaching skills, (g) professional learning considerations for expert teachers, (h) educative activities used by expert teachers to develop teaching skills, (i) professional learning in Texas and in SAISD, (j) comparative studies regarding teacher preparation programs for general and special education teachers, (k) professional learning considerations for special education teachers, (l) educative activities for special education teachers, (m) finding quality teachers through the use of an effective interview process, (n) alternative certification programs and special education, and (o) HRD and the adult learning process.

It was proposed that results from this study could provide information to SAISD professionals in the Department of Curriculum and Instruction and the Department of

Special Education Services, as these departments plan professional learning opportunities for special education teachers in the SAISD. In addition, it was proposed that results from this study could provide information to professionals in the SAISD Department of Human Resources as teacher selection and workforce processes are reviewed, developed, and implemented. The findings of this study could be used as a basis for further research with regard to the SAISD special education teacher population and to the identification of those educative activities that could lead to improved teacher performance and promote teacher learning.

Professional Learning as a Field of Study

For purposes of this study, teachers were defined as those individuals who have met established state teacher certification requirements and were identified as professionals. With the concept of "profession" linked to lifelong learning or education as a means to improve practice and study (Houle, 1980), the field of professional learning originated as a way to keep professionals current and as a way to discuss future trends and issues regarding practice and study by the 1980's. For Houle (1980), the primary goal of any type of professional learning opportunity was effective learning, and he believed that this could only occur through participation in educative activities. Therefore, professional learning opportunities must be comprised of those effective educative activities that had the potential to produce learning (Cervero, 1988). Early professional learning opportunities included activities such as short courses, lecture series, and conferences. As newer devices and techniques were developed, professional learning opportunities included self-directed studies, mentoring activities, mastery

learning, study leaves, and experiential learning opportunities. Houle (1980) predicted that the kinds of learning opportunities used by professional groups would be closely tied to the way a profession seeks to improve itself, to those experiences needed by a professional to perform well throughout his or her career, and to those needs that would assure the continual effectiveness of the profession.

The 1980's marked the beginning of professional learning as a practice of study, and it was in this same time period that professional learning became a predominant system to update the professions. In addition, there was a shift in thinking that began in the 1960's and ended in the 1980's, where many professions addressed the need for continuous professional learning by developing systems of accreditation, relicensure, and recertification. In the past, many professional leaders believed that initial professional learning opportunities were sufficient to prepare professionals for their chosen profession. With the explosion of research-based knowledge and technological innovations, professional leaders accepted the need to continuously update their membership throughout their entire professional careers. By the 1980's, most professions, including public school education, had organized comprehensive professional learning programs (Cervero, 2001).

As professionals, the majority of teachers were found to continue to develop their teaching skills through the use of formal professional learning opportunities that included workshops and summer institutes with some change in delivery over the years. In the 70's and 80's, the primary goal of professional learning was to increase teacher knowledge by using outside experts who often were the creators of selected instructional

programs and who facilitated in assisting teachers with implementation strategies. In the 90's, professional learning continued to focus on the development of knowledge and content area skills for teachers, but also expanded to include teacher organizations. Currently, effective professional learning opportunities include those strategies or activities that develop teaching and learning skills through direct experiences that have been found to help students learn (Garet, Porter, Desimone, Birman, & Yoon, 2001).

Empirically Tested Framework Regarding Educative Activities

The creation of the study's questionnaire tool used by SAISD special education teachers to rate educative activities by importance, comfort, and frequency was based on research by Houle (1980) and Cervero and Dimmick (1987). These three researchers provided a framework that confirmed that there were identifiable modes of learning used by professional groups and that engagement in educative activities was important to the act of professional growth. The researcher included some of the educative activities listed in research inventories created by Cervero and Dimmick (1987) when developing the questionnaire instrument used in this study. In addition, the selection of factor analysis used in Cervero and Dimmick's study was reviewed and was considered in the development of this study's methodology design.

Houle was the first researcher to propose a conceptual framework that described the structural forms of professional learning across professions (Cervero & Dimmick, 1987). What was significant about Houle's (1980) research was his perspective that researchers could study similarities across professions and look at common ideas, practices, and solutions. This comparative approach regarding continuing professional

learning was found to have a foundation in literature (Cervero & Scanlan, 1985; Houle, 1980; Nowlen, 1988; Stern, 1983). Houle identified three "major and overlapping modes of learning which include performance, inquiry, and instruction" (Houle, 1980, p. 31). While he could not explain why there were different modes of learning, this conceptual framework afforded opportunities for other researchers to analyze how the structural forms were similar and different.

While Cervero and Dimmick (1987) stated that there have been many studies that described the educative activities used by a variety of professional groups that include teachers, they felt that there was a need for a theoretical framework that empirically described and analyzed educative activities used by professionals. Because Houle's work had not been empirically tested, Cervero and Dimmick (1987) conducted an oblique factor analysis of Houle's typology in order to assess to what degree his framework identified the structural forms of professionals' learning activities. Their findings concluded that Houle's typology was complete in its description of professionals' modes of learning; however, Cervero and Dimmick developed a revised typology that included a differentiation between self and group instruction as two separate categories and offered an explanatory framework.

Houle's (1980) typology, and subsequent studies conducted by researchers, such as Cervero and Dimmick, provided professional leaders and organizations with an understanding of educative activities that were broader than the formal professional learning opportunities engaged by professionals. These researchers developed a body of research and a framework for organizing educative activities that were potentially

educative and in which professional educators should seek to foster active participation. While participation did not always guarantee learning, Cervero and Dimmick (1987) believed that the potential of producing learning could only occur by engaging in an educative activity. The implication was that professional leaders and organizations had to expand the vision of their role in fostering participation. They could more effectively foster participation if they better understood what motivated professionals to engage in educative activities (Cervero & Dimmick, 1987).

Effective Professional Learning Systems and Educative Activities

What do we know about effective professional learning systems, and what kinds of educative activities have been found to be important or vital when developing the skill levels of professional teachers? Borko (2004) has provided research that addressed the development of highly qualified research-based professional learning programs for teachers and the identification of those educative activities found to be important for teachers to use when developing teaching skills. Borko's own study on professional learning provided a comprehensive, multiphase review of the literature that included the identification of four components that must be found in effective professional learning systems. In addition, the categorization of professional learning programs into distinct phases meant to help educators and researchers move toward the development of high quality professional learning opportunities for all teachers was also included in her study. Her research was significant in that it provided researchers with identified elements that professional learning systems should have and a way to standardize

research approaches so that professional learning systems can be evaluated for effectiveness and fidelity.

Borko (2004) found that professional learning research conducted in similar study environments included evidence that professional learning programs have had a positive impact on teacher learning. There was evidence to show that high-quality professional learning programs could help teachers deepen their knowledge and change their teaching practices. Borko (2004) stated that “teachers must have a rich and flexible knowledge of the subjects they teach” (p. 5). The teacher must understand the core precepts of his or her discipline, how ideas are connected, the processes associated with acquiring new knowledge, and the processes needed to determine the validity of new concepts (Anderson, 1989; Ball, 1990; Borko & Putnam, 1996; McDiarmid, Ball, & Anderson, 1989).

Professional learning programs that focused on subject matter helped teachers develop solid content area understanding. In addition, experiences that engaged teachers as learners, such as problem-solving and conducting experiments, were very effective. Effective professional learning programs were found to help teachers understand how students develop an awareness of and knowledge of content area information, an awareness of how information is connected, and an understanding of the key concepts within a discipline (Schifter & Fosnot, 1993). Borko (2004) also found that the instructional practices used by teachers who attended intensive professional learning programs improved and were evidenced by teachers providing students with more problem-solving opportunities, fostering discussions about problem-solving strategies,

and soliciting student responses that help the teacher ascertain student understanding of content area concepts (Borko, 2004).

Strong professional learning communities were identified to have a significant impact on teacher learning and instructional improvement (Ball, 1994; Little, 2002; Wilson & Berne, 1999). Professional learning programs with components that included the establishment and maintenance of communication and trust among teachers were important, and collaborative interactions as teachers worked together to improve teaching practices were also identified as significant. It should be noted that Borko (2004) found the development of teacher communities not to be an easy task. While some professional learning systems were found to encourage teachers to discuss ideas and material related to their work or content area, discussions that critically examine teaching were not readily available in research (Ball, 1994; Putnam & Borko, 1997; McLaughlin & Talbert, 2001; Wilson & Berne, 1999). Frykholm (1998) and Seago (2004) called for the development of more professional learning environments or learning communities where teachers could feel comfortable with critical dialogue and analysis of teaching practices and strategies.

Used in Borko's research of professional learning systems, the central precept of situative perspectives is that any learning environment and associated activities had a significant impact on what participants learned (Greeno, Collins, & Resnick, 1996). Based on this precept, a teacher's own classroom could be a powerful place to learn (Ball & Cohen, 1999; Putnam & Borko, 2000). Additionally, other contexts and items could be used to discuss ideas for improvement that include instructional plans,

assignments, videotapes of lessons, and student work samples (Ball & Cohen, 1999; Little, Gearhart, Curry & Kafta, 2003). Borko's (2004) research called for a multifocal research lens when studying the impact of professional learning programs on teachers and the community. Borko admitted that this type of research was very rare even among her peers. She examined how individual teachers developed new knowledge and practices and simultaneously examined how the learning community collected data and analyzed norms of communication and patterns of participation when teachers engaged in professional learning opportunities (Borko, 2004). For Borko, it was only through the multifocal research method that a researcher could determine if changes associated with professional learning experiences were tied directly, or if a teacher had made temporary changes due to professional learning requirements or associated tasks.

While Borko's (2004) research was considered to be a comprehensive study, additional studies identified key characteristics of effective professional learning systems and supported many of Borko's findings. Professional learning opportunities should be coherent (Garet, et al., 2001; Grant, Peterson, & Shojgreeen-Downer, 1996; Penuel, Fishman, Yamaguchi, & Gallagher, 2007; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007), and they should be content focused (Kennedy, 1998; Yoon et al., 2007). In addition, effective professional learning opportunities should be active and situated in classroom settings (Carpenter, Fenneman, Peterson, Chiang, & Loef, 1989; McCutchen et al., 2002), and should be collaborative and include student data (Garet et al., 2001; Loucks-Horsley, Love, Stiles, Mundry, & Hewson, 2003; Penuel et al., 2007).

In a similar study, Guskey (2003) analyzed 13 different lists of the characteristics of effective professional learning practices published within the last 10 years. In his review, he found that there was little agreement among researchers or practitioners with regard to the definition of the term “effectiveness.” He found that in some studies, this term was defined through teacher self-reports of professional learning features that increased their knowledge and led to change in their instructional practices. Others defined this term based on the opinions of professional learning writers and researchers. Guskey (2003) supported that professional learning should be valued as effective only if it leads to improved student outcomes. Second, he found that much of the existing research with regard to “best practices” was also linked to a variety of contexts and factors that could influence whether a particular characteristic or practice would produce desired results. Third, analyses of student learning data indicated the existence of greater variation between classrooms within a school than between schools or districts. Guskey (2003) promoted that educators should identify those practices of teachers found to help students learn well and share them among their colleagues.

Findings from a comprehensive analysis of 1,300 studies that reviewed the impact of professional learning entitled, “Reviewing the Evidence on How Teacher Professional Development Affects Student Achievement” (Yoon et al., 2007), found only nine elementary level studies met the criteria established by the What Works Clearinghouse, a division of the U.S. Department of Education. No secondary level studies were found to meet the criteria. These findings identified relationships between professional learning and student achievement.

First, findings included that there was a positive relationship with regard to workshops or summer institutes and improvement in student learning. These professional learning opportunities included research-based practices, active-learning experiences for participants, and allowed teachers to adapt practices to their actual classroom situations. Workshops continue to be a widely used means of professional learning and need to be well planned in order to be effective (Guskey & Yoon, 2009).

Second, professional learning opportunities that improved student learning were provided by outside experts. Most experts were program developers or researchers who presented ideas to teachers directly and facilitated implementation. There is a caution that school-based decisions about professional learning can overlook research-based designs that produce results and focus on program designs that a school may feel are good (Guskey & Yoon, 2009).

Third, Yoon et al. (2007) found that there was no defensible research to support that train-the-trainer approaches, peer coaching, or collaborative problem-solving strategies were effective. While, he could not say these practices were not promising, there was no research to support their effectiveness with regard to professional learning. Yoon called for strong, valid evidence that demonstrates that these practices are effective.

Fourth, with regard to time, the most effective professional learning initiatives included 30 or more hours of training time. Research by Garet et al. (2001) also indicated that “sustained and intensive professional development is more likely to have an impact…than is shorter professional development” (p. 935). These researchers found

that professional learning required time, careful organization, structure, purposeful direction, and a focus on content area and/or pedagogy.

Fifth, the National Staff Development Council's (NSDC, 2001) Standards for Staff Development indicated that learning communities or teacher groups with similar interests and goals resulted in positive professional learning experiences for participants and higher levels of participant learning. New strategies should be carefully examined in context in order to determine if student learning gains are obtained. Comparing the progress of one group of teachers with that of another in similar teaching situations can help provide important information regarding promising instructional practices (Guskey & Yoon, 2009).

Sixth, significant amounts of structured and sustained follow-up activities after the provision of an initial professional learning training were found most effective. Teachers were found to need just-in-time and job-embedded assistance as they learn new curricula and adapt practices to their specific classroom environments. This strategy was found to be important for all teachers at all levels (Guskey & Yoon, 2009).

Seventh, research indicated that effective professional learning opportunities include an action plan that participants believe will improve student performance (Garet et al., 2001). Research by Darling-Hammond (1998) indicated that collaborative action plans that include accountability measures increased the likelihood that teachers would accept responsibility for continued professional improvement; as a result, ongoing professional learning in some districts included staff-suggested learning opportunities and topics found to improve teaching and learning. Educators should demand that

programs demonstrate effectiveness using scientifically defensible evidence (Guskey & Yoon, 2009).

Lastly, there was no set of common activities or designs linked to high student learning outcomes. This study included support for the position held by the NSDC (2001) that purported that the adaption or use of varied practices should be based upon the specific content involved, the nature of the work, and context elements. The most effective professional learning opportunities were designed to help teachers understand what they teach and how students learned content specific knowledge and skills.

Researchers have shown that effective professional learning systems do have distinctive components, and research does exist that could help researchers and educators examine the effectiveness of professional learning systems through the application of identifiable phase levels. Borko's (2004) review of the literature regarding professional learning and her own comprehensive study regarding effective components of professional learning systems have provided a basis for more research in this field of study and could be used as a framework to select and evaluate learning opportunities for teachers. In addition, Borko's (2004) study began the process of identifying those research-based educative activities that can be viewed as important since they have a positive impact on teacher learning and the potential to improve student academic outcomes. Other researchers have added support to findings listed in Borko's work and have found new avenues for future research. There is a need for more research in this area and for more studies that have similar sampling sizes and similar research designs

to definitively identify those educative activities that must be valued as important when developing the teaching skills.

The Existence of Emotive Connections in Professional Learning

The perceptions of this study's sample of special education teachers as they rated educative activities by importance, comfort, and frequency were gathered and analyzed for this study. Supported by research, HRD professionals should not ignore learners' needs and preferences and were encouraged to share control when planning adult learning opportunities. The "create" and "implementation" phases found in the adult learning process as developed by Swanson (1996) were identified as avenues for professionals and learners to share control of the learning process. Educative activities associated with these two learning phases were found to promote motivation, a sense of community, valid experiences, and the development of relevant materials. Activities found in the implementation phase include shared control activities such as formative evaluations, team learning, and peer instruction (Knowles et al., 2005).

In addition, emotive studies and brain research should not be overlooked with regard to the provision and development of professional learning opportunities. Emotions, feedback, past experiences, and meaning have been found to have a direct impact on teacher learning. Failure to give teachers positive feedback, make learning connections, establish long-term supports, and integrate compatible approaches that evoke positive emotions were found to lead to poor implementation outcomes (Sousa, 2009). Therefore, recent studies regarding emotive issues, neuroscience, and their implication for professional learning opportunities were included in the review of the

literature. It was through the review of emotive studies in this area that the areas of importance, comfort, and frequency could possibly be addressed.

For Knorr Cetina (2001, 2003, 2007), classical theories of learning did not include the role that excitement, passion, and desire play in the learning process. Classical theories of learning focused on the how and what of learning and did not include research regarding the why of learning (Engestrom, 2001; Miettinen, 2005; Nardi, 2005). Applying Knorr Cetina's framework, Jensen (2007) accentuated Knorr Cetina's belief that it is the "craving for a deepened understanding which propels learning forward" (p. 492). Jensen (2007) reported in her work with teachers that they recognized the need to stay updated and become lifelong learners. With regard to the dynamics of knowledge-seeking, teachers in Jensen's (2007) study saw their entrance into the profession as an "unfolding process" (p. 495). There was an understanding that sometimes there were no definite solutions in practice, and there existed a "back and forth" (Jensen, 2007, p. 495) looping between theory and practice that was transformative in nature. New modes of practice emerged and an understanding of knowledge as open-ended and constantly unfolding in nature was ultimately seen as normal. The looping dynamics characteristic of professional learning transformed into a "wanting structure" (Jensen, 2007, p. 496), and it was the feeling of knowing that there was more to learn that inspired ongoing learning. The desire to learn emerged as a result of a productive interdependence between knowledge and the "commitment that arises from being a member of an innovative-oriented community" (Jensen, 2007, p. 497).

For Jensen (2007), Knorr Cetina's theory provided a framework by which to describe expert work and provided a context that depicted how social and knowledge relations were intertwined in this area. For the professions, the desire to learn was not only driven by a search for knowledge. There were many emotional expectations, such as a sense of professional duty or a quest for social recognition, that could motivate an individual to learn (Jensen, 2007). While Jensen (2007) showed that professionals expected continuous learning to be an integral part of their practice, she warned that professional leaders must build in "navigational aids and epistemic structures" into their organizations or the professions may develop into "ambitious but aimless learners" (p. 501).

Recent brain research has also provided insight into adult learning and into the need to consider brain-compatible professional learning opportunities. Imaging studies have shown that there are regions in the brain's emotional and cognitive processing that are activated when adults are motivated to learn. With growing research in neuroscience, how adults feel about a learning situation has a greater impact on attention and memory than what adults think about it. Such findings have implications for learning opportunities and include: (a) professional learning opportunities that evoke positive emotions; (b) opportunities for discussion that are directly relevant to teachers; (c) hands-on opportunities that include a variety of learning styles; (d) timely, specific, and positive feedback; and (e) opportunities that are tied to past experiences. In addition, attaching meaning to new learning by matching it with relevant past experiences have been found to help with long-term memory. These findings were also found to have

implications for professional learning opportunities. Based upon these findings, learning opportunities should include the following: (a) connections between new initiatives and job goals, (b) topic presentations over substantial time and with depth, (c) incorporation of a variety of modalities styles, (d) action research in classroom settings, and (e) in-school study groups based on relevant topics (Sousa, 2009).

Findings from emotive studies were significant because it is in this area where researchers can find preferred educative activities and can address emotive issues such as motivation, importance, comfort, and frequency with regard to the use of certain types of educative activities. Few studies were found that addressed emotive areas such as importance, comfort, and frequency, and there is a need for more research in this area. More research was found to be needed to help determine the characteristics of those research-based educative activities found to be motivating because they evoked positive emotions, were considered to be timely and relevant, and were found to lead to higher performance outcomes.

Professional Learning Considerations for Beginning Teachers

This study included an examination of teacher perceptions of importance, comfort, and frequency by years of teaching experience. Therefore, research that addressed professional learning findings of beginning teachers was included. With regard to beginning teachers, the transition from student to teacher has led to some interesting study findings with regard to professional learning and to feeling successful as a teacher. A review of the literature in this area was significant because existing

research identified that new teachers have different professional learning needs than those needs of their experienced colleagues.

Researchers have shown that the experiences of beginning teachers can conflict with teacher expectations and the realities of their work environment and culture. Flores (2006) described this type of mismatch as a conflict in perspectives, beliefs, and practices as teachers begin to develop a new identity. The area most problematic for new teachers was the decision-making process that included motivating students, dealing with individual students and disciplinary problems, evaluating student work, managing time, and the classroom (Charnock & Kiley, 1995; Cooke & Pang, 1991; Marcelo, 1991; Veenman, 1984, 1988; Vonk, 1983).

The way that beginning teachers handled tasks and roles included descriptors such as the “sink or swim” approach (Lawson, 1992; Lortie, 1975), a “baptism by fire,” or “trial by fire” approach (Hall, 1982; Pataniczek & Isaacson, 1981). As new teachers worked to achieve personal and professional acceptance among their students, colleagues, and administrators, these new teachers have described this time period to researchers as a “rite of passage” (Huberman, 1991; Vonk, 1984). Feiman-Nemser (2001) found that new teachers have to teach and learn how to teach at the same time. In addition, there were some things that only on-the-job experiences could provide to teachers and that the best professional learning programs could not provide this type of learning.

Researchers have discovered the importance of adequate support and professional learning opportunities during the early years in the profession (Flores, 2000;

Hardy, 1999; Tickle, 1994, 2000). The intense learning during this time period impacted the professional identity of novice teachers as teachers' beliefs, values, and perspectives are challenged or examined against workplace influences. Flores (2000, 2001) called for more research in the area of what, how, and when new teachers learn at work and how, when, and why they develop and change (or don't change) in certain ways. Knowing how teachers acted in context—their expectations and their needs, their limitations, and their constraints became a key issue especially if meaningful learning opportunities were provided to them.

