Teachers' Perceptions of Educational Research: A Self-Efficacy Perspective

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Abstract

Educational research contains many data-driven implications for inservice educational professionals including those who work closely with students with disabilities, special educators. Although special education professionals are under increasing directives to make use of this body of literature in the form of evidence-based practices, they historically strive for self-improvement and often look to research information for strategies as well as innovative approaches to help improve student achievement. Therefore, developing a comprehensive understanding of the issues related to the use of and perceived barriers to educational research information is critical to cultivating a more synergistic relationship between academia and inservice educational professionals.

 The current study queried 130 inservice special education professionals using an online, anonymous survey instrument. Participants were asked to respond to items that related to four main variables that may exert influence over their interaction with educational research information: general perceptions about educational research, perceived barriers to the use of educational research, typical sources of educational research information, and self-efficacy in the context of information literacy. Self-efficacy, as measured by confidence ratings, was investigated through two contexts: (a) finding information (general vs. research information), and (b) specific steps in the information literacy skill set.

The resulting data were analyzed using descriptive and inferential statistics including t-tests and Analysis of Variance (