Flores (2001) stated that new teachers felt overwhelmed by the large amount and wide variety of duties that they were expected to perform at school. They felt that they were not getting appropriate levels of support or guidance that forced most of the study's participants to state that most learning was done on-the-job. The effect of learning at work had an impact on their efforts to becoming "professionals." They struggled to make sense of their teaching experiences in various educational settings. Their understanding of what it meant to be a teacher was constantly challenged and altered as they negotiated their workplace roles.

Flores (2001) called for more collaboration between colleges, universities, and initial teacher training programs. There was a gap between theory and practice and, specifically, what it meant to be a teacher in today's world. She stated that prior beliefs and preconceptions about teaching, learning, and being a teacher should be taken into account. She called for more opportunities for teachers to talk about and reflect on their own ideas regarding teaching, learning, and what it really means to be a teacher. Flores

(2001) found that there was a need for a new induction policy that went beyond typical practical advice and socialization processes, whereby members become a part of a professional culture. Teachers should be given opportunities for self-questioning and reflection on their own practices, as well as the norms and values within the educational settings in which they work. Tickle (2000) stated that high quality teaching and learning depended on high-quality teachers. He proposed that we support teachers at different points in their careers with appropriate resources and opportunities to develop professionally.

In another study regarding teacher efficacy, Onafowora (2004) stated that teachers must develop expertise in their content area and in teaching in order to become effective. However, new teachers were able to develop expertise only after they entered the teaching profession. Novice teachers faced a significant challenge with balancing theory and practice because the mastery of teaching may occur several years into their teaching careers. In addition, Onafowora (2004) found a link between self-efficacy and how teachers performed. Teachers with a strong sense of self-efficacy felt that they had the ability to create learning environments that would promote learning. Teachers with a strong sense of self-efficacy spent more time on instruction and less time on discipline. Teachers with a feeling of self-efficacy have a firm belief in their "self-judgments and capabilities to create and organize instruction that motivate student learning" (Onafowora, 2004, p. 36).

An acquired teaching certificate was viewed as an indicator of minimum teaching abilities; however, the cognitive and affective abilities of novice teachers were found to

evolve through teaching experiences. While novice teachers may know what to do, their affective abilities in terms of teacher-student interactions may be a significant challenge for them on the job. Onafowora (2004) felt that trends to improve teacher learning required more research that examined how teachers talk about their instructional practices, which changes teachers chose to make in their classroom practices, and how teachers characterized those changes. In addition, multiple opportunities to observe good practice, to talk about teaching, to learn to observe students carefully, to experiment with strategies and techniques and assess their impact, and to make and learn from their mistakes were important in improving teaching skills. Pedagogical experiences that helped new teachers develop meaningful patterns about teaching, value and organize information, retrieve information, and know when to use the information helped these teachers feel more confident on-the-job (Onafowora, 2004).

Foster, Lewis, and Onafowora (2003) demonstrated how ongoing professional training of novice teachers could occur through a laboratory experience called the Learning Through Teaching in an After-School Pedagogical Laboratory (L-TAPL). They emphasized teacher learning and the opportunities needed to change their practices (Bransford, Brown, & Cocking, 1999). Using laboratory experience situations, teachers monitored their own teaching, observed effective teacher-student interactions, and implemented effective academic strategies. These skills were important in maintaining quality teachers and were critical for novice teachers (Onafowora, 2004). Novice teachers were given the opportunity to observe a master teacher in a lab setting with a daily schedule of two hours in an after-school learning environment. After the students

left, the two teachers discussed teaching strategies, teacher-student interactions, and observations. Novice teachers experienced unique learning and teaching interactions, had an opportunity to observe a master teacher, and were able to adapt strategies to use on their own students. Over time, these experiences led to improved confidence levels of novice teachers and helped them focus on instruction and not discipline (Onafowora, 2004).

Overall, novice teachers were found to demonstrate a need for opportunities to observe good teaching practices and to interact with other teachers. Flores (2006) and Onafowora (2004) examined the importance of providing novice teachers with effective experiences that could provide opportunities to develop their expertise and feelings of self-efficacy. Their findings indicated that novice teachers could learn from a master teacher and enhance their teaching and pedagogical skills. Novice teachers did like to work with their peers and discuss teaching-related issues. Most aspired to become efficacious teachers, and effective teaching experiences allowed them to develop their cognitive and affective capabilities. Novice teachers needed early professional training opportunities that allowed them to feel self-empowered to create learning environments that would allow them to motivate and promote student learning. Novice teachers were found to need effective learning opportunities and experiences in order to become expert teachers (Flores, 2006; Onafowora, 2004).

Educative Activities Used by Beginner Teachers to Develop Teaching Skills

Studies that included the exploration of educative activities used by beginning teachers were reviewed. In an 1983 journal article, Arends made the statement that

beginning teachers in the United States entered the teaching profession with little training and with the expectation of ongoing professional learning in their induction period until they become fully competent professional teachers. Many beginner teachers reported that the learning experiences in college and in the workplace did not adequately prepare them for the issues faced in their classrooms. With regard to available research at the time of his study and his own findings, Arends (1983) did state that there was little research available regarding the nature of learning experiences provided and sought by beginner teachers. He stated that there was no attempt to categorize the kinds of assistance and available training that beginner teachers chose to take on and that were required. Little was known about the specifics of dissatisfaction and disillusionment reported by teachers or about the characteristics of teachers themselves that might account for continued learning.

In contrast to Houle's (1980) research, Arends' (1983) study of beginner teachers did not include a theoretical framework that described or analyzed the learning or educative activities of beginner teachers. Arends sought to answer three major questions regarding beginner teacher learning. First, he sought an answer to the nature and extent of the learning experiences of beginner teachers. Next, he sought to answer what types of judgments were made about these learning experiences. Lastly, Arends sought to answer if common characteristics existed among beginner teachers that could account for their continued learning.

Arends (1983) found that the amount of time devoted to deliberate, professionally related learning by beginner teachers to be more extensive than expected.

He showed that beginner teachers do continue as learners, and many types of learning experiences were sought by new teachers. The most favorable learning experiences were those that were individualized (one-to-one technical assistance and observations of other teachers teaching), or very practical (solving particular problems and developing classroom materials in workshop or clinic settings) (Arends, 1983).

Beginner teachers were more satisfied with learning experiences located away from home. It was supposed that perhaps these types of learning experiences allowed them the opportunity to interact with a different and larger community of colleagues. With regard to presenters, college personnel or district curriculum specialists were least preferred. Higher ratings were given to learning experiences with more than one trainer. Preferred learning experiences were comprised of a team of consultants, or teachers themselves (Arends, 1983).

Learning experiences taken by beginner teachers for personal satisfaction or professional growth showed high ratings of satisfaction and applicability. Higher ratings were given to experiences that were voluntary than required. Multiple incentives produced a higher degree of satisfaction. Beginner teachers rated most competent by their immediate supervisors were also the most avid learners. Arends (1983) felt that a challenge for education agencies and school districts was to find policies that offered rewards and assistance to “docile” learners so that they could engage in educative activities to a greater degree without changing the pattern of learning of beginner teachers who are also “avid” learners (Arends, 1983).

Arends (1983) summarized his study's findings by stating that beginner secondary teachers entered the profession with little training, and it was assumed that they would continue learning until they become competent teachers. While he found that each beginner teacher's learning appeared to be a product of his or her own decisions rather than decisions made in agreement with others, Arends did not see this as necessarily a negative issue. He felt that teachers were able to design their own learning and to choose experiences that matched their needs. Arends also felt that the teacher was primarily responsible for his or her own learning. He did state that teacher learning was a careful balance of promoting and guiding teacher participation with their own learning, especially for those who would benefit the most from professional learning programs, without stifling the autonomous, self-directed learner (Arends, 1983).

Professional Learning Considerations for Expert Teachers

In a review of how teachers become experts, findings were similar to those of experts in other professions. Poulson, Avramidis, Fox, Medwell, and Wray (2001) found that expert teachers have the ability to classify problems according to their underlying principles and to accurately determine patterns of interaction in similar and dissimilar situations. Novice teachers adopted representations that were not related to underlying principles and did not see possible interactions. In contrast, expert teachers did not heavily rely on the application of a knowledge base to solve problems; they engaged in constructing and reconstructing professional knowledge using many perspectives to solve problems. Expert teachers used their own knowledge base within their own situational settings to address specific problems.

Lave and Wenger (1991) stated that an expert was an individual who participated fully in the social practices of their profession. In this case, teachers and students worked collaboratively together and the decisions made with regard to instruction were unique and particular to classroom settings. Therefore, expert teachers participated fully in the working practices of the profession and in performance management systems, such as lessons, observations, data analysis, and other related systems. They set goals for improvement, developed achievable goals, managed effective lessons, and applied solid practices to solve problems. Expert teachers participated in collaborative activities and discussions, reflective practices, and inclusive practices to improve student performance and the performance of colleagues (Kelly, 2006).

For some researchers, teacher learning was viewed as the process by which teachers become experts, and it was the actual engagement of teachers in their working practices that made them think. In a review of the literature, the process in which teachers became experts was not much different from the process in which professionals moved from novices to experts. Best practices with regard to professional learning included the sharing of ideas and perspectives where providers and practitioners worked alongside each other. Another perspective included professional learning opportunities where teachers and students learned alongside each other, and teachers developed skills through practice and discussions with an expert (Kelly, 2006). Teacher learning opportunities for expert teachers should be: (a) learner-centered—how teachers can meet student needs; (b) knowledge centered—to include effective teaching strategies; (c)

assessment centered; and (d) community centered—supportive of collaborative efforts with peers and experts to create a community of practice (Hardré, 2005).

Educative Activities Used by Expert Teachers to Develop Teaching Skills

Research regarding expert teachers and the educative activities used by them included significant differences in the way that they approach teaching and learning as compared to novice teachers. Expert teachers think of individual students rather than the classroom as a whole when planning instructional strategies. They plan for adaptations in the event that some students may experience difficulty understanding a lesson's objective, and they planned twice as many strategies to teach a specific skill as compared to novice teachers (Housner & Griffey, 1985).

Daley (1999) conducted a study of novice and expert professionals and found significant differences between these two groups. Experts were found to have a very good understanding of their own learning and how to construct a knowledge base and learned from their practices and from their experiences. They grounded their learning with regard to the needs of their clients and with regard to the context of their practice and tended to be more constructivist in nature and self-directed. Experts viewed learning opportunities as "background material" that enhanced learning and learned through activities that included dialogue and sharing opportunities. Finally, experts felt a responsibility to learn so they could contribute information to colleagues and to search for the latest information in their profession (Daly, 1999).

Benner (1984) showed that there was change as professionals moved from novice to expert with regard to performance. The expert professional moved from seeing things

as unrelated to seeing things as unrelated to seeing situations as part of the whole, and expert professionals moved from being an observer to an active participant. Danielson (2009) recommended that HRD professionals consider the practice of involving teachers in the interview process. This type of activity had the potential to lead to challenging discussions about high-quality teacher characteristics and effective teaching practices between teachers and campus administrators serving on interview panels.

Professional Learning in Texas and in SAISD

In a face-to-face conversation with Director for Professional Learning in SAISD, Dr. J. M. Westbrook-Youngblood (personal communication, August 26, 2008) responded that there was no systemic effort from the State of Texas or Texas Education Agency (TEA) to provide learning opportunities for teachers. She indicated that the State's professional learning organization was the Texas Staff Development Council (TSDC), which is an affiliate of the National Staff Development Council (NSDC). TSDC was found to offer several courses throughout the year in conference-like settings but also visited districts by request. TSDC has provided training to districts such as "The Principal as a Staff Developer," "Tips, Tools and Techniques for the Staff Developer," "Action Research," and a variety of other courses. The only systemic "let's get it to all of the districts" effort by TSDC was an online introduction to professional learning course for new staff developers; however, this was still in the development stage at the time.

According to Dr. Westbrook-Youngblood, the NSDC organization initiated a conversation that could lead to a systemic effort to reform professional learning. This

was done in collaboration with the American Federation of Teachers (AFT), the National Education Association (NEA), and the Chief State School Officers (CSSP). She further stated that the North Texas State Development Council, which includes the Dallas, Fort Worth, and Denton area, was considered to be the best and oldest affiliate in the State. It was her belief that this area organized itself due to the large size of each of the three cities and their close proximity to each other. School districts within these cities supported the establishment of director of professional learning positions, and these directors formed an alliance to share ideas.

Dr. Westbrook-Youngblood stated that the NSDC revised standards for professional learning in 2001 to ensure that students as well as educators would benefit from high-quality professional learning. It was the premise of this organization that the purpose of professional learning included helping educators develop experiences, knowledge, and skills needed to become effective school leaders who would be able to increase student learning to a significant degree. The standards were based on the context, process, and content schema developed by Sparks (1983) and were research-based. Context standards addressed the structures that must be in place for successful learning to occur. Process standards referred to the learning processes used in acquiring new knowledge and skills and included the use of data, evaluation, and research. Lastly, content standards referred to what students must know and learn. It addressed the knowledge and skills that would ensure successful learning experiences for students (NSDC, 2001).

In addition to the NSDC standards, Dr. Westbrook-Youngblood referenced work by Guskey (2000) who identified five evaluation levels that educators could use to address the effectiveness of professional learning opportunities for teachers. These levels included (a) participant's reaction, (b) participant's learning, (c) organization support and change, (d) participant's use of new knowledge and skills, and (e) student learning outcomes. It was Guskey's belief that everyone who affected student learning must be learning all the time, and it was imperative that educators effectively and continuously evaluated the outcomes of implemented practices. Professional learning evaluation systems must (a) understand professional learning so it can be improved and remain effective and (b) determine what impact professional learning has had on student outcomes. Professional learning should continue to include formal types of training, such as workshops and courses, but it should also include informal types of learning, such as joint planning, critiquing of student work and studying curriculum materials.

Dr. Westbrook-Youngblood felt that many school districts and teachers were stuck in the management stage. Many times teachers saw new or different learning initiatives introduced and implemented, but it was also their feeling that these same initiatives would come and go. Often, teachers did not implement initiatives to full integrity because they expected something new to be introduced in the near future. In addition, she felt that many school districts never reached the discussion stage of whether students were actually learning and showing progress as a result of professional learning initiatives or strategies due to constraints that included time, commitment, appropriate development of learning opportunities for teachers, grant constraints, and

appropriate program/initiative selections (Dr. J. M. Westbrook-Youngblood, personal communication, August 26, 2008).

Present day professional learning opportunities for teachers in SAISD do mirror research-based practices found in current literature. SAISD Department of Curriculum and Instruction professionals have targeted a district-wide curriculum for core content areas and have moved away from site-based curriculum selections. Supplementary programs must complement content area curriculum and not replace it. Professional learning opportunities that focus on core content area curriculum were found to occur throughout the instructional year and summer. Applying findings from a comprehensive study that analyzed the effect of professional learning on student learning outcomes, Guskey and Yoon (2009) stated that research regarding workshops and summer institutes continued to indicate a positive relationship between professional learning opportunities and improvement in student learning if these types of professional learning methods include research-based instructional practices, active-learning experiences for teachers, and opportunities to adapt practices to current classroom settings. Time continued to be a challenge for training in SAISD, and research by Guskey and Yoon (2009) found that professional learning should consist of at least 30 hours of training opportunities. Many districts were found to struggle with providing effective training opportunities that do not encroach upon student instructional time.

A possible consideration for the SAISD Department of Curriculum and Instruction and HRD professionals could include the provision of more summer training opportunities for new hires. Teacher contract considerations and regulations would need

to be reviewed, and grant monies should be researched. While, the current district calendar was found to allow for professional learning time at the beginning of the school year, there was not enough time to address campus level, department level, and district level professional learning needs. New hires would benefit from training regarding campus, department, and district initiatives prior to their first day on-the-job.

Current research supported professional learning efforts provided by outside experts who were program authors and presented ideas directly to teachers. In addition, the assistance provided by these experts was found to have positive implementation results. An example of this practice was found in training opportunities sponsored by the SAISD Department of Special Education Services, a Department that reports to the Deputy Superintendent, who also oversees the Department of Curriculum and Instruction. Special education teachers and support staff who were assigned to work with students with autism were provided the opportunity to attend a summer institute presented by a national expert in the area of autism. This five-day training included a lecture component, opportunities for teachers to create lessons and materials based upon the instructional needs of students with autism selected to participate in the summer workshop, teaching opportunities that implemented staff-created instructional materials, and discussion time that allowed teachers to debrief with their peers and the expert. As a result of summer institutes and ongoing professional learning opportunities provided throughout the school year, the autism program for this district has shown significant improvement in the use of effective teaching practices and in student performance outcomes as evidenced by established data-gathering processes.

Current research also indicated that there was no set of common activities found to affect student learning outcomes. As stated earlier, Guskey and Yoon (2009) found that effective professional learning activities were varied and should be based upon the "specific content involved, the nature of the work, and the context in which that work took place" (p. 497). In 2009, the SAISD Department of Curriculum and Instruction introduced an electronic DataDirector software program that provides campuses with individual student profiles containing past/current state assessment information, formative mini assessment information across content areas, student schedule information, and student specific TEKS information. Using this software program, campuses discovered that they could create a data-driven plan with regard to professional learning opportunities based upon student needs and could allow teachers to work together on common instructional efforts identified as an area for more review as a result of data findings. This electronic software program also identified student performance outcomes by teacher and grade level. Those teachers with high student performance levels could share their strategies and experiences with their peers. This DataDirector program could also be used by campuses to enhance teachers' content knowledge and to develop effective performance goals through the analysis of student achievement on state assessments and other evaluation data found on this system.

The SAISD Department of Professional Learning and the Department of Human Resources were also found to provide professional learning opportunities to district staff that specifically address process development. An example of this type of training included a session entitled, "Tips and Tools," which helps district staff members become

effective presenters and mentorship training, which develops the mentorship skills of participant. In addition, new teacher orientation and teacher substitute orientation efforts are provided in order to provide new members with information regarding district practices and procedures. Finally, leadership training efforts included “Crucial Confrontations” and “Crucial Conversations” sessions in order to provide administrative and department staff with an effective way to work with staff and ensure that organizational goals are met. These opportunities identified in terms of “process” training sessions offer staff experiences that can be identified as perspective transformation or critical reflectivity. These types of experiences help facilitators, as well as learners, examine current belief, value, and behavior systems and learn ways to address challenging experiences without fear or anxiety. In addition to the application of perspective transformation practices regarding adult teaching and learning, examples included in current SAISD professional learning practices also included aspects of change theory. By providing opportunities for its membership to engage in processes that encourage growth and change, the organization can become valued as an organizational environment conducive to learning. Change theorists have provided insight into various aspects of change within organizational environments: (a) the planning of change, (b) change strategies, (c) organizational development, (d) the role and ethics of change agents, (e) conflict management, (f) intervention theory, (g) resistance to change, and (h) human relations training (Knowles et al., 2005).

The examples listed in this section have identified the efforts of SAISD to train its campus staff using researched-based practices with regard to professional learning

and those educative activities found to be effective. The decision to promote a common curriculum allowed for a linear focus with regard to teacher training and allows teachers across the district to have a common frame of reference when discussing core content area skill development. Training opportunities included research-based educative activities that support the use of experts to present and facilitate new concepts/programs, the consideration of time whenever possible, the explanation of training purpose and goals, opportunities that include peer discussion and role playing, and follow-up training time. The DataDirector system has significantly changed the ways campus view themselves and has given campuses the ability to gather, use, and analyze data in a quick, easy, and user friendly format. Professional learning opportunities can be developed based upon data-driven measures that focus on current student, teacher, and campus needs. Training opportunities that promote strategies found in perspective transformation and change theory were found. This continued practice can influence the culture and climate of the organization.

Comparative Studies Regarding Teacher Preparation Programs for General and Special Education Teachers

Prior to identifying the professional learning needs of special education teachers, it was important to compare general and special education teacher preparation programs. Brownell et al. (2005) stated, “special education teacher education is not a well-established area of inquiry, and there are no formative syntheses of available programs or known features that exemplify those programs” (p. 244). In an effort to study the teacher preparation programs of these two teacher groups, Brownell and colleagues

conducted a comprehensive review of 66 programs across different types of institutional contexts to determine common elements. They found that special education programs included the following common elements: (a) extensive field experiences, (b) collaboration, and (c) program evaluation. Also, they found that many special education programs emphasized inclusion and cultural diversity. Lastly, special education teacher preparation programs were found to have diverse philosophies that emphasized positivist or constructivist orientations toward teacher knowledge (Brownell et al., 2005).

In a review of commonalities and differences between general and special education teacher programs, researchers found both fields to be labor intensive, have a carefully developed focus on connecting theory and practice, be collaborative, and create teachers who could respond to the needs of diverse learners. In addition, researchers found that the characteristics of having a clear programmatic vision and integrating subject-matter pedagogy with educational theory and field experience were not emphasized in special education programs as they were in exemplary teacher education programs (Brownell et al., 2005).

Specifically, both programs included extensive, well-planned, and well-supervised field experiences. Both programs included experiences that focused on diversity with special education faculty emphasizing the diverse needs of students with disabilities. However, special education programs did not include experiences that promoted conceptual change about diverse learners to the same degree as general education teacher programs. Both programs had evaluation systems that documented teacher impact on student learning. Researchers found that 50% of the special education

programs studied had evaluation efforts that included direct assessment of teacher performance. In addition, researchers discovered that program philosophies differed more widely in special education teacher programs than in general education teacher education programs. General education teacher programs were more grounded in constructivist or constructionist epistemological views of how teachers acquired knowledge. In contrast, special education teacher programs were found to be more representative of diverse epistemological views with regard to teacher learning. Teacher preparation programs with a focus on special education tended to promote a more positivist epistemological view (Brownell et al., 2005).

Significant differences between the two programs centered on the two elements of a strong programmatic vision and an emphasis on subject-matter pedagogy. General education teacher programs heavily emphasized subject-matter pedagogy; in contrast, special education teacher programs focused on more generic pedagogy, such as instructional methods, assessment, and individualized education plans. Only in unified programs and in some special education programs were special education competencies integrated into subject-specific pedagogical coursework or teaching courses in integrated blocks (Affleck & Lowenbraun, 1995; Epanchin & Wooley-Brown, 1993; Giovini, Zide, & Banahan, 1974; Lovingfoss, Molloy, Harris, & Graham, 2001; Meyer, Mager, Yarger-Kane, Sarno, & Hex-Contreras, 1997; Norlander, Case, Reagan, Campbell, & Strauch, 1997; Ryan, Callahan, Krajewski, & Flaherty, 1997).

Brownell et al. (2005) recommended program features that could influence the quality of beginner special education teachers. Carefully designed field experiences that

allowed prospective teachers to integrate information they were acquiring in their coursework enabled better knowledge and skill development in beginner teachers. Programs that promoted a high degree of faculty and student collaboration and focused on instructional methods and knowledge for addressing student diversity resulted in better outcomes for beginner special educators. These researchers recognized that there was a need for more research to determine the program components of an effective special education teacher program and to link these components to beginner teacher and student outcomes. There was a need to develop valid and reliable measures of teacher knowledge and behavior that could be linked to student learning. A significant challenge for future researchers included designing teacher quality measures. These types of evaluations or measures should address the following areas: (a) teaching students with dramatically different needs; (b) providing instruction in different content areas; and (c) engaging in different roles to interact with students, administrators, and parents. Researchers must identify ways of measuring student outcomes that are sensitive to what teachers do in the classroom. Future researchers in special education should not rely on national or state assessments that are not “sensitive” to achievement growth for students in special education and must learn how to measure student outcomes that are “sensitive” to what teachers can do in an instructional learning environment (Brownell et al., 2005).

There was a need for more research in the area of how special education teacher preparation programs make a difference. No research existed to indicate that specific teacher education components make a difference in outcomes for special education

teachers. Future research should focus on specific program features that are research-based and have been found to be effective. Although inconclusive, researchers of general education teacher programs suggested that teachers with subject-matter preparation achieved better student outcomes than those who lacked this type of preparation (Wilson et al., 2001). More research was found to be needed in order to address the following question posed by Brownell et al. (2005): “Do prospective teachers acquire stronger subject-matter knowledge in unified preparation programs in which pedagogy is addressed in specific content areas, or in more traditional special education programs that tend to provide instructional methods exclusively designed for students with disabilities?” (p. 249).

Professional Learning Considerations for Special Education Teachers

Recent studies have found that many special education teachers have completed teacher preparation programs that did not focus on content (Brownell et al., 2009; Brownell, Leko, Kamman, & King, 2008). Brownell and colleagues (2009) identified several general considerations for educators to consider with regard to professional learning for special education teachers. Professional learning opportunities must help special education teachers understand how the interventions that they are using and the general education curriculum fit together. Special education teachers must be able to address content standards, state assessment components and criteria, and key concepts in course curriculum. In addition, special education teachers must learn how to address key concepts in subject-matter curriculum in various general and special education instructional settings. Finally, professional learning opportunities for special education

teachers must focus on content-area knowledge and practice. Professional learning opportunities with a content focus were found to be the most important component in improving teacher knowledge and practice and student achievement (Desimone, Porter, Garet, Yoon, & Birman, 2002; Yoon et al., 2007).

Educative Activities for Special Education Teachers

Leko and Brownell (2009) recommended several educative activities for special education teachers. Educative activities should include training provided by experts, the incorporation of technology, training in content area knowledge and standards, training in collaborative planning and practices, teacher reflections on teaching scenarios and/or video segments, and teacher feedback regarding their instruction practices. In addition, educative activities should include training on the most powerful strategies to use with students with disabilities, model lessons, problem-solving skills, and the provision of instructional frameworks that can guide teachers' decision-making within specific content areas.

In order to acquire new practices and knowledge, teachers must actively engage in learning practices and learn how to use them in classroom settings (Desimone et al., 2002; McCutchen et al., 2002). Teachers were found to need concrete examples of how to apply instructional theories and new practices in classrooms. They were also found to need explicit instruction in research-based practices by expert teachers, frequent opportunities for practice, continuous feedback, and coaching opportunities. Opportunities to discuss the implementation of strategies and practices were also found to be an effective way to help teachers reflect on the quality of their instruction and

facilitate discussions that will learn to improved instruction. Educative activities that provided collaborative experiences and focused on student data afforded teachers opportunities to discuss new teaching practices and issues regarding implementation (Garet et al., 2001; Loucks-Horsley et al., 2003; Penuel et al., 2007).

Finding Quality Teachers Through the Use of an Effective Interview Process

School districts' HRD professionals are under pressure to provide school administrators with an ample list of competent teacher candidates. Based upon NCLB criteria, teachers were considered highly qualified if they met certification requirements; however, possessing required credentials was not always found to ensure exceptional teaching skill. The challenge for HRD professionals was found to be in the prescreening and selection processes that successfully identified highly effective teachers (Hindman, 2004). With this in mind, the continuous search for effective teachers and need to fill teacher vacancies were also found to have a direct, significant implication for the professional learning needs of any school district. The teaching experiences and attributes of teachers within a district's teaching force have tremendous implications for the kinds of professional learning opportunities that must be planned. In addition, some research has indicated that candidates from alternative teacher certification programs do not possess a strong pedagogical knowledge base as compared to candidates from traditional university or college teacher preparation programs (Leko & Brownell, 2009).

An important consideration for HRD professionals was found to be a careful review of their organizations' interview process. What needs to be in place in order to maximize the efforts of interview committees to hire the best teachers possible? In a

review of the literature, structured interviews have been found to be more effective than unstructured interviews and were found to more likely result in the selection of an effective candidate (Campion, Palmer, & Campion, 1997; McDaniel, Whetzel, Schmidt & Mauer, 1994). Structured interviews included (a) components that specifically addressed the teacher's relationship with students, colleagues, and parents; (b) instructional technique, knowledge, and application; and (c) general background information (Pawlas, 1995). Structured interviews included experience-based questions designed to get candidates to discuss past experiences regarding a specific case or situation and were found to be better predictors of employee performance (Huffcut, Weekley, Wiesner, Degroot, & Jones, 2001). In addition, HRD professionals can create a more reliable and valid interview process through the inclusion of experience-based interview questions (Hindman, 2004). An interview process was found to be effective if the interviewer was able to obtain responses that helped predict a candidate's future performance (Dessler, 1997). An effective structured interview format included the job-related constructs of effective teachers and a rating rubric that assured the reliability of the response scoring (Huffcutt, Roth et al., 2001; Pawlas, 1995; Schmidt & Rader, 1999). In addition to the interview process, Hindman (2004) recommended that HRD professionals train interviewers on the structured interview process. Finally, HRD professionals should consider developing a system that incorporates the inclusion of expert or mentor teachers in the interview process (Danielson, 2009).

In addition to experience-based interview questions, behavior-based interview questions were found to focus on candidates' past behaviors as a predictor of their future

performance. This interview model included specific questions to ascertain the past experiences, skills, and behaviors of the candidate. The candidate's suitability for a position is based on the premise that past behavior is an effective predictor of future performance. Questions are open-ended and require candidates to describe their past experiences. If a candidate had few experiences, these open-ended questions would require the candidate to draw from teacher program preparation experiences, professional learning opportunities, and existing knowledge base about effective teaching practices and preferences. HRD professionals must be able to determine the skills necessary for a teaching position, create effective interview questions, create an effective evaluation system with established response guidelines and indicators, and ensure that the interview process can assist with the selection of candidates that possess the experience, knowledge, and skill needed for the position (Clement, 2009).

The search for effective teachers is a tremendous responsibility for any HRD professional. A careful review and evaluation of current practices should be conducted on a regular basis. Current research continues to be researched to assist school districts in their development of effective interview practices.

Alternative Certification Programs and Special Education

Research in the area of alternative certification programs was not found to be extensive, and conflicting findings in this area were found in the literature. In an effort to address the issue of teacher shortages in the area of special education, states and school districts have turned to teacher candidates who have completed alternative certification teacher programs. In a review of the literature, more extensive research with regard to

whether a trained teacher from an alternative route could be considered as highly qualified as a teacher with a teaching certificate from an institution of higher education was found to be needed. Rosenberg and Sindelar (2005) found the following:

1. Alternative route certification programs that included components such as meaningful collaboration opportunities, program development and length, rigorous activities, and experiences were found more effective than those that did not contain these components.
2. Alternative route certification programs that developed and provided collaborative experiences between institutions of higher learning, local education agencies, and special education agencies were found to be more effective than those that did not include these types of experiences.
3. Alternative route certification programs that included supervisory experiences provided by staff from institutions of higher learning and provided mentor support services were found to be more successful than those programs that did not include these types of services.
4. There was existing data to support the long-term efficacy of alternative certification programs. However, more extensive data collection efforts that included teacher performance measures, cost indexes, and longitudinal assessments of attrition and retention were found to be needed.
5. There was little information to help determine whether alternative certification programs would have an impact on the professionalism of

special education teaching, or whether alternative certification programs could support the profession in a positive manner.

Research in the area of alternative certification programs was found to be very limited; however, three reasons have been accredited to the increase of such programs in the area of special education which include: (a) continued shortages of qualified teachers, (b) continued need for special education teachers who are culturally and linguistically diverse, and (c) dissatisfaction with teaching process found in institutions of higher education as expressed in policy by NCLB (Rosenberg & Sindelar, 2005). While more research was found to be needed, additional research must be methodologically sound and must compare similar participants and programs in order to begin to address the question of whether those participants completing alternative certification programs could favorably compare to participants completing traditional teacher preparatory programs. Teaching as a profession was found to be an area for discussion by organizations since NCLB policy sanctioned the use of alternative certification programs as another way to increase the pool of teacher candidates. If future research finds that teachers from alternative certification programs are not as well prepared as teachers from institutions of higher education, an implication for HRD professionals and professional learning staff may include a need to provide more intensive training in the area of pedagogy for a teacher workforce with a limited foundation in learning theory and practice.

HRD and the Adult Learning Process

Adult learning theories and processes were found to have extensive foundations in the principles of stimulus-response, cognitive, motivation, and personality theories. With a focus on organizational performance, HRD practitioners have increasingly valued experiential learning theory as a means to improve performance since this approach has been found to appeal to the adult learner's experience base, and has been found to be effective in increasing the likelihood of performance change after training opportunities have been provided (Knowles et al., 2005; Swanson, 1996). For Kolb (1984), learning was defined as "the process whereby knowledge is created through transformational experience" (p. 38). He suggested that there were four steps to the experiential learning cycle: (a) concrete experience, (b) observations and reflections, (c) formation of abstract concepts and generalizations, and (d) testing implications of new concepts in new situations. For Kolb, the successful learner modified or changed any old ideas that impeded the development of new ideas. HRD practitioners were found to embrace experiential learning approaches such as action reflection learning, transfer-of-learning practices, and structured on-the-job training practices (Kolb, 1984).

With respect to the adult learning process, the core principle that adults must know "why" before they engage in learning has led to the premise that adults need to be engaged in collaborative planning processes that have an impact on their learning. Within this core principle, adults were found to need to know how learning would be conducted, what learning would occur, and why learning was important. Specifically,

research included that before adults could learn, they had to know “the how, the what, and the why of learning” (Knowles et al., 2005, p. 185).

Central to the development of effective learning opportunities was the inclusion of strategies that would motivate adults to actively engage in the learning process. Wlodowski (1985) suggested that adults are motivated to learn primarily by an internal need satisfaction. He identified four factors that had an impact on an adult’s motivation to learn: (a) success—adults want to engage in learning opportunities where they can experience success, (b) volition—adults want to have a choice in their learning experiences, (c) value—adults want to learn something that they value or view as relevant, and (d) enjoyment—adults want to engage in learning activities that they find enjoyable. Adult learners were found motivated to learn if they believed that they could learn new concepts, and if they found that the new concepts would help solve problems or issues of importance to them. In addition, Wlodowski (1985) found that highly motivating facilitators possessed great skill in the areas of expertise, empathy, enthusiasm, and clarity.

HRD professionals in school systems must continually research and examine organizational practices that relate to adult learning. Do current training practices reflect what is currently known about adult learning theory and strategies? Are we developing high levels of knowledge and expertise in the teacher workforce? Do our practices allow for teacher input in the creation and implementation of professional learning opportunities? Do our current practices complement the mission of our organization? Do we use evaluation measures to develop performance goals? Does our organization

promote an active and reflective learning environment for staff and students? Without experiences that allow adults to critically reflect on current practices, members of an organization will not easily embrace perspectives and interpretations that are new or are different from their own.

Summary of Review of the Literature

Educative activities were found to be used by professional teachers to further develop their teaching practices and knowledge base. It was found that expert teachers had a sense of personal responsibility to further their teaching skills and actively sought out educative activities, whereas novices tended to wait for others to determine what kinds of educative activities were needed in order to further develop their professional learning and practices. It was important to note that the types of educative activities used by professionals, in particular, teachers, could be very subjective and varied. In addition, researchers have stated there were many variables that impacted the reason why teachers engaged in educative activities, how teachers used them to learn more about their professional practices, and what teachers learned from such activities.

Defined as a professional group, teachers were found to expect to engage in professional learning opportunities throughout their professional careers. It is in this vein that the review of the literature included studies regarding how professionals learned in general, as well as studies that focused on how teachers learned. Formal professional learning opportunities continued to be the most widely used method to develop professional skills, and researchers have shown effective systems do have definite components.

Borko (2004) found that the process of teacher learning involved many things such as how adults learn, understanding precepts regarding adult learning, and how teachers apply what they have learned in educational settings. While Borko (2004) found research on teacher learning to be relatively young, she stated that there has been great progress in the last 20 years. For example, even though more research was needed with regard to what and how teachers learn from professional learning experiences, professional learning had been found to lead to improvements in instructional practices and student learning. Nonetheless, regardless of any research findings or education reform movements such as the NCLB Act of 2001, societal demands for improvement in student learning, and change in the classroom continued to fall heavily on teachers (Borko, 2004). It is for this reason that more research in the area of teacher learning continues to be needed.

Changes in society, knowledge, and technology will always have a continuous impact on professional learning needs and how professionals learn. In addition, society will always place great demands on professionals to learn the latest information quickly and effectively. There was a need for professions to develop new rules and practices for their memberships. Professional organizations will have to redefine methods to keep professionals actively engaged in the learning process in order to remain competitive and remain within the ethical parameters of professionalism.

Specifically, there was little research in critical areas within the field of special education, and there were many challenges for researchers. Problems in the field of special education included (a) teacher shortages resulting in positions filled by special

education teachers who were not fully licensed in their primary assignment, (b) shortages of teachers who were highly qualified and culturally diverse, (c) alternative licensure programs with varying program features, (d) inclusionary practices that stretched teachers too thin, and (e) current legislature that have changed the role of special education teacher from interventionist to content-area expert. These critical areas have continued to prevent possible candidates from considering the area of special education. In addition, recent comparison studies showed that more special education research was needed to establish a professional knowledge base with regard to effective special education teacher education programs, preparation practices, and professional learning opportunities (Boe, Cook, Bobbitt, & Terhanian, 1998; Brownell et al., 2005).

The interview process was found to have a strong connection with professional learning. The level of teaching skill of any district's teaching workforce has direct implications for the kinds of professional learning opportunities and educative activities that must be planned in order to develop proficient teachers. The structured interview process was found to be research-based; however, there is a need for more research in this area.

Researchers and educators must continue to learn as much as possible about how professionals learn and to know what current work has to say about professional learning systems as they determine which practices are the most effective. Analysis of the perceptions of special education teachers in the SAISD regarding the importance, comfort, and frequency levels of educative activities to further develop teaching skills were provided in this study. With regard to teacher use of educative activities to develop

their teaching skills, findings from this study will assist departments within the SAISD in planning professional learning opportunities and educative activities for special education teachers. In Chapter III, the study's methodology and procedures can be found. In addition, a description of the study's population sampling, and questionnaire instrument used to gather and tabulate the responses of the study's special education teacher sampling are included. Lastly, factor structures resulting from the application of factor analysis are described and discussed.

CHAPTER III

METHODOLOGY

Introduction

A discussion of the methodology and procedures used in the present study is included in this chapter. The sections in this chapter include: (a) a description of the setting, population, and survey procedures; (b) a description of the research design and variables; (c) a description of the questionnaire instrument used; (d) the conversion of the research questions to be answered to null hypotheses; and (e) an account of the data analysis and statistical procedures employed in this study. In addition, statistical benchmarks supported by research to justify methodologies and applications used in this study are presented in Chapter III.

Following a review of the literature, a comparative analysis of the perceptions of SAISD special education teachers was conducted with regard to importance, comfort, and frequency levels of educative activities to further develop teaching skills. The sampling of special education teachers participating in this study differed by teaching levels and by years of teaching experience. Using research-based studies whose findings included support for the premise that professionals use educative activities to further develop their professional skills, a questionnaire instrument comprised of educative activities used by teachers to develop their teaching skills was created by the researcher. Specifically, the researcher created a questionnaire instrument based upon typology, empirically tested frameworks, and findings found in studies by Houle (1980) and Cervero and Dimmick (1987).

Setting

The setting for the study was the San Antonio Independent School District . The SAISD is an accredited public school system serving the San Antonio, Texas, metropolitan area. Currently, SAISD ranks third in student population among the 15 school districts that are entirely or primarily within Bexar County. SAISD is the 13th largest of the 1,057 school districts in Texas, encompasses 79 square miles, and has a total population of 315,714 (Retrieved from SAISD website, January 31, 2010). Most of the district is within the city limits of San Antonio, but also serves parts of the cities of Olmos Park and Balcones Heights and a small unincorporated area of east Bexar County.

Student and Professional Staff Composition

Descriptive information regarding the ethnic composition of all students enrolled in SAISD during the 2006-2007 school year was tabulated and is exhibited in Table 1. While all student groups were represented, the majority were Hispanic. The district had a total student enrollment of 55,406 students in its pre-K through 12th grade programs.

Table 1. Summary of Total Student Enrollment by Ethnic Composition Within SAISD Boundaries for the 2006-2007 School Year

Ethnic Composition of Students in SAISD for 2006-2007 School Year	Percentage	Number of Students
White, Not of Hispanic Origin	2.9	1,657
Hispanic	88.6	49,049
African American	8.1	4,498
Asian or Pacific Islander	0.2	137
Native American	0.2	65
Total	100.0	55,406

Descriptive information regarding the ethnic composition of all students with disabilities in SAISD during the 2006-2007 school year was tabulated and is exhibited in Table 2. While all student groups were represented, the majority were Hispanic. The district had a total student enrollment of 6,693 students with disabilities for the 2006-2007 school year, and students with disabilities comprised approximately 12% of the total student enrollment for SAISD. The percentage of students with disabilities was reflective of the district-wide student population.

Table 2. Summary of Total Enrollment of Students With Disabilities by Ethnic Composition Within SAISD Boundaries for the 2006-2007 School Year

Ethnic Composition of Students with Disabilities in SAISD for 2006-2007 School Year	Percentage	Number of Students
White, Not of Hispanic Origin	4.5	302
Hispanic	85.6	5,695
African American	10.0	671
Asian	0.2	15
Native American	0.1	10
Total	100.0	6,693

With regard to the composition of professional staff, there were 3,494 faculty positions that included 413 special education teacher positions. In addition, there were 179 campus administrators and 66 district level administrator positions for the 2006-2007 school year. The largest ethnic composition of SAISD teachers was Hispanic and comprised 54.7% of the total number of teachers. The second largest ethnic composition of SAISD teachers was White, Not of Hispanic Origin, and comprised 32.3% of the total number of teachers. For the 2006-2007 school year, the composition by ethnicity among

special education teachers included the following: Hispanic 43.5%; White, Not of Hispanic Origin 36%; African-American 19%; Native American .75%; and Asian .5%.

Population

The participants for this survey study were special education teachers (n=210) from a total population of approximately 413 special education teachers in SAISD who provided instructional support and services to students with disabilities and who were selected through a non-proportional stratified random selection process. Participants in the study included 70 elementary school special education teachers, 70 middle school special education teachers, and 70 high school special education teachers. The selection of 70 special education teachers from each teaching level was based on a similar district distribution of special education teacher allocations. For the 2006-2007 school year, there were approximately 166 elementary special education teachers, 112 middle school special education teachers, and 135 high school special education teachers. Special education teachers who responded to the questionnaire instrument varied in age, gender, years of teaching experience, and levels of education.

While information for several demographic variables for respondents were gathered, independent variable analysis for age, gender, program assignment, content area certifications were not applied to this study. With limited research found in the area of special education and the application of an empirically tested framework for educative activities used by special education teachers, the purpose of this study was exploratory in nature with a primary focus on the examination of findings based upon teaching level and years of teaching experience. Findings from this study could lead to direct

recommendations for the respondents, training considerations for the SAISD, and implications for future studies. Lastly, demographic information such as program assignments and content area certifications were gathered and tabulated, but were not used since these items were specific to the SAISD and could not be generalized to any other school district or teacher sample.

Obtained through the study's questionnaire instrument, demographic information for the collective sampling of SAISD special education teachers is listed in Table 3. Observing Table 3, a summary of demographic information for the study's overall special education teacher sample (n=210) is listed by age, gender, years of teaching experience, and highest level of education.

Table 3. Summary of Demographic Information for the Special Education Teacher Sample

Sample	Age	F	%	Gender	F	%	Years of Teaching Experience	F	%	Highest Level of Education	F	%
210 Special Education Teachers (6 respondents did not report, and respondents reported partial demographic information)	22-35 =	38	18	Female =	152	72	0-5 =	62	30	B.A. =	59	28
	36-49 =	78	37	Male =	52	25	6-10 =	34	16	M. Ed. =	94	45
	50+ =	84	40				11-15 =	23	11	Post Grad Work =	41	20
							16-20 =	20	10			
							21-25 =	26	12	Post Grad Degree =	9	4
							26-30 =	27	13			
							31-35 =	6	3			
							36-40 =	3	1			
							41-45 =	1	.5			
Total		200	95		204	97		202	96.5		203	97

Demographic information regarding the sampling of SAISD special education teachers at the elementary school level is listed in Table 4. Observing Table 4, a summary of demographic information for the study's elementary school special education teacher sample (n=70) is listed by age, gender, years of teaching experience, and highest level of education.

Table 4. Summary of Demographic Information for the Elementary School Special Education Teacher Sample

Sample	Age	F	%	Gender	F	%	Years of Teaching Experience	F	%	Highest Level of Education	F	%
70 Elementary Special Education Teachers (1 respondent did not report age or level of education)	22-35 =	13	19	Female =	60	86	0-5 =	16	23	B.A. =	24	34
	36-49 =	27	39	Male =	10	14	6-10 =	10	14	M. Ed. =	30	43
	50+ =	29	41				11-15 =	10	14	Post Grad Work =	10	14
							16-20 =	8	11			
							21-25 =	11	16	Post Grad Degree =	5	7
							26-30 =	10	14			
							31-35 =	3	4			
							36-40 =	2	3			
Total		69	99		70	100		70	99		69	98

Demographic information regarding the sampling of SAISD special education teachers at the middle school level is listed in Table 5. Observing Table 5, a summary of demographic information for the study's middle school special education teacher sample (n=70) is listed by age, gender, years of teaching experience, and highest level of education.

Table 5. Summary of Demographic Information for the Middle School Special Education Teacher Sample

Sample	Age		Gender		Years of Teaching Experience		Highest Level of Education	
	F	%	F	%	F	%	F	%
70 Middle School Special Education Teachers (3 respondents did not report any demographic information, and 2 respondents reported partial demographic information)	22-35 = 12	17	Female = 51	73	0-5 = 21	30	B.A. = 17	24
	36-49 = 27	39	Male = 16	23	6-10 = 12	17	M. Ed. = 30	43
	50+ = 26	37			11-15 = 6	9	Post Grad Work = 19	27
					16-20 = 5	7		
					21-25 = 9	13	Post Grad Degree = 1	1
					26-30 = 10	14		
					31-35 = 1	1		
					36-40 = 1	1		
Total	65	93	67	96	65	92	67	95

Demographic information regarding the sampling of SAISD special education teachers at the high school level is listed in Table 6. Observing Table 6, a summary of high school special education teacher sample (n=70) is listed by age, gender, years of teaching experience, and highest level of education.

Upon review of the study's collective sample of special education teachers, an almost equal number of special education teachers were found in two of the study's age group ranges, i.e., 36-49 years of age and 50+ years of age. The majority of special education teachers were female. In addition, an almost equal distribution of teachers could be found among the study's three special education teacher groupings by years of teaching experience, and the majority of special education teachers possessed a master's degree.

Table 6. Summary of Demographic Information for the High School Special Education Teacher Sample

Sample	Age			Gender			Years of Teaching Experience			Highest Level of Education		
		F	%		F	%		F	%		F	%
70 High School Special Education Teachers (3 respondents did not report, and 1 respondent reported partial demographic information)	22-35	= 13	19	Female	= 41	59	0-5	= 25	36	B.A.	= 18	26
	36-49	= 24	34	Male	= 26	37	6-10	= 12	17	M. Ed.	= 34	49
	50+	= 29	41				11-15	= 7	10	Post Grad Work	= 12	17
							16-20	= 7	10			
							21-25	= 6	9	Post Grad Degree	= 3	4
							26-30	= 7	10			
							31-35	= 2	3			
							36-40	= 0	0			
							41-45	= 1	1			
Total		66	94		67	96		67	96		67	96

Procedures

In 2006, permission was granted to the researcher to conduct this study by San Antonio Independent School District and from the Institutional Review Board—Human Subjects in Research, Texas A&M University using the "expedited research" category. Special education teachers were selected through a non-proportional stratified random selection process. This process was selected because of the study's quantitative design and the selection of an exploratory factor analysis approach by the researcher to analyze relationships among the study's variables. In 1987, Cervero and Dimmick also used a factor analysis research design in order to provide empirical data to support Houle's mode of learning framework for professionals.

A packet was delivered to each of the participants for their completion. The packet included a cover letter from Texas A&M and the primary researcher explaining the proposed study, the questionnaire instrument, and a self-addressed envelope to facilitate responses to the researcher. A copy of participant packet contents can be found in Appendix A. The participants were informed that their responses would be confidential, that they could refuse to participate in the study, and that the questionnaire instrument would take approximately 15 minutes or less to complete. Questionnaire instruments in the packet were coded with a three-to-four digit code to reflect respondents' teaching level and questionnaire number for the tracking of returned questionnaires. The list of the three-to-four digit code numbers was destroyed by the researcher after the data collection was complete. No other identifying marks were made on the questionnaire materials.

At four-week and five-week intervals following the initial distribution of questionnaire instruments, personal contact was made to non-respondents to remind them to complete and return their questionnaires. Since this study's design was exploratory in nature, there was no need to also identify questionnaires by response intervals due to a second questionnaire distribution timeframe difference of only approximately one month from the initial distribution of packets. An assumption was made that the short interval timeframe would not result in response bias. Additional packets were available and hand-delivered to participants in the event the packets had been lost or destroyed accidentally. On November 27, 2006, eight weeks following the initial distribution of the packets, data collection was considered complete. Once

questionnaires were returned, responses were tabulated for frequency of responses and recorded. The resulting raw data were entered into the Statistical Package for Social Sciences—Windows, Version 11.5 computer program for analysis.

Research Design

The research design utilized was descriptive and quantitative in nature so that importance, comfort, and frequency levels of educative activities used to develop teaching skills as rated by special education teachers could be tabulated and analyzed. This type of design was appropriate because the independent variables were not manipulated and no treatment was administered to the special education teachers. For this study, the level of significance or the probability level selected to determine how large the difference between the means must be in order to be considered significantly different, and, thus, reject the null hypothesis for each of the research statements was established at the 0.05 level.

Data were collected using a mail-out questionnaire instrument with an attached cover letter that described the purpose of the study (see Appendix A). Information was obtained from special education teachers through the completion of a questionnaire instrument based on research findings and developed research instruments that depicted educative activities used by professional groups designed by Houle (1980), and Cervero and Dimmick (1987). The purpose of the questionnaire instrument was to elicit responses from special education teachers as they rated educative activities used to develop their teaching skills by importance, comfort, and frequency levels. Questionnaires were sent to special education teachers at three different teaching levels:

elementary, middle, and high school. This allowed for the investigation of rated importance, comfort, and frequency levels of educative activities at various teaching levels. In addition, the questionnaire instrument also allowed the researcher to collect and record demographic information that included age, gender, teaching level, years of teaching experience, highest level of education, program assignment, and content area certification variables.

Instrumentation

The questionnaire instrument used in this study included 32 Likert-type educative activities that could be used by special education teachers to develop their teaching skills. A four-point Likert-type scale in the questionnaire was utilized so special education teachers could rate importance, comfort, and frequency levels of listed educative activities. The participant to item ratio in this study was >5, which indicated that the number of participants to items was sufficient to analyze data. In addition, the questionnaire instrument contained demographic questions at the end of the form. With regard to content validity, the study's results obtained from factor analysis were interpreted by the researcher in order to address item and sampling validity.

In a review of existing instruments, early works by Arends (1983), Houle (1980), and Cervero and Dimmick (1987) researched educative activities used by various professionals including beginner teachers. However, studies by researchers who exclusively studied special education teacher perceptions regarding educative activities used to develop teaching skills could not be found. The researcher developed the study's questionnaire instrument based on the work of Arends (1983), Houle (1980), and

Cervero and Dimmick (1987). These researchers maintained that professionals did use educative activities to further develop their skills, and, in addition, maintained that professionals did learn through various modes of learning. Educative activities listed on the questionnaire instrument were selected from various resources that included instruments developed by Arends (1983), Houle (1980), and Cervero and Dimmick (1987), from educative activities used by the SAISD Professional Learning Department to further develop the teaching skills of teachers and from input by curriculum and instruction directors and specialists in the SAISD. Researchers who have conducted comparative studies between general and special education teachers have shown that these two teacher groups did share similarities in teacher preparation and professional learning opportunities thus, the researcher felt the application of findings and information from studies that identified educative activities used by professionals, specifically teacher groups, was appropriate (Brownell et al., 2005).

The educative activities selected for the questionnaire instrument were representative of those activities used by teachers to develop their teaching skills and were generated independent of Cervero and Dimmick's empirically tested framework, thereby, increasing the study's internal validity. Even though the educative activities listed on the respondents' questionnaires were not specifically grouped or identified by modes of learning, the researcher included educative activities such that representation from each mode of learning as defined in the work of Houle (1980) and Cervero and Dimmick (1987) could be found. The four modes of learning included (a) inquiry, (b) performance, (c) group instruction, and (d) self-instruction. It should be noted that

educative activities could be associated with more than one mode of learning. Houle (1980) stated in his research that modes of learning could include educative activities that overlapped. In addition, Cervero and Dimmick (1987) felt that professions should be studied individually since the nature of professions could differ and so could their educative activities. The researcher also consulted with SAISD curriculum and instruction directors and professional learning administrators regarding their listing of educative activities used to train teachers as an assurance of and as a means to establish content validity. Because the educative activities listed on the questionnaire instrument were reviewed by curriculum and instruction directors and specialists in the SAISD, content validity for the questionnaire instrument was based on expert opinion.

With regard to reliability measures, Cronbach's Alpha was selected to assess the reliability of the scores generated from the questionnaire. In their research design, Cervero and Dimmick's also applied Cronbach's Alpha to assess internal consistency of the instrument used in their study. The benchmark for Cronbach's Alpha is usually set at a 0.70 level (Nunnally, 1970). In addition, Cronbach's Alpha was applied to determine reliability for each identified factor.

Since this study used more than one statistical test to analyze data, a more stringent criterion, specifically Beferroni Adjustments, for statistical significance, and the exploratory nature of the study were considered (Perneger, 1998). For this survey study, Bonferroni Adjustments were not used because it was considered to be too conservative, and instead, the researcher described what tests of significance were

performed and included rationales with regard to the analysis and interpretation of multiple comparisons.

Research Questions and Corresponding Hypotheses

Inferential statistics were used to answer research questions developed to address possible areas of difference with regard to teaching level and years of teaching experience, and these research questions were converted to null hypotheses to facilitate the analysis.

For special education teachers in SAISD who differed in terms of teaching level, answers to the following questions were sought in this study:

Research Question 1

Is there a significant difference in terms of perceived importance concerning educative activities to further develop teaching skills?

Null Hypothesis 1

There is no significant difference between teaching levels of SAISD special education teachers for perceived importance concerning educative activities to further develop their teaching skills.

Research Question 2

Is there a significant difference in terms of perceived comfort concerning educative activities to further develop teaching skills?

Null Hypothesis 2

There is no significant difference between teaching levels of SAISD special education teachers for perceived comfort concerning educative activities to further develop their teaching skills.

Research Question 3

Is there a significant difference in terms of perceived frequency concerning educative activities to further develop teaching skills?

Null Hypothesis 3

There is no significant difference between teaching levels of SAISD special education teachers for perceived frequency concerning educative activities to further develop their teaching skills. For special education teachers in SAISD who differed in terms of years of teaching experience, answers to the following questions were sought in this study:

Research Question 4

Is there a significant difference in terms of perceived importance concerning educative activities to further develop teaching skills?

Null Hypothesis 4

There is no significant difference between years of teaching experience of SAISD special education teachers for perceived importance concerning educative activities to further develop their teaching skills.

Research Question 5

Is there a significant difference in terms of perceived comfort concerning educative activities to further develop teaching skills?

Null Hypothesis 5

There is no significant difference between years of teaching experience of SAISD special education teachers for perceived comfort concerning educative activities to further develop their teaching skills.

Research Question 6

Is there a significant difference in terms of perceived frequency concerning educative activities to further develop teaching skills?

Null Hypothesis 6

There is no significant difference between years of teaching experience of SAISD special education teachers for perceived frequency concerning educative activities to further develop their teaching skills.

Data Analysis

The study entailed data derived from SAISD special education teachers with regard to their perceptions of importance, comfort, and frequency levels of educative activities used to further develop teaching skills. Initially, the study's questionnaire was given to special education teacher specialists as a field test. Recommendations from this group of teacher specialists resulted in refinement of the questionnaire tool. It was the purpose of this study to examine whether significant differences existed among SAISD special education teachers who differed by teaching levels and by years of teaching

experience when comparing their perceptions of importance, comfort, and frequency levels to the educative activities listed in the study's questionnaire instrument. Data were analyzed to determine the nature and significance of the variables in this study.

In order to gather quantitative data, the responses for each item were entered and tabulated for frequency of responses. Teachers were asked to respond to each of the educative activities. The questionnaire instrument was designed with 32 items coded 1 through 4 (i.e., from "not used" to "frequently used"). For the purposes of this dissertation, all items had a common rating scale of 1 through 4.

The Statistical Package for the Social Sciences (SPSS)—Windows Version 11.5 was used to tabulate and analyze data. All raw data were downloaded into an Excel spreadsheet and all of the data fields were verified, and corrected if necessary, to ensure the most accurate data were analyzed in this study. Questionnaires with missing rating scale data were not included in the exploratory factor analysis process. For purposes of this study, four types of analysis were applied using SPSS; the first was descriptive statistics to analyze instrument results. Second, exploratory factor analysis was applied using direct oblimin rotation with a 0.32 minimum-loading criterion to evaluate and identify factors (Tabachnick & Fidell, 2001). Third, Cronbach's Alpha was used to establish reliability. Fourth, responses to research questions presented in this study were answered using results from MANOVA. In addition, partial eta-squared and power scores were also included in the MANOVA tables. Partial eta-squared scores of .14 or higher indicated large effect size, and power scores >.80 indicated high power.

The statistical analysis included both descriptive and inferential statistical results. Descriptive statistics such as number of cases, frequency, percentage, means, and standard deviations were used to describe the subgroups within each group. Descriptive data analysis was also undertaken to provide rich information about each of the background variables of the study. All data were disaggregated by group rather than individually. Analysis and interpretation of the data followed the principals prescribed in the book entitled, *Educational Research: An Introduction* by Gall et al. (1996).

Factor analysis was used to establish empirical construct validity of the questionnaire instrument. The methods of principal component analysis and direct oblimin rotation with Kaiser normalization were employed to extract and rotate factors, allow for simple structure, and thus facilitate interpretation. Items that loaded onto factors as a result of the application of factor analysis were utilized in naming the factors.

Using results from factor analysis, factor scores were obtained by adding those items that loaded onto each factor per measure. Cronbach's Alpha was used to establish reliability. MANOVA was used to examine differences among special education teachers by teaching level with regard to the rating of educative activities in terms of Importance, Comfort, and Frequency. In addition, MANOVA was used to examine differences among special education teachers by years of teaching experience with regard to the rating of educative activities in terms of Importance, Comfort, and Frequency.

Factor Analysis

The decision to use factor analysis was based on the exploratory nature of the study, and a theoretical framework that was originally developed by Houle and, later, was empirically tested through factor analysis by Cervero and Dimmick. The application of factor analysis allowed the researcher to review item loadings grouped by similarities. In this study, data were run using factor analysis, and items with low factor loadings and/or high cross loadings were dropped.

Factor Analysis: Importance Measure

With regard to Importance, participants were asked to rate the importance level of listed educative activities. A question for participants to consider as they rated these educative activities for the Importance Measure included the following—How important is the educative activity to the development of teaching skills? Using exploratory factor analysis, the researcher was able to examine the interrelationships among variables for the Importance Measure.

Initially, the factorability of the items for the Importance Measure was analyzed in three different ways. First, the Kaiser-Meyer-Olkin measure of sampling adequacy was .86, which is above the recommended value of .60 for sampling adequacy. Second, the Bartlett's test for sphericity was significant (χ^2 (300) = 1630.99, $p < .001$), which indicated that the items were appropriate for factor analysis. Third, the items included for factor analysis all had communalities greater than .30, which confirmed that the items shared some common variance (see Appendix B). In addition, the percent of variance explained was also reviewed.

A principal components factor analysis with direct oblimin rotation was conducted on the Importance Measure. Tabachnick and Fidell's (2001) criteria of .32 as a minimum loading on any factor, and .32 or higher cross loading was used as a guideline for the inclusion or exclusion of items. Based on these criteria, 7 of the 32 items were deleted from the Importance Measure.

A combination of scree plot analysis, examination of factor structure, and minEigen criterion was used to determine the number of factors. A factor was retained if it fell on the sharp descent of the scree plot (See Appendix C). Additionally, Costello and Osborne (2005) recommend that researchers seek out the cleanest factor structure (i.e., no or few cross loadings, no factors with less than three items). According to these criteria, two factors were retained. Rotated factor loadings for the Importance Measure are listed in Table 7.

In exploratory factor analysis, the benchmark for percentage of total variance is usually set at 50% (Tabachnick & Fidell, 2001). For the Importance Measure, the percentage of total variance was 41.1. The total variance explained for the Importance Measure did not reach the benchmark. Definitive conclusions could not be reached since there was insufficient explained variance found in the dataset.

Table 7. Rotated Factor Loadings for Importance Measure

Important Measure	Component 1	Component 2
q01_i		.514
q02_i		.631
q03_i		.541
q05_i		.508
q06_i		.398
q07_i	.471	
q08_i		.564
q09_i		.506
q10_i	.743	
q12_i	.676	
q13_i	.628	
q15_i		.506
q16_i		.522
q18_i	.818	
q20_i	.794	
q22_i	.574	
q23_i	.460	
q24_i	.760	
q25_i	.620	
q26_i		.650
q27_i		.626
q28_i		.717
q29_i	.586	
q30_i	.528	
q32_i		.494

Based on the shared characteristics of those educative items with a high loading for this factor and research by Cervero and Dimmick (1987), Factor 1 was labeled

Performance-Based Importance. This factor had an Eigen value of 8.22 and explained 32.7% of the variance. In addition, Performance-Based Importance had a Cronbach's Alpha of .89, which indicated a reliable scale, and observing Table 7, items 7, 10, 12, 13, 18, 20, 22, 23, 24, 25, 29, and 30 loaded on this factor. A description of items that loaded on Performance-Based Importance included: Item #7 Observe other classroom teachers in the same district and program assignment, Item #10 Participate in peer coaching activities, Item #12 Receive individualized assistance from an instructional specialist, Item #13 Receive individualized assistance from a campus administrator, Item #18 Co-teach a lesson with an instructional specialist, Item #20 Collaborate with a mentor teacher, Item #22 Implement a teaching strategy and review results with a group of content area teachers, Item #23 Assume responsibilities associated with the role of a mentor teacher, Item #24 Co-teach with another classroom teacher, Item #25 Role play new teaching skills with peers, Item #29 Video tape teacher presentations and discuss teaching techniques among peers, and Item #30 Attend a trainer-of-trainers style workshop.

Certain educative activities had a high loading on Performance-Based Importance and had shared similarities of observing peers, peer coaching, co-teaching with peers, peer discussions regarding teaching techniques, and individualized assistance from instructional specialists and administrators. According to research by Cervero and Dimmick (1987), an individual's motivation associated with performance-based educative activities was to obtain clear and definite information; however, the primary motivation for this mode of learning was to provide quality instruction. This study's

sampling of special education teachers rated educative activities associated with active participation characteristics and active discussion of teaching strategies among peers as important. Based on shared information-seeking characteristics of those educative items with a high loading on this factor and research by Cervero and Dimmick (1987), Factor 2 was labeled Self-Instruction-Based Importance. This factor had an Eigen value of 2.10 and explained 8.4% of the variance. Self-Instruction-Based Importance had a Cronbach's Alpha of .83, which indicated a reliable scale, and observing Table 7, items 1, 2, 3, 5, 6, 8, 9, 15, 16, 26, 27, 28, and 32 loaded on this factor. A description of items that loaded on Self-Instruction-Based Importance included: Item #1 Attend a conference with a focus on content area skill development, Item #2 Participate in curriculum development work at district or campus level, Item #3 Field test instructional materials, Item #5 Engage in an independent study that develops content area skills, Item #6 Attend district training initiatives that introduce a new skill and include demonstration activities, Item #8 Attend summer courses at a college or university, Item #9 Attend district personnel workshops after the school day, Item #15 Participate in a book study group, Item #16, Take a higher education course or district developed course during the school year, Item #26 Read a research based article from a professional journal or book, Item #27 Attend a training session that provides a lecture style presentation, Item #28 Attend a workshop presented by a regional or national expert, and Item #32 Participate in a workshop that includes web-based activities and a lecture-style presentation.

Certain educative activities had a high loading on Self-Instruction-Based Importance and had shared similarities of seeking information from an authority or

source. As defined by Cervero and Dimmick (1987), an individual's major motivation when engaging in self-instruction-based educative activities was to obtain some clear and definite knowledge from a source. This study's sampling of special education teachers rated those activities that could provide opportunities to learn new teaching strategies or new information from expert or professional sources as important.

Factor Analysis: Comfort Measure

With regard to Comfort, participants were asked to rate the comfort level of listed educative activities. A question for participants to consider as they rated these educative activities for the Comfort Measure included the following—How comfortable do special education teachers feel using an educative activity to develop teaching skills? Using exploratory factor analysis, the researcher was able to examine the interrelationships among variables for the Comfort Measure.

Initially, the factorability of the items for the Comfort Measure was analyzed in three different ways. First, the Kaiser-Meyer-Olkin measure of sampling adequacy was .88, which is above the recommended value of .60 for sampling adequacy. Second, the Bartlett's test for sphericity was significant (χ^2 (325) = 1849.23, $p < .001$), which indicated that the items were appropriate for factor analysis. Third, the items included for factor analysis all had communalities greater than .30, which confirmed that the items shared some common variance (see Appendix B). In addition, the percent of variance explained was also reviewed.

A principal components factor analysis with direct oblimin rotation was conducted on the Comfort Measure. Based on these criteria, 6 of the 32 items were deleted from the Comfort Measure. In addition, a combination of scree plot analysis, examination of factor structure, and minEigen criterion was used to determine the number of factors. According to these criteria, three factors were retained (See Appendix C). Rotated factor loadings for the Comfort Measure are listed in Table 8.

For the Comfort Measure, the percentage of total variance was 48.7. The total variance explained for the Comfort Measure did not reach the benchmark. Definitive conclusions could not be reached since there was an insufficient explained variance found in the dataset.

Table 8. Rotated Factor Loadings for Comfort Measure

Comfort Measure	Component		
	1	2	3
q01_c			.564
q02_c			.642
q05_c			.673
q06_c			.448
q08_c			.555
q09_c		.347	.500
q10_c	.741		
q11_c	.715		
q12_c	.692		
q13_c	.637		
q14_c		.664	
q15_c		.583	
q16_c			.511
q18_c	.823		

Table 8 (continued)

	Component		
Comfort Measure	1	2	3
q20_c	.643		
q21_c	.553		
q22_c	.611		
q23_c	.487		
q24_c	.793		
q25_c	.717		
q26_c		.474	
q27_c		.716	
q28_c		.750	
q29_c	.611		
q30_c	.625		
q31_c		.517	

Based on a high loading of educative activities with shared characteristics of active engagement in order to learn and provide quality instruction and research by Cervero and Dimmick (1987), Factor 1 was labeled Performance-Based Comfort. This factor had an Eigen value of 9.09 and explained 35.0% of the variance. Performance-Based Comfort had a Cronbach's Alpha of .91, which indicated a reliable scale, and observing Table 4, items 10, 11, 12, 13, 18, 20, 21, 22, 23, 24, 25, 29, and 30 loaded on this factor. A description of items that loaded on Performance-Based Comfort included: Item #10 Participate in peer coaching activities, Item #11 Make a presentation to peers or parents, Item #12 Receive individualized assistance from an instructional specialist, Item #13 Receive individualized assistance from a campus administrator, Item

#18 Co-teach a lesson with an instructional specialist, Item #20 Collaborate with a mentor teacher, Item #21 Demonstrate a teaching strategy to peers, Item #22 Implement a teaching strategy and review results with a group of content area teachers, Item #23 Assume responsibilities associated with the role of a mentor teacher, Item #24 Co-teach with another classroom teacher, Item #25 Role play new teaching skills with peers, Item #29 Video tape teacher presentations and discuss teaching techniques among peers, and Item #30 Attend a trainer-of-trainers style workshop.

Certain educative activities had a high loading on Performance-Based Comfort and had shared similarities of presenting to peers and parents, collaborating with and mentoring peers, co-teaching with peers, discussing teaching techniques after role play and video-taped teaching demonstrations, and individualized assistance from instructional specialists and administrators. According to research by Cervero and Dimmick (1987), an individual's primary motivation when engaging in performance educative activities was to learn and provide quality instruction. This study's sampling of special education teachers rated educative activities associated with interactive performance and discussion learning opportunities as comfortable. Based on shared information-seeking characteristics of those educative factors with a high loading on this factor and research by Cervero and Dimmick, Factor 2 was labeled Self-Instruction-Based Comfort. This factor had an Eigen value of 1.96 and explained 7.6% of the variance. Self-Instruction-Comfort had a Cronbach's Alpha of .77, which indicated a reliable scale, and observing Table 4, items 14, 15, 26, 27, 28, and 31 loaded on this factor. A description of items that loaded on Self-Instruction-Based Comfort included:

Item #14 Complete online training modules with immediate feedback/results provided, Item #15 Participate in a book study group, Item #26 Read a research based article from a professional journal or book, Item #27 Attend a training session that provides a lecture style presentation, Item #28 Attend a workshop presented by a regional or national expert, and Item #31 Participate in monthly teacher support group meetings in order to learn new teaching strategies and discuss implemented teaching strategies.

Certain educative activities had a high loading on Self-Instruction-Based Comfort and had shared similarities of seeking information from an authority or source. As defined by Cervero and Dimmick (1987), an individual's major motivation when engaging in self-instruction-based educative was to obtain some clear and definite knowledge from a source. This study's sampling of special education teachers rated those activities that could provide opportunities to learn new teaching strategies or new information from expert or professional sources as comfortable. Based on a high loading of educative activities with a shared characteristic of exploring new ways of thinking about teaching techniques and strategies and research by Cervero and Dimmick, Factor 3 was labeled Inquiry-Based Comfort. This factor had an Eigen value of 1.60 and explained 6.1% of the variance. Inquiry-Based Comfort had a Cronbach's Alpha of .70, which indicated a reliable scale, and observing Table 4, Items 1, 2, 5, 6, 8, 9, and 16 loaded on this factor. A description of items that loaded on Inquiry-Based Comfort included: Items #1 Attend a conference with a focus on content area skill development, Item #2 Participate in curriculum development work at district or campus level, Item #5 Engage in an independent study that introduces a new skill, Item #6 Attend district

training initiatives that introduce a new skill and include demonstration activities, Item #8 Attend summer courses at a college or university, Item #9 Attend district-sponsored workshops after the school day, and Item #16 Take a higher education course or district-developed course during the school year.

Certain educative activities had a high loading on Inquiry-Based Comfort and had shared similarities of participating in educative activities that could help people achieve new ways of thinking, though outcomes could not be predicted in advance. As defined by Cervero and Dimmick (1987), an individual's major motivation when engaging in inquiry-based educative activities was to learn; however, the person may not have a "desired knowledge or skill in mind" (Cervero & Dimmick, 1987). This study's sampling of special education teachers rated those activities that could provide opportunities to learn new ways of thinking with regard to teaching as comfortable.

Factor Analysis Three: Frequency Measure

With regard to Frequency, participants were asked to rate the frequency level of listed educative activities. A question for participants to consider as they rated these educative activities for the Frequency Measure included the following—How frequently do special education teachers use an educative activity to develop teaching skills? Using exploratory factor analysis, the researcher was able to examine the interrelationships among variables for the Frequency Measure.

Initially, the factorability of the items for the Frequency Measure was analyzed in three different ways. First, the Kaiser-Meyer-Olkin measure of sampling adequacy was .90, which is above the recommended value of .60 for sampling adequacy. Second, the

Bartlett's test for sphericity was significant (χ^2 (325) = 2150.35, $p < .001$), which indicated that the items were appropriate for factor analysis. Third, the items included for factor analysis all had communalities greater than .30, which confirmed that the items shared some common variance (see Appendix B). In addition, the percent of variance explained was also reviewed.

A principal components factor analysis with direct oblimin rotation was conducted on the Frequency Measure. Based on these criteria, 6 of the 32 items were deleted from the Frequency Measure. In addition, a combination of scree plot analysis, examination of factor structure, and minEigen criterion was used to determine the number of factors (see Appendix C). According to these criteria, two factors were retained. Rotated factor loadings for the Frequency Measure are listed in Table 9.

For the Frequency Measure, the percentage of total variance was 47.3. The total variance explained for the Frequency Measure did not reach the benchmark. Definitive conclusions could not be reached since there was insufficient explained variance found in the dataset.

Table 9. Rotated Factor Loadings for Frequency Measure

Frequency Measure	Component	
	1	2
q01_f		.582
q02_f	.429	
q06_f		.716
q08_f	.602	
q09_f		.875
Q11_f	.649	
Q12_f	.517	
Q13_f	.668	
q14_f	.587	
q15_f	.663	
q16_f	.651	
q17_f	.673	
q18_f	.840	
q19_f	.453	
q20_f	.534	
q21_f	.760	
q22_f	.808	
q23_f	.574	
q24_f	.776	
q25_f		.725
q26_f		.562
q27_f	.414	
q29_f	.694	
q30_f	.694	
q31_f		.723
q32_f	.593	

Based on a high loading of educative activities with shared characteristics of active engagement in order to learn and provide quality instruction and research by Cervero and Dimmick (1987), Factor 1 was labeled Performance-Based Frequency. This factor had an Eigen value of 10.28 and explained 39.5% of the variance. Performance-Based Frequency had a Cronbach's Alpha of .94, which indicated a reliable scale, and observing Table 9, items 2, 8, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, and 32 loaded on this factor. A description of items that loaded on Performance-Based Frequency included: Item #2 Participate in curriculum development work at district or campus level, Item #8 Attend summer courses at a college or university, Item #11 Make a presentation to peers or parents, Item #12 Receive individualized assistance from an instructional specialist, Item #13 Receive individualized assistance from a campus administrator, Item #14 Complete online training modules with immediate feedback/results provided, Item #15 Participate in a book study group, Item #16 Take a higher education course or district-developed course during the school year, Item #17 Collaborate and plan with a team of teachers from a specific content area, Item #18 Co-teach a lesson with an instructional specialist, Item #19 Prepare a teaching aid (e.g., learning center, student study guides), Item #20 Collaborate with a mentor teacher, Item #21 Demonstrate a teaching strategy to peers, Item #22 Implement a teaching strategy and review results with a group of content area teachers, Item #23 Assume responsibilities associated with the role of a mentor teacher, Item #24 Co-teach with another classroom teacher, Item #25 Role play new teaching skills with peers, Item #26 Read a research-based article from a professional journal or

book, Item #29 Video tape teacher presentations and discuss teaching techniques among peers, Item #30 Attend a trainer-of-trainer style workshop, and Item #32 Participate in a workshop that includes web-based activities and a lecture-style presentation.

Certain educative activities had a high loading on Performance-Based Frequency and had shared similarities of participating in district curriculum development work sessions, higher education courses, presenting to peers and parents, seeking individualized assistance from instructional specialists and administrators, collaborating with and mentoring peers, creating teaching aids, co-teaching with peers, discussing teaching techniques after role play and video-taped teaching demonstrations, reading professional journals, and participating in workshops. According to research by Cervero and Dimmick (1987), an individual's primary motivation when engaging in performance educative activities was to learn and provide quality instruction. This study's sampling of special education teachers rated educative activities associated with interactive learning opportunities as frequently used by them. Based on a high loading of educative activities with a shared characteristic of exploring new ways of thinking about teaching techniques and strategies, and research by Cervero and Dimmick, Factor 2 was labeled Inquiry-Based Frequency. Factor 2 had an Eigen value of 2.02 and explained 7.8% of the variance. This factor had a Cronbach's Alpha of .72, which indicated a reliable scale, and observing Table 9, items 1, 6, 9, and 31 loaded on this factor. A description of items that loaded on Inquiry-Based Frequency included: Item #1 Attend a conference with a focus on content area skill development, Item #6 Attend district training initiatives that introduce a new skill and include demonstration activities, Item #9 Attend district-

sponsored workshops after the school day, and Item #31 Participate in monthly teacher support group meetings in order to learn new teaching strategies and discuss implemented teaching strategies.

Certain educative activities had a high loading on Inquiry-Based Frequency and had shared similarities of participating in educative activities that could help people achieve new ways of thinking though outcomes could not be predicted in advance. As defined by Cervero and Dimmick (1987), an individual's major motivation when engaging in inquiry-based educative activities was to learn; however, the person may not have a "desired knowledge or skill in mind" (Cervero & Dimmick, 1987). This study's sampling of special education teachers rated those activities that could provide opportunities to learn new ways of thinking with regard to teaching as frequently used by them.

Summary

The purpose of this chapter was to review the methodology and procedures used in this study. The setting, population, procedures, research design, instrumentation, data analysis were outlined. Research questions were rephrased to null hypotheses to facilitate the analysis of data using descriptive and inferential statistics. An account of findings as a result of the application of factor analysis using criterion of Eigen value over 1 to retain a factor was included in this chapter. Item loadings per factors did share characteristics associated with the modes of learning identified in research by Cervero and Dimmick (1987). However findings for this study did not result in a four factor solution per measure since the design of the questionnaire instrument used in this study

was new, and the study's methodology did not test the theoretical framework proposed by Houle, and Cervero and Dimmick. The results of the analyses of data collected from the responses to the questionnaire instrument used in this study can be found in Chapter IV.

CHAPTER IV

RESULTS OF DATA ANALYSIS

> Approach each new problem not with a view of finding what you hope will be there, but to get to the truth, the realities that must be grappled with. You may not like what you find. In that case, you are entitled to try to change it. But do not deceive yourself as to what you find to be the facts of the situation.
>
> -Bernard M. Baruch

Introduction

The purpose of this research was to analyze data gathered from a sampling of special education teachers who rated educative activities used to develop teaching skills by importance, comfort, and frequency levels. The results of multivariate analysis of variance of the data collected in this study were included in this chapter. In addition, statistical findings for the research questions posed for this study were included.

The research questions identified in this study were: For special education teachers in SAISD who differed in terms of teaching levels, answers to the following questions were sought in this study:

1. Is there a significant difference in terms of perceived importance concerning educative activities to further develop teaching skills?
2. Is there a significant difference in terms of perceived comfort concerning educative activities to further develop teaching skills?
3. Is there a significant difference in terms of perceived frequency concerning educative activities to further develop teaching skills?

For special education teachers in SAISD who differed in terms of years of teaching experience, answers to the following questions were sought in this study:

4. Is there a significant difference in terms of perceived importance concerning educative activities to further develop teaching skills?
5. Is there a significant difference in terms of perceived comfort concerning educative activities to further develop teaching skills?
6. Is there a significant difference in terms of perceived frequency concerning educative activities to further develop teaching skills?

It was hypothesized that there would be no significant difference in terms of perceived importance, comfort, and frequency levels of educative activities to further develop teaching skills as identified by special education teachers in the San Antonio Independent School District. The study's data were used to determine if special education teachers who differed by teaching level and by years of teaching experience had different perceptions with regard to Importance, Comfort, and Frequency Measures.

MANOVA Results by Measure and Teaching Level

Findings for each measure by teaching level are presented in Table 10. These results were obtained by applying a data reduction technique to a representative scale of the original 32 items resulting in a parsimonious solution. Factor scores were subjected to MANOVA. Along with the criteria for statistical significance established in Chapter III, the obtained Wilk's Lambdas results when converted to F ratios resulted in "p" values which were not significant for the Importance, Comfort, and Frequency Measures. Complete MANOVA findings can be found in Appendix D.

Table 10. Summary of MANOVA Results by Measure and Teaching Level

Measure	Wilks' Lambda	df	F	p	Partial Eta Squared	Power
Importance Measure	.98	(4,316)	.77	.54	.01	.25
Comfort Measure.	.96	(6,304)	1.07	.38	.02	.42
Frequency Measure	.94	(4,306)	2.28	.06	.03	.66

Importance Measure: Two-Factor Solution

A one-way multivariate analysis of variance was conducted to determine the effect of teaching level on Importance. Observing Table 10, no significant differences were found among the three teaching levels on the two-factor solution of Importance, Wilk's $\Lambda = .98$, $F(4, 316) = .77$, $p = .54$. The observed power for this MANOVA was .25, which indicated a 75% chance of failing to detect an effect. Since there was no significant difference between the teaching levels of SAISD special education teachers and perceived importance concerning educative activities to further develop their teaching skills, the null hypothesis was held tenable for the factor scores of the Importance Measure.

Comfort Measure: Three Factor Solution

A one-way multivariate analysis of variance was conducted to determine the effect of teaching level on Comfort. No significant differences were found among the three teaching levels on the three factor solution of Comfort, Wilk's $\Lambda = .96$, $F(6, 304) =$

1.07, p = .38. The observed power for this MANOVA was .42, which indicated a 58% chance of failing to detect an effect. Since there was no significant difference between the teaching levels of SAISD special education teachers and perceived comfort concerning educative activities to further develop their teaching skills, the null hypothesis was held tenable for the factor scores of the Comfort Measure.

Frequency Measure: Two Factor Solution

A one-way multivariate analysis of variance was conducted to determine the effect of teaching level on Frequency. No significant differences were found among the teaching levels on the two-factor solution of Frequency, Wilk's Λ = .94, $F(4, 306)$ = 2.28, p = .06. The observed power for this test is .66, which indicated a 34% chance of failing to detect an effect. Since there was no significant difference between the teaching levels of SAISD special education teachers and perceived frequency concerning educative activities to further develop their teaching skills, the null hypothesis was held tenable for the factor scores of the Frequency Measure.

MANOVA Results by Measure and Years of Teaching Experience

Findings for each measure by years of teaching experience are presented in Table 11. These results were obtained by applying a data reduction technique to a representative scale of the original 32 items resulting in a parsimonious solution. Factor scores were subjected to MANOVA. Along with the criteria for statistical significance established in Chapter III, the obtained Wilk's Lambdas results when converted to F ratios resulted in "p" values, which were not significant for the Importance, Comfort, and Frequency Measures. Complete MANOVA findings are found in Appendix D.

Table 11. Summary of MANOVA Results by Measure and Years of Teaching Experience

Measure	Wilks' Lambda	df	F	p	Partial Eta Squared	Power
Importance Measure	.97	(4,316)	1.16	.33	.01	.36
Comfort Measure	.93	(6,304)	2.00	.07	.04	.73
Frequency Measure	.99	(4,306)	.46	.77	.01	.16

Importance Measure: Two Factor Solution

A one-way multivariate analysis of variance was conducted to determine the effect of years of teaching experience on Importance. Observing Table 11, no significant differences were found among years of teaching experience on the two-factor solution of Importance, Wilk's $\Lambda = .97$, $F(4, 316) = 1.16$, $p = .33$. The observed power for this test is .36, which indicated a 64% chance of failing to detect an effect. Since there was no significant difference between years of teaching experience and perceived importance for SAISD special education teachers with regard to educative activities to further develop teaching skills, the null hypothesis was held tenable for the factor scores of the Importance Measure.

Comfort Measure: Three Factor Solution

A one-way multivariate analysis of variance was conducted to determine the effect of years of experience on the three factor solution of Comfort. No significant differences were found among years of teaching experience on the three factor solution

of Comfort, Wilk's $\Lambda = .93$, $F(6, 304) = 2.00$, $p = .07$. The observed power for this test is .73, which indicated a 27% chance of failing to detect an effect. Since there was no significant difference between years of teaching experience and perceived comfort for SAISD special education teachers with regard to educative activities to further develop teaching skills, the null hypothesis was held tenable for the factor scores of the Comfort Measure.

Frequency Measure: Two Factor Solution

A one-way multivariate analysis of variance was conducted to determine the effect of years of experience on the two-factor solution of Frequency. Observing Table 11, no significant differences were found among years of teaching experience on the two-factor solution of Frequency, Wilk's $\Lambda = .99$, $F(4, 306) = 0.46$, $p = .77$. The observed power was .16, which indicated an 84% chance of failing to detect an effect. Since there was no significant difference between years of teaching experience and perceived frequency for SAISD special education teachers with regard to educative activities to further develop teaching skills, the null hypothesis was held tenable for the factor scores of the Frequency Measure.

S**ummary**

With no statistical significant differences found for Importance, Comfort, and Frequency Measures by teaching level or by years of teaching experience, the null hypotheses for this study were held tenable. Even though statistical significant differences were not found in this study, Thompson (2002) stated that researchers should consider statistical and practical significance with considering whether results are

important. Statistical significance evaluates ordinal relationships and tells us how sure we are that a difference or relationships exists, but it does not mean that findings are important. A study's findings can be important even though they are not unusual or atypical. Practical significance includes the practice of quantifying findings in order to evaluate the practical noteworthiness of results. Along with a summary, conclusions, and recommendations, the study's findings and implications for consideration and future research are discussed in Chapter V.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

This chapter contains a summary section that includes the main ideas of the previous four chapters: Introduction, Review of the Literature, Methodology, and Analysis of Data. Conclusions derived from the research findings are presented with related discussion and implications. Finally, recommendations are presented for practitioners, researchers, and career professionals of higher education institutions, and future research strategies are suggested.

Introduction

Researchers have indicated that professional learning opportunities for teachers can lead to improved instruction and student learning; however, more research to ascertain how and what teachers learn from these types of activities continues to be needed in the field of professional learning (Borko, 2004). Formal professional learning opportunities were found to be the most used method of developing teaching skills for teachers, even though Cervero and Dimmick (1987) revealed that professionals learn in a variety of ways and through a myriad of educative activities.

The researcher's primary mission in this study was to apply research findings by Houle (1980) and Cervero and Dimmick (1987) to the design of a survey study whose purpose was to explore teacher perceptions when engaging in educative activities. SAISD special education teachers were asked to rate the importance, comfort, and frequency levels of identified educative activities used to develop teaching skills, and

results from analyses were presented. A basis for further research was provided as a result of the study's findings.

Review of the Literature

Researchers have stated that teachers do use educative activities to further develop their teaching skills and their knowledge base (Arends, 1983; Cervero & Dimmick, 1987; Houle, 1980); however, these educative activities can be highly subjective and varied. While formal professional learning opportunities were found to be the most common method used to develop professional skills, Borko (2004) found that it was important for developers of these types of learning experiences to understand how adults learn, to understand precepts regarding adult learning, and to understand how teachers use what they have learned. She found that effective professional learning opportunities do have definite components. With regard to expectations and current trends, it should be noted that researchers recognized that professional learning was also impacted by societal demands on professionals to learn the latest research practices effectively and efficiently.

The field of special education is not well researched, and researchers who have completed comparison studies of general and special education teacher preparation programs have shown that there is a great need for more longitudinal studies in this area. This teaching area faces continuous teacher shortages, and researchers and educators in current literature have stated that there was a need for well-prepared candidates in the field of special education. In addition, special education educators have faced some

significant philosophical and teaching changes that were different from general education teachers as a result of current legislative changes (Brownell et al., 2005).

Methodology

The methodology used by the researcher included a quantitative design and a questionnaire instrument to gather special education teacher responses. The targeted population for this study was special education teachers in the San Antonio Independent School District, and questionnaire instruments were distributed to this group of teachers in the fall of 2006. Specifically, the participants for this study were drawn from three teaching levels: (a) elementary school special education teachers, (b) middle school special education teachers, and (c) high school special education teachers. In addition, all of these special education teachers varied by years of teaching experience; and for purposes of this study, three categories for years of teaching experience were identified. The instrument used was a self-report questionnaire instrument consisting of 32 educative activities and was Likert-based with a range from 1-4.

In order to answer Research Questions 1-6, descriptive statistics including frequency, percentage, mean, standard deviation, and mean ranking were conducted. A factor analysis process was applied in order to address the construct validity of the 32 educative activities used in this study and to interpret the empirical data obtained from the responses gathered from this special education teacher sample. The methods of principal component analysis and direct oblimin rotation were used to extract and interpret factors resulting from the statistical process.

Analysis of Data

Among the study's participants, 70 were elementary special education teachers, 70 were middle school special education teachers, and 70 were high school special education teachers in SAISD. In addition, these special education teachers varied by years of teaching experience. Among the study's participants who reported years of teaching experience, 62 special education teachers had 0-5 years of teaching experience, 77 special education teachers had 6-20 years of teaching experience, and 63 special education teachers had 21+ years of teaching experience. A total of 210 questionnaire instruments submitted by SAISD special education teachers were collected in this study. Questionnaires with missing data were not used in this study.

Before completing the data analysis for the research questions, factor analyses for Importance, Comfort, and Frequency measures of the questionnaire instrument were conducted by the researcher. Items in each section of the questionnaire instrument were subjected to principal component analysis for identifying the distinct factors. The factor analysis method of using criterion of Eigen value over 1 was applied. Direct oblimin rotation was performed to elicit simple structure for the factors, and Cronbach's Alpha was applied to determine reliability scores. MANOVA was performed to determine if there were statistical significant differences by teaching levels. In addition, MANOVA was performed to determine if there were statistical significant differences by years of teaching experience.

Conclusions

Several conclusions could be drawn from the data presented in Chapter IV of this survey study regarding the rating of educative activities used by SAISD special education teachers to further develop their teaching skills. The researcher did find new insight from the data analyses and guidance for future studies. The conclusions formulated from studying the data and the differences obtained in the dependent variables are presented in relation to the study's six research questions.

Importance Measure

No significance differences were found for the Importance Measure by teaching level or by years of teaching experience. Since there was no statistical significant difference by teaching level or by years of teaching experience for SAISD special education teachers and perceived importance concerning educative activities to further develop their teaching skills, the null hypotheses were held tenable. More research is needed to definitively support whether there are educative activities perceived as important by special education teachers.

With little information regarding research-based educative activities, teachers may have to utilize other resources besides research as they consider educative activities in terms of importance. The review of the literature indicated that there was no set of educative activities that could be applied to every learning opportunity. In fact, researchers have found that learning opportunities should be grounded in practice (Guskey & Yoon, 2009), and educative activities should be selected based upon the specific content involved, the nature of the learning opportunity or task, and the context

of the learning experience. Peer observations, peer coaching, mentor experiences, in-school study groups, examination of student work, and constructive feedback were found to allow teachers to reflect upon their practices, strategies, and learning (Borko, 2004; Huebner, 2009). In addition, it was recommended that professional learning opportunities include direct instruction, self-reflection, small group discussion, and follow-up learning activities (Sousa, 2009).

It should be noted that in the review of the literature, specific promising educative activities across studies were identified even though there was no definitive body of research to support their effectiveness with regard to improved teacher learning. One general theme indicated that teachers should be provided opportunities to learn or receive information in a variety of ways—in print, online, one-to-one interactions, audio-visual segments, and in small and large groups. In addition, learning environments should be positive and reinforcing so teachers will thoroughly understand and apply information in classroom settings (Huebner, 2009). Emotive studies and brain research have also indicated that adults remember what is learned if they feel positive about a learning experience (Sousa, 2009). Lastly, collaborative discussion opportunities that promoted a sharing of information and learning were viewed as effective (Borko, 2004; Huebner, 2009).

With regard to beginner teachers, required training opportunities and the kinds of learning opportunities requested by beginner teachers were not identified in a review of the research (Arends, 1983). From research found in the review of the literature, findings also indicated that most educative activities were chosen by the teacher (Arends, 1983).

While Arends did not see this as necessarily a negative issue, it could explain why there was no significant difference found among SAISD special education teacher groups with regard to the perception of educative activities and importance. Arends (1983) found that beginner teachers were given great latitude to design their own learning, were able to choose experiences that matched their needs, and were primarily responsible for his or her own learning. As previously stated in the review of the literature, Arends suggested that teacher learning should be viewed as a careful balance of promoting and guiding teacher participation with their own learning. Regardless of this deficit in research, Arends (1983) found that beginner teachers expected to engage in ongoing professional learning until they become competent professional teachers.

In a more recent study, Flores (2001) found that new teachers felt overwhelmed by the duties they were expected to perform at school and felt more support was needed. She felt that there was a need for learning opportunities that allowed teachers to reflect on their perspectives on teaching, learning, and what it really meant to be a teacher. The issues regarding deficits in teacher preparation noted in early research continue to be the same in more recent studies. These issues included the following similarities: (a) no attempt to categorize the kinds of training selected by teachers, (b) no attempt to categorize required trainings, (c) limited research regarding the specifics of dissatisfaction and disillusionment reported by teachers, and (d) limited studies regarding the characteristics of teachers that might account for continued learning (Arends, 1983; Flores, 2001). In a conversation with the SAISD Director of Professional Learning, Dr. Jody Youngblood-Westbrook (personal communication, August 26, 2008),

she stated that national and state professional learning organizations continue to take a supportive role and not a leading role in the types of professional learning opportunities districts and other education agencies chose to use.

In contrast to novice teachers, expert teachers prefer to select their own professional learning opportunities. The SAISD Department of Professional Learning and the Department of Curriculum and Development need to actively research, develop, and promote educative activities that effectively move those teachers who are in the novice stage toward excellence, as well as provide motivating professional learning opportunities to experienced teachers. A true expert knows what to do and why he or she does it. A clear mission that affords all SAISD special education teachers with access to information or opportunities to discover those teaching skills and practices that are most important or effective should be an active component of the professional learning culture of the SAISD. This effort should be approached with purpose and should not be left to random endeavors.

Adult learning theory and practices should be incorporated when developing professional learning opportunities, and when reviewing organizational practices. Involving teachers in the creation and implementation stages of professional learning planning sessions were found to improve teacher motivation, and, therefore, teacher learning. The application of adult learning and teaching theories has been found to impact organizational performance, culture and climate. In addition, it is through the creation of an entire learning environment that invites change, promotes growth, and builds human capacity, that the ultimate goal of high student performance can be

reached. Teachers cannot begin to identify the importance of educative activities without knowing the "what," "why," and "how" of what needs to be learned and taught.

Lastly, partnerships with institutions of higher learning with teacher preparation programs and school districts should be actively encouraged and pursued. Colleges and universities have a great deal of knowledge and expertise in developing research studies and proposals. Large scale research comprised of similar teacher samplings and effective research designs/methodology are needed, and can be accomplished through these types of partnerships. With higher stakes in student achievement and teacher accountability brought to the forefront by national and state legislative acts, more research is needed to determine those training opportunities and educative activities that are clearly seen as most effective in developing teaching expertise, and therefore, are clearly seen as important by SAISD special education teachers. This is a tremendous challenge for all stakeholders.

Comfort Measure

No statistical significance differences were found for the Comfort Measure by teaching level or by years of experience. Since there was no statistical significant difference by teaching level or by years of teaching experience for SAISD special education teachers and perceived comfort concerning educative activities to further develop their teaching skills, the null hypotheses were held tenable. More research is needed to definitively support whether there are educative activities perceived as comfortable by special education teachers.

With little information regarding research-based educative activities and comfort, teachers may have to look at research that focuses on motivation and emotive connections as they consider educative activities in terms of comfort. The review of the literature does include information regarding preference differences between novice and expert teachers. Novice teachers found formal learning opportunities as more supportive of their learning process, whereas expert teachers were found to not rely on the application of a knowledge base to solve problems. Expert teachers constructed and reconstructed professional knowledge using many perspectives to address problems (Poulson et al., 2001). In addition, Arends (1983) found novice teachers to prefer learning experiences that were more individualized in nature, very practical, and that offered more than one trainer. In contrast, Benner (1984) and Poulson et al. (2001) found that experts moved away from being an observer to being an active participant, thereby, selecting learning opportunities that are more performance-based in nature.

With regard to the Comfort Measure, SAISD Department of Professional Learning professionals could consider reviewing its partnerships with universities and colleges to ensure that the teacher preparation programs offer learning opportunities that include field experiences that allow perspective teachers to integrate acquired information and become comfortable with the implementation of learned strategies (Brownell et al., 2005). In addition, these learning experiences should offer opportunities for teacher candidates to learn how to respond to diverse students and instructional contexts in controlled learning environments (Little & Robinson, 1997).

When considering the area of Comfort, the review of the literature does include findings from emotive and neuroscience studies that caution professionals not to overlook adult emotions when developing learning opportunities. Many educational programs have been unceremoniously discarded by teachers because they never felt the programs directly led to improved student performance, and they never developed a positive connection or a positive level of comfort with the use of program components. In addition, professional learning opportunities must include what is known about adult learning and motivation. Teachers were found to be more motivated to learn if they have input in the creation and implementation phases of planned professional learning opportunities.

Frequency Measure

No statistical significance differences were found for any of the factors for the Frequency Measure by teaching level or by years of experience. Since there was no statistical significant difference by teaching levels or by years of teaching experience for SAISD special education teachers and perceived frequency concerning educative activities to further develop their teaching skills, the null hypotheses were held tenable. More research is needed to definitively support whether there are educative activities perceived as frequently used by special education teachers.

With little information in the study of educative activities and frequency, teachers may have to look at studies that include promising practices as they consider educative activities in this area. In the review of the literature, it was found that novice and expert teachers expect to engage in professional learning opportunities throughout

their careers. Novice teacher candidates enter the teaching profession with an understanding that they will participate in professional learning opportunities until they become competent teachers (Arends, 1983), whereas expert teachers feel a responsibility to learn so they can continue to contribute information to colleagues and search for the latest information in their profession (Daly, 1999).

In addition, it was found that professional teaching organizations continue to allow their membership to choose their learning experiences to a significant degree regardless of their teaching assignment, level of expertise, or years of experience. However, novices do not have a clear understanding of their learning processes and focus on accumulating information, whereas experts have a good understanding of their learning processes and know how they learn best (Daly, 1999). Arends (1983) recommended that professional organizations, school districts, and institutions of higher learning maintain a balance between choice and professional guidance. More research is needed to ascertain what information, practices, and knowledge are necessary to develop teacher expertise and to also include educative activities that will motivate teachers to want to engage actively and frequently in required learning opportunities as well as self-directed learning opportunities.

The SAISD would benefit from the findings of comparative studies across similar groups and research designs that focus on those educative activities that promote the development of high quality teachers and those program components needed to develop high quality learning experiences. Findings from these types of studies could help inform teachers of practices that show instructional promise and, therefore, should

be used on a frequent basis to improve knowledge and skills. Research-based studies could provide reasons for the frequent use of certain educative activities by special education teachers over other types of activities.

Implications

Thompson (2002) stated in his research that a study resulting in no statistical significance differences can have practical significance with regard to the importance of its findings. Identified implications were based upon research included in the review of the literature, as well as results from this survey study. Exploratory in nature, this study calls for more research in the area of educative activities used to further develop the teaching skills of SAISD special education teachers.

Importance Measure

While no statistical significant differences were found for the Importance Measure in this study, findings included in the review of the literature may lend support for this result and may have implications for more research in this area. While researchers have substantiated that professionals do engage in educative activities to further develop their skills (Cervero & Dimmick, 1987; Houle, 1980), the identification of those educative activities required to develop expertise in the area of teaching could not be clearly found in a review of the literature. Researchers have identified those educative activities used by teachers in their practice, but there was little research to guide teachers or professional organizations in their selection of educative activities that would have a definitive impact on the development of teaching skills or improved student outcomes. Borko's (2004) comprehensive work that studied the components of

effective professional learning programs has provided research-based findings with regard to practices that can impact teacher learning in significant ways; however, she stated that there were few studies of similar groups with similar research designs to make definitive recommendations. With few studies that addressed the issue of educative activities and importance, there is a need for more research in this area.

Findings for the Importance Measure also have implications for HRD and other department professionals. With few comprehensive studies to guide teachers and administrators in the selection of effective training practices and educative activities that best enhance teacher learning, professionals should consider approaching the interview process and current practices with careful consideration. The interview process should include ways to probe candidates for their outlook on how they plan to develop and improve their teaching skills. Candidates could be asked to discuss those educative activities that they felt were most important with regard to the development of teaching skills, how they stay abreast of their content area or field, and current research on how best to teach and learn. Interview questions such as these can lead to insights into the candidate's skill in content, field of study, and pedagogy (Danielson, 2009). HRD professionals could consider the creation of structured interview questions linked to job-related qualities of effective teachers and rubrics associated with each interview question.

In addition to creating an interview process that could provide the SAISD with actual insight into the professional learning expectations and needs of teacher candidates and new-hires, HRD professionals could consider establishing practices that would

routinely involve expert teachers in the interview process. This process could promote a sense of acceptance for new-hires and challenge teachers on interview panels to think deeply about the qualities found in highly effective teachers, as well as the characteristics of highly effective learning experiences for teachers (Danielson, 2009).

Comfort Measure

While no statistical significant differences were found for the Comfort Measure in this study, findings included in the review of the literature may lend support for this result and may have implications for more research. Novice teachers felt more comfortable using those educative activities that were group instruction-based in nature and offered training experiences presented by experts, whereas expert teachers preferred more performance-based activities or problem-solving activities. Onafowora (2004) indicated that teachers learned best by observing good practices, talking about teaching with each other and with expert practitioners, learning to observe students carefully and meaningfully, experimenting and assessing the effectiveness of new teaching strategies, and being given the opportunity to learn from and reflect upon their mistakes. However, there were few studies that addressed the issue of educative activities and comfort, and therefore, there is a need for more research with regard to comfort.

In addition, findings for the Comfort Measure could have implications for HRD professionals. The interview process could include opportunities for novice and experienced teacher candidates to describe preferred professional learning opportunities. Many times the interview process is more preoccupied with knowing the topic names of recently attended professional learning sessions and does not ask for information

regarding the types of educative activities used by interviewees to develop teaching skills and reasons for their selection. In addition, the interview process for candidates with years of teaching experience could include opportunities for the interviewee to discuss what rewards and assistance could be considered by the SAISD to promote active participation in professional learning opportunities. Lastly, interviewees could be asked what types of professional learning opportunities they feel are needed and which they feel most comfortable using to improve their teaching skills.

Frequency Measure

While no statistical significant differences were found for the Frequency Measure in this study, findings included in the review of the literature may lend support for this result and may have implications for more research. While the review of the literature did not include much research with regard to frequency, the review of the literature indicated that professional learning opportunities that focused on subject matter helped teachers develop a solid content area understanding. As teachers became more confident in their content area, they frequently sought experiences that allowed for problem-solving, experimentation, and greater awareness into student learning processes (Schifter & Fosnot, 1993). A need for more research does exist to address the issue of educative activities and frequency.

Findings with regard to the Frequency Measure may have implications for professionals in the SAISD Department Curriculum and Instruction. This Department may consider reviewing current learning opportunities and ascertain if they are research-based and found to be the most effective practices with regard to developing teacher

competency levels. There may be a need to offer a wider variety of professional learning opportunities that include research-based educative activities resulting in the easy identification of those types of educative activities that should be frequently used when developing teaching skills. In addition, the Department should reflect on the consideration of varied adult learning theories and practices when planning professional learning opportunities for teachers, should consider input from teachers when developing training sessions, and select educative activities based on the content, nature, and context of the learning experience.

As part of the interview process, HRD professionals could consider gathering data regarding the types of educative activities frequently used by novice and experienced teacher candidates. In addition, this type of information-seeking process could offer insight into pre-service teacher learning opportunities offered by universities and colleges and determine if these opportunities have a true connection with current instructional expectations, professional learning opportunities, and actual student needs of the school district. In addition, information obtained from candidates with experience could lead to changes in those educative activities currently offered by the school district.

Recommendations

The analysis and examination of the data collected in this study led to a number of conclusions by the researcher. The recommendations presented were based on the research and the obtained results.

Recommendations for SAISD

1. With no significant differences found in the area of Importance, the Department of Special Education Services and the Department of Curriculum and Instruction in the SAISD should examine their current selection of educative activities used in training practices to further develop teaching skills. Educative activities used by trainers and selected by special education teachers should be research-based and have a basis for developing high-competency teaching levels. A greater variety of educative activities than those currently used may need to be considered. A review of the literature found that teachers must know "what," "why, and "how" before they can learn. Department professionals must apply principles of adult learning theory and motivation whenever planning professional learning opportunities.

2. With no significant differences found in the areas of Comfort and Frequency, the Department of Special Education Services and the Department of Curriculum and Instruction in the SAISD should examine their current selection of educative activities used in training practices to further develop teaching skills. Are those educative activities identified as comfortable or frequently used by teachers? Are these identified educative activities research-based and do they have a solid basis for developing high-competency teaching levels? In addition, adult learning principles that include teacher motivation should be included whenever planning professional learning opportunities. Principles including critical reflection and change theory should continually be reviewed to ensure that the organizational culture and climate promote a positive learning environment for teachers and students.

3. With regard to the review of literature and special education, there is a need to examine the teacher preparation experiences and training expectations for special education teachers in SAISD. Researchers in the field of special education have found that those teacher candidates who participated in teacher preparation programs that prepared these candidates in the area of content area development as well as special education performed better than those who did not. In addition, teachers who attended alternative certification programs may not have a strong foundation in learning theory. There may be a need to provide learning opportunities for those teacher-hires who do not have a strong foundation in content area development or pedagogy.

4. HRD professionals for the SAISD may consider the need to develop a research-based structured interview process that offers insight into a candidate's self-efficacy level, motivation, pedagogical belief systems, and preferred educative activities with regard to teaching skill development.

5. Caution is needed in interpreting the results of this study recognizing that the results can be generalized only to SAISD special education teachers.

Recommendations for Further Study

1. Large scale research comprised of similar teacher samplings and research design to add to existing studies regarding the selection of educative activities by special education teachers to further develop teaching skills.

2. Large scale research comprised of similar teacher samplings and research design to explore special education teacher perceptions regarding adult learning and the

role of human resource development and other district department professionals in order to add to existing research when designing professional learning opportunities.

3. Review of the questionnaire instrument since significant differences were not found. Items listed should include activities that are distinctly different from each other. In addition, educative activities may need to be added or subtracted depending on new findings from research.

The field of special education is relatively young and does not include a large body of work. With little research in the area of special education, this study added to existing research in the field of special education and provided a basis for more research that examines the perceptions of SAISD special education teachers in their selection of educative activities to improve teaching performance. While no statistical significant differences were found in this survey study, implications and recommendations for SAISD professionals were listed for future consideration, exploration, and research as they work to improve the performance, knowledge, and skill levels of their special education teacher workforce.

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APPENDIX A

INFORMATION SHEET AND QUESTIONNAIRE INSTRUMENT

INFORMATION SHEET

A Comparative Analysis of the Importance, Comfort, and Frequency Levels of Educative Activities Used to Further Develop Teaching Skills as Reported by Special Education Teachers in San Antonio Independent School District

I am writing to you to request your participation in a study that will investigate the types of educative activities used by certified special education teachers to further develop teaching skills. You are one out of approximately two hundred and ten special education teachers asked to participate in this study. Seventy special education teachers assigned to elementary, middle school and high schools were selected. The information gained by the analysis of the responses may provide the San Antonio Independent School District with additional insights when developing professional education opportunities for teachers.

If you agree to be in this study, you will be asked to respond to the attached questionnaire which should take no more than 15 minutes to complete. Participation is voluntary and there is no penalty or loss of benefits should you decide to withdraw from the study or decline participation.

The study is anonymous. No individual data will be revealed; only group results will be reported. Research records will be stored securely and only the principal investigator will have access to the records. You may also refuse to answer any question that is uncomfortable to answer and you are free to withdraw from the study at any time. The questionnaire should create no more than minimal risk to participants and there is a low estimate of risk to the study's subjects.. The questionnaire used in the study may generate a level of discomfort due to the length of the survey, but ranked numerical responses limit the questionnaire's length. If you have any questions or need additional information, you may contact me or my committee chairperson at the addresses listed below.

This research study has been reviewed and approved by the Institutional Review Board-Human Subjects Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, the Institutional Review Board may be contacted through Ms. Angelia M. Raines, Director of Research Compliance, Office of the Vice President for Research at (979) 458-4067, araines@vprmail.tamu.edu.

By returning the enclosed questionnaire in the stamped self-addressed envelope, you are voluntarily agreeing to participate in the study. Please retain a copy of this information sheet for your records. Please return the questionnaire to me, principal investigator, no later than October 20, 2006.

Theresa Arocha-Gill
Principal Investigator
Phone: (210) 225-2406
Email: tarocha-gil@saisd.net

Kenneth Paprock, Ph.D.
Professor, Committee Chair, EAHRD
Phone: (979) 845-5488
Email: kpaprock@tamu.edu
Texas A&M University, USA

Self-Assessment Questionnaire: The Use of Educative Activities to Further Develop Teaching Skills as Reported by Special Education Teachers

Directions: **This self-assessment questionnaire includes a list of educative activities that teachers can engage in to develop their teaching skills. Please read each educative activity and select a rating for each of the three columns listed.**

1. **For Column A, please indicate how important you consider each educative activity to be with regard to developing teaching skills by circling the appropriate number.**
2. **For Column B, please indicate how comfortable you would feel when using each educative activity by circling the appropriate number.**
3. **For Column C, please indicate how frequently you use each educative activity when developing your teaching skills by circling the appropriate number.**

Educative Activity	Column A				Column B				Column C			
	How Important is Each Educative Activity With Regard to Developing Teaching Skills?				How Comfortable Would You Feel Using Each Educative Activity to Develop Your Teaching Skills?				How Frequently Do You Use Each Educative Activity As A Means to Develop Your Teaching Skills?			
	Not Import	Low Import	Mod. Import	High Import	No Comfort	Low Comfort	Mod. Comfort	High Comfort	Rarely Used	Sometimes Used	Often Used	Frequently Used
1. Attend a conference with a focus on content area skill development.	1	2	3	4	1	2	3	4	1	2	3	4
2. Participate in curriculum development work at district or campus level.	1	2	3	4	1	2	3	4	1	2	3	4
3. Field test instructional materials.	1	2	3	4	1	2	3	4	1	2	3	4
4. Observe other classroom teachers in other school districts.	1	2	3	4	1	2	3	4	1	2	3	4
5. Engage in an independent study that develops content area skills.	1	2	3	4	1	2	3	4	1	2	3	4
6. Attend district training initiatives that introduce a new skill and include demonstration activities.	1	2	3	4	1	2	3	4	1	2	3	4
7. Observe other classroom teachers in the same district and program assignment.	1	2	3	4	1	2	3	4	1	2	3	4
8. Attend summer courses at a college or university.	1	2	3	4	1	2	3	4	1	2	3	4
9. Attend district sponsored workshops after the school day.	1	2	3	4	1	2	3	4	1	2	3	4
10. Participate in peer coaching activities.	1	2	3	4	1	2	3	4	1	2	3	4

Educative Activity	Column A				Column B				Column C			
	How Important is the Educative Activity With Regard to Developing Teaching Skills?				How Comfortable Would You Feel Using the Educative Activity to Develop Your Teaching Skills?				How Often Do You Use Each Educative Activity As A Means to Develop Your Teaching Skills?			
	Not Import	Low Import	Mod. Import	High Import	No Comfort	Low Comfort	Mod. Comfort	High Comfort	Rarely Used	Sometimes Used	Often Used	Frequently Used
11. Make a presentation to peers or parents.	1	2	3	4	1	2	3	4	1	2	3	4
12. Receive individualized assistance from an instructional specialist.	1	2	3	4	1	2	3	4	1	2	3	4
13. Receive individualized assistance from a campus administrator.	1	2	3	4	1	2	3	4	1	2	3	4
14. Complete on-line training modules with immediate feedback/results provided.	1	2	3	4	1	2	3	4	1	2	3	4
15. Participate in a book study group.	1	2	3	4	1	2	3	4	1	2	3	4
16. Take a higher education course or district developed course during the school year.	1	2	3	4	1	2	3	4	1	2	3	4
17. Collaborate and plan with a team of teachers from a specific content area.	1	2	3	4	1	2	3	4	1	2	3	4
18. Co-teach a lesson with an instructional specialist.	1	2	3	4	1	2	3	4	1	2	3	4
19. Prepare a teaching aid (e.g. learning center, student study guides).	1	2	3	4	1	2	3	4	1	2	3	4
20. Collaborate with a mentor teacher.	1	2	3	4	1	2	3	4	1	2	3	4
21. Demonstrate a teaching strategy to peers.	1	2	3	4	1	2	3	4	1	2	3	4
22. Implement a teaching strategy and review results with a group of content area teachers.	1	2	3	4	1	2	3	4	1	2	3	4
23. Assume responsibilities associated with the role of a mentor teacher.	1	2	3	4	1	2	3	4	1	2	3	4
24. Co-teach with another classroom teacher.	1	2	3	4	1	2	3	4	1	2	3	4
25. Role play new teaching skills with peers.	1	2	3	4	1	2	3	4	1	2	3	4
26. Read a research based article from a professional journal or book.	1	2	3	4	1	2	3	4	1	2	3	4
27. Attend a training session that provides a lecture style presentation.	1	2	3	4	1	2	3	4	1	2	3	4
28. Attend a workshop presented by a regional or national expert.	1	2	3	4	1	2	3	4	1	2	3	4

Educative Activity	Column A				Column B				Column C			
	How Important is the Educative Activity With Regard to Developing Teaching Skills?				How Comfortable Would You Feel Using the Educative Activity to Develop Your Teaching Skills?				How Often Do You Use Each Educative Activity As A Means to Develop Your Teaching Skills?			
	Not Import	Low Import	Mod. Import	High Import	No Comfort	Low Comfort	Mod. Comfort	High Comfort	Rarely Used	Sometimes Used	Often Used	Frequently Used
29. Video tape teacher presentations and discuss teaching techniques among peers.	1	2	3	4	1	2	3	4	1	2	3	4
30. Attend a trainer-of-trainers style workshop.	1	2	3	4	1	2	3	4	1	2	3	4
31. Participate in monthly teacher support group meetings in order to learn new teaching strategies and discuss implemented teaching strategies.	1	2	3	4	1	2	3	4	1	2	3	4
32. Participate in a workshop that includes web based activities and a lecture style presentation.	1	2	3	4	1	2	3	4	1	2	3	4

Directions: Please complete all of the following demographic information.

1. Age (years): _____

2. Teaching experience (total number of full teaching years)**:**

_____

3. Gender (circle one)**:**

Male **Female**

4. Highest Level of Education (circle one)**:**

Bachelor's Degree **Master's Degree**
Some Post Graduate Work **Post Graduate Degree**

5. Campus Assignment (circle one)**:**

ES **Academy** **MS** **HS**

6. Program Assignment (circle one)**:**

GEC (mainstream only) **GEC(including resource support)**

BAC **LS**
TLC **PPCD**

7. If you are certified in a content area, please identify the content area(s) and level.
(Example: composite social studies; 9-12 grades)

_____

Thank you for your time and insights.

Please return this questionnaire to Theresa Arocha-Gill.

APPENDIX B

COMMUNALITIES TABLES

Communalities Tables

Table B1. Communalities for Importance Measure: Factor Analysis Using Criterion of Eigenvalue Over 1

Communalities

	Initial	Extraction
q01_i	1.000	.324
q02_i	1.000	.374
q03_i	1.000	.328
q05_i	1.000	.300
q06_i	1.000	.261
q07_i	1.000	.283
q08_i	1.000	.450
q09_i	1.000	.400
q10_i	1.000	.554
q12_i	1.000	.484
q13_i	1.000	.457
q15_i	1.000	.386
q16_i	1.000	.360
q18_i	1.000	.587
q20_i	1.000	.557
q22_i	1.000	.404
q23_i	1.000	.372
q24_i	1.000	.502
q25_i	1.000	.536
q26_i	1.000	.384
q27_i	1.000	.362
q28_i	1.000	.402
q29_i	1.000	.408
q30_i	1.000	.484
q32_i	1.000	.355

Table B2. Communalities for Comfort Measure: Factor Analysis Using Criterion of Eigenvalue Over 1

Communalities

	Initial	Extraction
q01_c	1.000	.364
q02_c	1.000	.419
q05_c	1.000	.442
q06_c	1.000	.387
q08_c	1.000	.561
q09_c	1.000	.473
q10_c	1.000	.598
q11_c	1.000	.492
q12_c	1.000	.576
q13_c	1.000	.452
q14_c	1.000	.589
q15_c	1.000	.544
q16_c	1.000	.439
q18_c	1.000	.628
q20_c	1.000	.505
q21_c	1.000	.422
q22_c	1.000	.522
q23_c	1.000	.383
q24_c	1.000	.599
q25_c	1.000	.530
q26_c	1.000	.392
q27_c	1.000	.552
q28_c	1.000	.554
q29_c	1.000	.421
q30_c	1.000	.486
q31_c	1.000	.317

Table B3. Communalities for Frequency Measure: Factor Analysis Using Criterion of Eigenvalue Over 1

Communalities

	Initial	Extraction
q01_f	1.000	.417
q02_f	1.000	.365
q06_f	1.000	.568
q08_f	1.000	.408
q09_f	1.000	.729
q11_f	1.000	.512
q12_f	1.000	.451
q13_f	1.000	.458
q14_f	1.000	.467
q15_f	1.000	.453
q16_f	1.000	.406
q17_f	1.000	.413
q18_f	1.000	.626
q19_f	1.000	.392
q20_f	1.000	.302
q21_f	1.000	.536
q22_f	1.000	.600
q23_f	1.000	.392
q24_f	1.000	.506
q25_f	1.000	.514
q26_f	1.000	.325
q27_f	1.000	.323
q29_f	1.000	.503
q30_f	1.000	.512
q31_f	1.000	.524
q32_f	1.000	.592

APPENDIX C

SCREE PLOT RESULTS FOR IMPORTANCE, COMFORT, AND FREQUENCY MEASURES

Figure C1. Scree Plot for Importance Measure

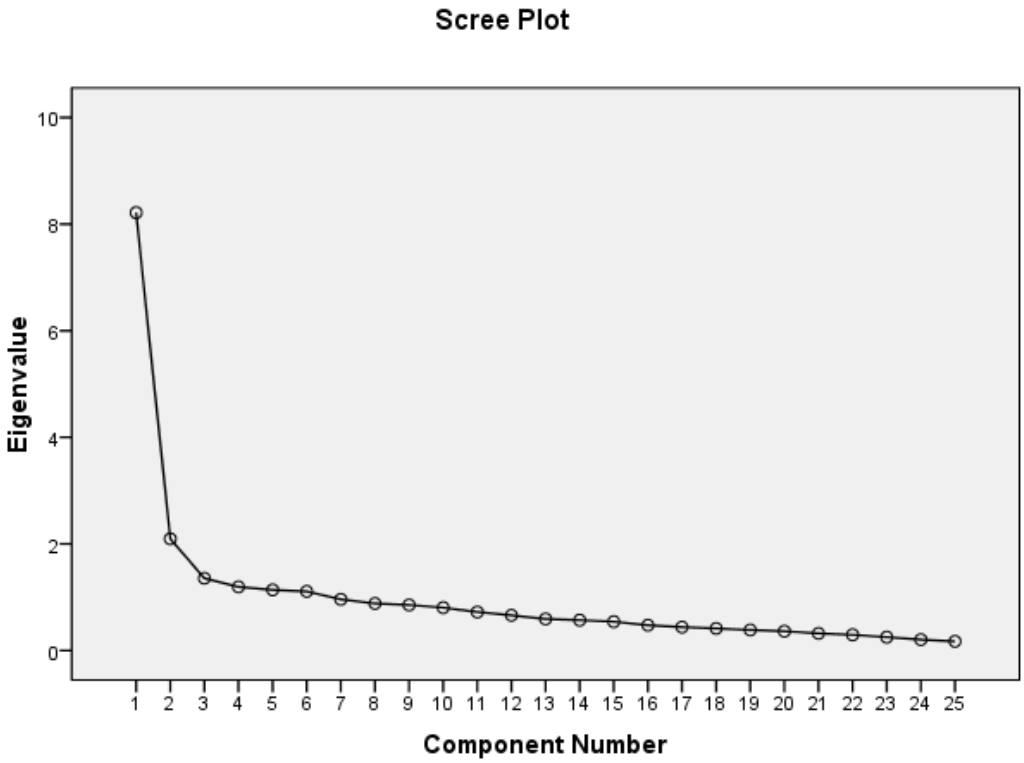


Figure C2. Scree Plot for Comfort Measure

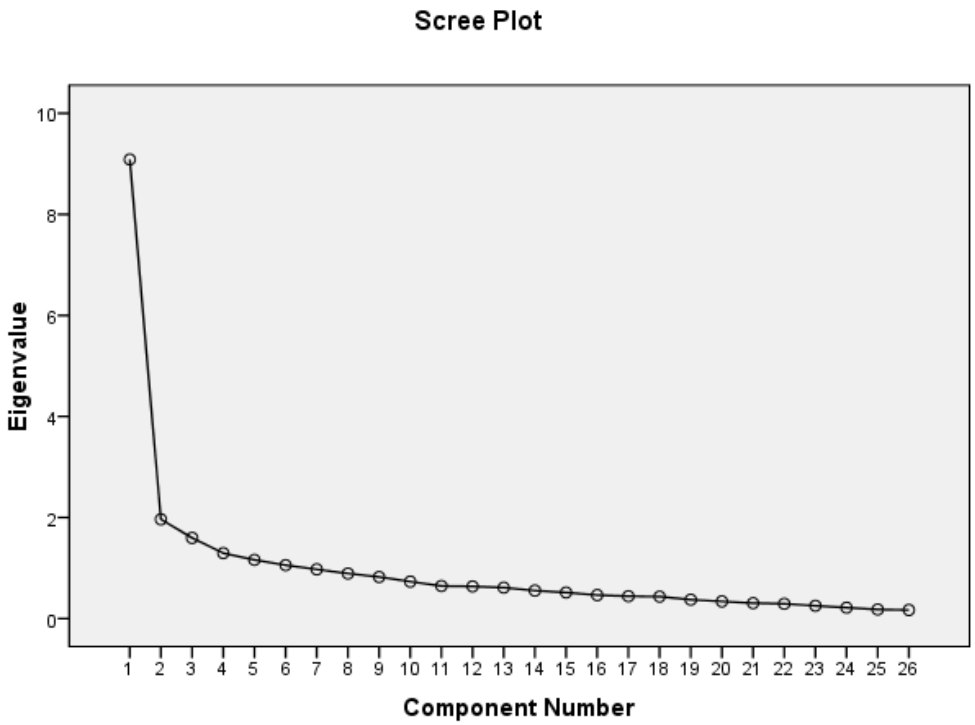
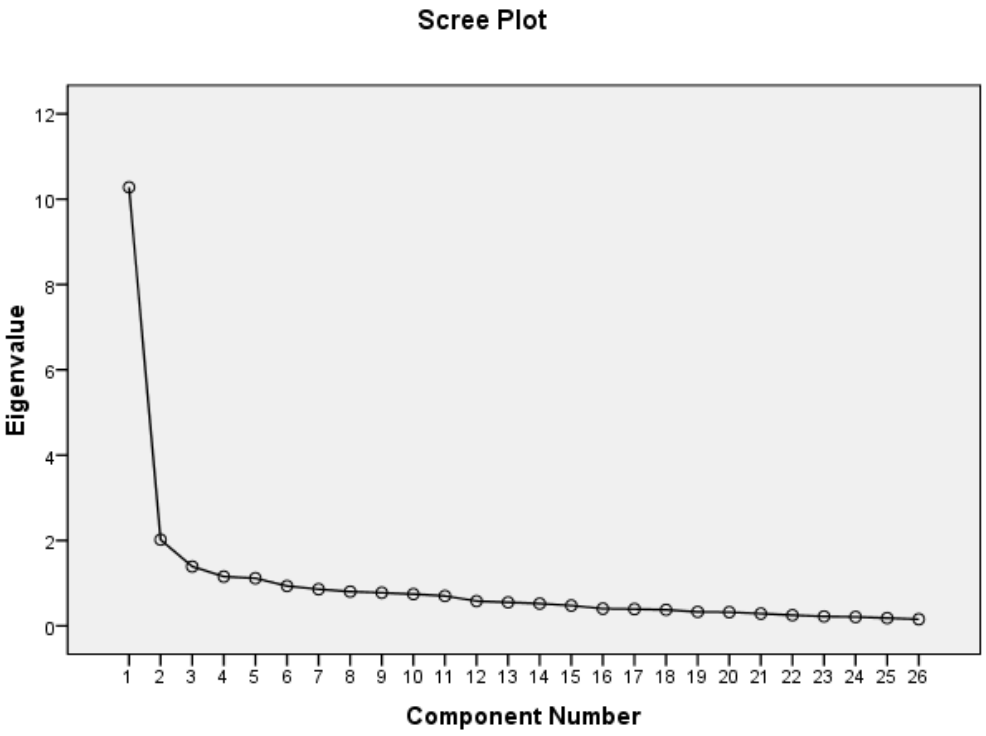


Figure C3. Scree Plot for Frequency Measure



APPENDIX D

MANOVA TABLES

Importance Measure MANOVA Results: Teaching Level

Between-Subjects Factors

		Value Label	N
Campus Assignment	1	Elementary School	54
	3	Middle School	54
	4	High School	54

Descriptive Statistics

	Campus Assignment	Mean	Std. Deviation	N
factor1_imp	Elementary School	34.6481	6.24396	54
	Middle School	35.2037	8.21728	54
	High School	36.4630	6.56668	54
	Total	35.4383	7.05959	162
factor2_imp	Elementary School	32.1296	4.57659	54
	Middle School	32.9074	6.03220	54
	High School	33.8704	5.17631	54
	Total	32.9691	5.31074	162

Multivariate Tests[d]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.976	3279.020b	2.000	158.000	.000	.976
	Wilks' Lambda	.024	3279.020b	2.000	158.000	.000	.976
	Hotelling's Trace	41.507	3279.020b	2.000	158.000	.000	.976
	Roy's Largest Root	41.507	3279.020b	2.000	158.000	.000	.976
level	Pillai's Trace	.019	.775	4.000	318.000	.542	.010
	Wilks' Lambda	.981	.774b	4.000	316.000	.543	.010
	Hotelling's Trace	.020	772	4.000	314.000	.544	.010
	Roy's Largest Root	.019	1.527c	2.000	159.000	.220	.019

Multivariate Tests[d]

Effect		Noncent. Parameter	Observed Power[a]
Intercept	Pillai's Trace	6558.039	1.000
	Wilks' Lambda	6558.039	1.000
	Hotelling's Trace	6558.039	1.000
	Roy's Largest Root	6558.039	1.000
level	Pillai's Trace	3.101	.248
	Wilks' Lambda	3.096	.248
	Hotelling's Trace	3.090	.247
	Roy's Largest Root	3.054	.321

a. Computed using alpha = .05
b. Exact statistic
c. The statistic is an upper bound of F that yields a lower bound on the significance level.
d. Design: Intercept+level

Test of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	factor1_imp	93.383[b]	2	46.691	.936	.394
	factor2_imp	82.123[c]	2	41.062	1.464	.234
Intercept	factor1_imp	203451.117	1	203451.117	4079.028	.000
	factor2_imp	176088.154	1	176088.154	6279.381	.000
exp_cat	factor1_imp	93.383	2	46.691	.936	.394
	factor2_imp	82.123	2	41.062	1.464	.234
Error	factor1_imp	7930.500	159	49.877		
	factor2_imp	4458.722	159	28.042		
Total	factor1_imp	211475.000	162			
	factor2_imp	180629.000	162			
Corrected Total	factor1_imp	8023.883	161			
	factor2_imp	4540.846	161			

Test of Between-Subjects Effects

Source	Dependent Variable	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Corrected Model	factor1_imp	.012	1.872	.210
	factor2_imp	.018	2.929	.309
Intercept	factor1_imp	.962	4079.028	1.000
	factor2_imp	.975	6279.381	1.000
level	factor1_imp	.012	1.872	.210
	factor2_imp	.018	2.929	.309
Error	factor1_imp			
	factor2_imp			
Total	factor1_imp			
	factor2_imp			
Corrected Total	factor1_imp			
	factor2_imp			

a. Computed using alpha = .05
b. R Squared = .012 (Adjusted R Squared = -.001)
c. R Squared = .018 (Adjusted R Squared = .006)

Estimated Marginal Means

Campus Assignment

Dependent Variable	Campus Assignment	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
factor1_imp	Elementary School	34.648	.961	32.750	36.546
	Middle School	35.204	.961	33.306	37.102
	High School	36.463	.961	34.565	38.361
factor2_imp	Elementary School	32.130	.721	30.706	33.553
	Middle School	32.907	.721	31.484	34.331
	High School	33.870	.721	32.447	35.294

Post Hoc Tests

Campus Assignment

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Campus Assignment	(J) Campus Assignment	Mean Difference (I-J)	Std. Error	Sig.
factor1_imp	Elementary School	Middle School	-.5556	1.35916	.912
		High School	-1.8148	1.35916	.378
	Middle School	Elementary School	.5556	1.35916	.912
		High School	-1.2593	1.35916	.624
	High School	Elementary School	1.8148	1.35916	.378
		Middle School	1.2593	1.35916	.624
factor2_imp	Elementary School	Middle School	-.7778	1.01912	.726
		High School	-1.7407	1.01912	.205
	Middle School	Elementary School	.7778	1.01912	.726
		High School	-.9630	1.01912	.613
	High School	Elementary School	1.7407	1.01912	.205
		Middle School	.9630	1.01912	.613

Based on observed means.

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Campus Assignment	(J) Campus Assignment	95 % Confidence Interval	
			Lower Bound	Upper Bound
factor1_imp	Elementary School	Middle School	-3.7711	2.6600
		High School	-5.0304	1.4008
	Middle School	Elementary School	-2.6600	3.7711
		High School	-4.4748	1.9563
	High School	Elementary School	-1.4008	5.0304
		Middle School	-1.9563	4.4748
factor2_imp	Elementary School	Middle School	-3.1889	1.6333
		High School	-4.1518	.6704
	Middle School	Elementary School	-1.6333	3.1889
		High School	-3.3741	1.4481
	High School	Elementary School	-.6704	4.1518
		Middle School	-1.4481	3.3741

Based on observed means.

Homogeneous Subsets

factor1_imp

Tukey HSD [a,b,c]

Campus Assignment	N	Subset 1
Elementary School	54	34.6481
Middle School	54	35.2037
High School	54	36.4630
Sig.		.378

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 49.877.

a. Uses Harmonic Mean Sample Size = 54.000.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.
c. Alpha = .05.

factor2-imp

Tukey HSD

Campus Assignment	N	Subset 1
Elementary School	54	32.1296
Middle School	54	32.9074
High School	54	33.8704
Sig.		.205

Means for groups in homogeneous subsets are displayed.
Based on Type III Sum of Squares
The error term is Mean Square(Error) = 28.042.

d. Uses Harmonic Mean Sample Size = 54.000.
e. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.
f. Alpha = .05.

Importance Measure MANOVA Results: Years of Teaching Experience

Between-Subjects Factors

		Value Label	N
exp_cat	1.00	0-5 years	52
	2.00	6-20 years	58
	3.00	20+	52

Descriptive Statistics

exp_cat		Mean	Std. Deviation	N
factor1_imp	0-5 years	35.3654	6.79974	52
	6-20 years	35.1034	7.10495	58
	20+ years	35.8846	7.37152	52
	Total	35.4383	7.05959	162
factor2_imp	0-5 years	33.5385	5.28951	52
	6-20 years	33.1207	5.35438	58
	20+ years	32.2308	5.30119	52
	Total	32.9691	5.31074	162

Multivariate Tests[d]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.976	3224.798b	2.000	158.000	.000	.976
	Wilks' Lambda	.024	3224.798b	2.000	158.000	.000	.976
	Hotelling's Trace	40.820	3224.798b	2.000	158.000	.000	.976
	Roy's Largest Root	40.820	3224.798b	2.000	158.000	.000	.976
level	Pillai's Trace	.029	1.155	4.000	318.000	.331	.014
	Wilks' Lambda	.971	1.156b	4.000	316.000	.330	.014
	Hotelling's Trace	.029	1.156	4.000	314.000	.330	.015
	Roy's Largest Root	.029	2.303c	2.000	159.000	.103	.028

Multivariate Tests[d]

Effect		Noncent. Parameter	Observed Power[a]
Intercept	Pillai's Trace	6449.597	1.000
	Wilks' Lambda	6449.597	1.000
	Hotelling's Trace	6449.597	1.000
	Roy's Largest Root	6449.597	1.000
	Pillai's Trace	4.621	.362
	Wilks' Lambda	4.623	.362
	Hotelling's Trace	4.625	.363
	Roy's Largest Root	4.605	.462

e. Computed using alpha = .05
f. Exact statistic
g. The statistic is an upper bound of F that yields a lower bound on the significance level.
h. Design: Intercept+exp_cat

Test of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	factor1_imp	17.138b	2	8.569	.170	.844
	factor2_imp	46.537c	2	23.268	.823	.441
Intercept	factor1_imp	203060.386	1	203060.386	4032.425	.000
	factor2_imp	175560.218	1	175560.218	6210.982	.000
exp_cat	factor1_imp	17.138	2	8.569	.170	.844
	factor2_imp	46.537	2	23.268	.823	.441
Error	factor1_imp	8006.745	159	50.357		
	factor2_imp	4494.309	159	28.266		
Total	factor1_imp	211475.000	162			
	factor2_imp	180629.000	162			
Corrected Total	factor1_imp	8023.883	161			
	factor2_imp	4540.846	161			

Test of Between-Subjects Effects

Source	Dependent Variable	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Corrected Model	factor1_imp	.002	.340	.076
	factor2_imp	.010	1.646	.189
Intercept	factor1_imp	.962	4032.425	1.000
	factor2_imp	.975	6210.982	1.000
exp_cat	factor1_imp	.002	.340	.076
	factor2_imp	.010	1.646	.189
Error	factor1_imp			
	factor2_imp			
Total	factor1_imp			
	factor2_imp			
Corrected Total	factor1_imp			
	factor2_imp			

a. Computed using alpha = .05
b. R Squared = .002 (Adjusted R Squared = -.010)
c. R Squared = .010 (Adjusted R Squared = -.002)

Comfort Measure MANVOA Results: Teaching Level

Between-Subjects Factors

		Value Label	N
Campus Assignment	1	Elementary School	48
	3	Middle School	56
	4	High School	53

Descriptive Statistics

Campus Assignment		Mean	Std. Deviation	N
factor1_com	Elementary School	36.1667	7.69452	48
	Middle School	37.8929	9.01046	56
	High School	39.1698	7.39214	53
	Total	37.7962	8.13251	157
factor2_com	Elementary School	18.2292	2.88237	48
	Middle School	17.7321	3.93812	56
	High School	18.5472	3.99310	53
	Total	18.1592	3.66114	157
factor3_com	Elementary School	15.7292	2.35868	48
	Middle School	15.9107	2.83021	56
	High School	16.0000	2.98715	53
	Total	15.8854	2.73620	157

Multivariate Tests[d]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.976	2050.026b	3.000	152.000	.000	.976
	Wilks' Lambda	.024	2050.026b	3.000	152.000	.000	.976
	Hotelling's Trace	40.461	2050.026b	3.000	152.000	.000	.976
	Roy's Largest Root	40.461	2050.026b	3.000	152.000	.000	.976
level	Pillai's Trace	.041	1.077	6.000	306.000	.376	.021
	Wilks' Lambda	.959	1.073b	6.000	304.000	.379	.021
	Hotelling's Trace	.042	1.068	6.000	302.000	.382	.021
	Roy's Largest Root	.032	1.614c	3.000	153.000	.188	.031

Multivariate Tests[d]

Effect		Noncent. Parameter	Observed Power[a]
Intercept	Pillai's Trace	6150.078	1.000
	Wilks' Lambda	6150.078	1.000
	Hotelling's Trace	6150.078	1.000
	Roy's Largest Root	6150.078	1.000
level	Pillai's Trace	6.462	.425
	Wilks' Lambda	6.436	.423
	Hotelling's Trace	6.409	.421
	Roy's Largest Root	4.843	.418

a. Computed using alpha = .05
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Design: Intercept+level

Test of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	factor1_com	227.982b	2	113.991	1.740	.179
	factor2_com	18.426c	2	9.213	.685	.506
	factor3_com	1.904d	2	.952	.126	.882
Intercept	factor1_com	222745.632	1	222745.632	3399.856	.000
	factor2_com	51620.168	1	51620.168	3835.536	.000
	factor3_com	39430.530	1	39430.530	5207.660	.000
level	factor1_com	227.982	2	113.991	1.740	.179
	factor2_com	18.426	2	9.213	.685	.506
	factor3_com	1.904	2	.952	.126	.882
Error	factor1_com	10089.496	154	65.516		
	factor2_com	2072.593	154	13.458		
	factor3_com	1166.033	154	7.572		
Total	factor1_com	234600.000	157			
	factor2_com	53863.000	157			
	factor3_com	40786.000	157			
Corrected Total	factor1_com	10317.478	156			
	factor2_com	2091.019	156			
	factor3_com	1167.936	156			

Test of Between-Subjects Effects

Source	Dependent Variable	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Corrected Model	factor1_com	.002	3.480	.361
	factor2_com	.009	1.369	.164
	factor3_com	.002	.251	.069
Intercept	factor1_com	.957	3399.856	1.000
	factor2_com	.961	3835.536	1.000
	factor3_com	.971	5207.660	1.000
level	factor1_com	.022	3.480	.361
	factor2_com	.009	1.369	.164
	factor3_com	002	.251	.069
Error	factor1_com			
	factor2_com			
	factor3_com			
Total	factor1_com			
	factor2_com			
	factor3_com			
Corrected Total	factor1_com			
	factor2_com			
	factor3_com			

a. Computed using alpha = .05
b. R Squared = .022 (Adjusted R Squared = -.009)
c. R Squared = .009 (Adjusted R Squared = -.004)
d. R Squared = .002 (Adjusted R Squared = -.011)

Comfort Measure MANOVA Results: Years of Teaching Experience

Between-Subjects Factors

		Value Label	N
exp_cat	1.00	0-5 years	55
	2.00	6-20 years	56
	3.00	20+	46

Descriptive Statistics

Campus Assignment		Mean	Std. Deviation	N
factor1_com	0-5 years	37.8000	7.90546	55
	6-20 years	37.3571	8.28455	56
	20+ years	38.3261	8.35877	46
	Total	37.7962	8.13251	157
factor2_com	0-5 years	18.5636	3.60434	55
	6-20 years	17.9286	3.66237	56
	20+ years	17.9565	3.76508	46
	Total	18.1592	3.66114	157
factor3_com	0-5 years	16.5273	2.78790	55
	6-20 years	15.8750	2.63585	56
	20+ years	15.1304	2.65505	46
	Total	15.8854	2.73620	157

Multivariate Tests[d]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.976	2079.056b	3.000	152.000	.000	.976
	Wilks' Lambda	.024	2079.056b	3.000	152.000	.000	.976
	Hotelling's Trace	41.034	2079.056b	3.000	152.000	.000	.976
	Roy's Largest Root	41.037	2079.056b	3.000	152.000	.000	.976
exp_cat	Pillai's Trace	.075	1.975	6.000	306.000	.069	.037
	Wilks' Lambda	.926	1.996b	6.000	304.000	.066	.038
	Hotelling's Trace	.080	2.016	6.000	302.000	.063	.039
	Roy's Largest Root	.077	3.934c	3.000	153.000	.010	.072

Multivariate Tests[d]

Effect		Noncent. Parameter	Observed Power[a]
Intercept	Pillai's Trace	6237.168	1.000
	Wilks' Lambda	6237.168	1.000
	Hotelling's Trace	6237.168	1.000
	Roy's Largest Root	6237.168	1.000
exp_cat	Pillai's Trace	11.851	.721
	Wilks' Lambda	11.975	.726
	Hotelling's Trace	12.096	.732
	Roy's Largest Root	11.803	.823

a. Computed using alpha = .05
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Design: Intercept+exp_cat

Test of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	factor1_com	23.712b	2	11.856	.177	.838
	factor2_com	13.865c	2	6.932	.514	.599
	factor3_com	48.885d	2	24.442	3.364	.037
Intercept	factor1_com	222894.926	1	222894.926	3334.622	.000
	factor2_com	51311.216	1	51311.216	3804.208	.000
	factor3_com	39104.066	1	39104.066	5381.366	.000
exp_cat	factor1_com	23.712	2	11.856	.177	.838
	factor2_com	13.865	2	6.932	.514	.599
	factor3_com	48.885	2	24.442	3.364	.037
Error	factor1_com	10293.766	154	66.843		
	factor2_com	2077.155	154	13.488		
	factor3_com	1119.051	154	7.267		
Total	factor1_com	234600.000	157			
	factor2_com	53863.000	157			
	factor3_com	40786.000	157			
Corrected Total	factor1_com	10317.478	156			
	factor2_com	2091.019	156			
	factor3_com	1167.936	156			

Test of Between-Subjects Effects

Source	Dependent Variable	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Corrected Model	factor1_com	.002	.355	.077
	factor2_com	.007	1.028	.133
	factor3_com	.042	6.727	.628
Intercept	factor1_com	.956	3334.622	1.000
	factor2_com	.961	3804.208	1.000
	factor3_com	.972	5381.366	1.000
exp_cat	factor1_com	.002	.355	.077
	factor2_com	.007	1.028	.133
	factor3_com	042	6.727	.628
Error	factor1_com			
	factor2_com			
	factor3_com			
Total	factor1_com			
	factor2_com			
	factor3_com			
Corrected Total	factor1_com			
	factor2_com			
	factor3_com			

a. Computed using alpha = .05
b. R Squared = .002 (Adjusted R Squared = -.011)
c. R Squared = .007 (Adjusted R Squared = -.006)
d. R Squared = .042 (Adjusted R Squared = -.029)

Frequency Measure MANOVA Results: Teaching Level

Between-Subjects Factors

		Value Label	N
Campus Assignment	1	Elementary School	54
	3	Middle School	51
	4	High School	52

Descriptive Statistics

	Campus Assignment	Mean	Std. Deviation	N
factor1_freq	Elementary School	43.4074	12.56758	54
	Middle School	48.3922	16.12833	51
	High School	47.4038	15.56298	52
	Total	46.3503	14.86429	157
factor2_freq	Elementary School	11.3333	2.97791	54
	Middle School	10.8431	2.80979	51
	High School	10.5769	3.57741	52
	Total	10.9236	3.13488	157

Multivariate Tests[d]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.937	1144.346b	2.000	153.000	.000	.937
	Wilks' Lambda	.063	1144.346b	2.000	153.000	.000	.937
	Hotelling's Trace	14.959	1144.346b	2.000	153.000	.000	.937
	Roy's Largest Root	14.959	1144.346b	2.000	153.000	.000	.937
level	Pillai's Trace	.057	2.261	4.000	308.000	.063	.029
	Wilks' Lambda	.943	2.277b	4.000	306.000	.061	.029
	Hotelling's Trace	.060	2.293	4.000	304.000	.059	.029
	Roy's Largest Root	.059	4.545b	2.000	154.000	.012	.056

Multivariate Tests[d]

Effect		Noncent. Parameter	Observed Power[a]
Intercept	Pillai's Trace	2288.693	1.000
	Wilks' Lambda	2288.693	1.000
	Hotelling's Trace	2288.693	1.000
	Roy's Largest Root	2288.693	1.000
level	Pillai's Trace	9.044	.658
	Wilks' Lambda	9.109	.662
	Hotelling's Trace	9.172	.665
	Roy's Largest Root	9.089	.766

a. Computed using alpha = .05
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Design: Intercept+level

Test of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	factor1_freq	738.019b	2	369.010	1.685	.189
	factor2_freq	15.645c	2	7.823	.794	.454
Intercept	factor1_freq	337840.983	1	337840.98	1542.483	.000
	factor2_freq	18703.599	1	3 18703.599	1898.170	.000
level	factor1_freq	738.019	2	369.010	1.685	.189
	factor2_freq	15.645	2	7.823	.794	.454
Error	factor1_freq	33729.713	154	219.024		
	factor2_freq	1517.437	154	9.853		
Total	factor1_freq	371759.000	157			
	factor2_freq	20267.000	157			
Corrected Total	factor1_freq	34467.732	156			
	factor2_freq	1533.083	156			

Test of Between-Subjects Effects

Source	Dependent Variable	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Corrected Model	factor1_freq	.021	3.370	.351
	factor2_freq	.010	1.588	.184
Intercept	factor1_freq	.909	1542.483	1.000
	factor2_freq	.925	1898.170	1.000
level	factor1_freq	.021	3.370	.351
	factor2_freq	.010	1.588	.184
Error	factor1_freq			
	factor2_freq			
Total	factor1_freq			
	factor2_freq			
Corrected Total	factor1_freq			
	factor2_freq			

a. Computed using alpha = .05
b. R Squared = .021 (Adjusted R Squared = .009)
c. R Squared = .010 (Adjusted R Squared = .003)

Frequency Measure MANOVA Results: Years of Teaching Experience

Between-Subjects Factors

		Value Label	N
exp-cat	1.00	0-5 years	50
	2.00	6-20 years	61
	3.00	20+	46

Descriptive Statistics

exp_cat		Mean	Std. Deviation	N
factor1_freq	0-5 years	48.1400	17.26978	50
	6-20 years	44.6885	13.63518	61
	20+ years	46.6087	13.63570	46
	Total	46.3503	14.86429	157
factor2_freq	0-5 years	10.9400	3.32836	50
	6-20 years	10.9016	3.17650	61
	20+ years	10.9348	2.92424	46
	Total	10.9236	3.13488	157

Multivariate Tests[d]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.937	1133.045b	2.000	153.000	.000	.937
	Wilks' Lambda	.063	1133.045b	2.000	153.000	.000	.937
	Hotelling's Trace	14.811	1133.045b	2.000	153.000	.000	.937
	Roy's Largest Root	14.811	1133.045b	2.000	153.000	.000	.937
exp_cat	Pillai's Trace	.012	.461	4.000	308.000	.764	.006
	Wilks' Lambda	.988	.459b	4.000	306.000	.766	.006
	Hotelling's Trace	.012	.458	4.000	304.000	.767	.006
	Roy's Largest Root	.012	.927	2.000	154.000	.398	.012

Multivariate Tests[d]

Effect		Noncent. Parameter	Observed Power[a]
Intercept	Pillai's Trace	2266.090	1.000
	Wilks' Lambda	2266.090	1.000
	Hotelling's Trace	2266.090	1.000
	Roy's Largest Root	2266.090	1.000
exp_cat	Pillai's Trace	1.844	.159
	Wilks' Lambda	1.837	.158
	Hotelling's Trace	1.831	.158
	Roy's Largest Root	1.854	.208

a. Computed using alpha = .05
b. Exact statistic
c. The statistic is an upper bound on F that yields a lower bound on the significance level.
d. Design: Intercept+exp_cat

Test of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	factor1_freq	331.674b	2	165.837	.748	.475
	factor2_freq	.049c	2	.024	.002	.998
Intercept	factor1_freq	334455.149	1	334455.149	1508.847	.000
	factor2_freq	18480.067	1	18480.067	1856.404	.000
exp_cat	factor1_freq	331.674	2	165.837	.748	.475
	factor2_freq	.049	2	.024	.002	.998
Error	factor1_freq	34136.058	154	221.663		
	factor2_freq	1533.034	154	9.955		
Total	factor1_freq	371759.000	157			
	factor2_freq	20267.000	157			
Corrected Total	factor1_freq	34467.732	156			
	factor2_freq	1533.083	156			

Test of Between-Subjects Effects

Source	Dependent Variable	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Corrected Model	factor1_freq	.010	1.496	.175
	factor2_freq	.000	.005	.050
Intercept	factor1_freq	.907	1508.847	1.000
	factor2_freq	.923	1856.404	1.000
exp_cat	factor1_freq	.010	1.496	.175
	factor2_freq	.000	.005	.050
Error	factor1_freq			
	factor2_freq			
Total	factor1_freq			
	factor2_freq			
Corrected Total	factor1_freq			
	factor2_freq			

a. Computed using alpha = .05
b. R Squared = .010 (Adjusted R Squared = -.003)
c. R Squared = .000 (Adjusted R Squared = -.013)

VITA

Theresa Arocha-Gill
c/o Dr. Homer Tolson
Department of EAHRD
Texas A&M University
College Station, Texas 77843-4226

EDUCATION

Ph.D., Educational Human Resource Development
Texas A&M University, College Station, Texas, 2010

M.Ed., Diagnostic-Prescriptive Teaching
The College of William and Mary, Williamsburg, Virginia, 1986

B.A., Composite Major in the Social Sciences,
Trinity University, San Antonio, Texas, 1979

CERTIFICATIONS

Mid-Management Certification, 1992

PROFESSIONAL EXPERIENCE

Special Education Coordinator, San Antonio Independent School District
Special Education Supervisor, San Antonio Independent School District
Special Education Teacher, San Antonio Independent School District
Special Education Teacher, Edgewood Independent School District

PROFESSIONAL AFFILIATIONS

Texas Council of Administrators of Special Education (TCASE) Member
Texas Alliance of Special Education Directors
Urban Collaborative Member
Association of Staff Development Council
National Staff Development Council

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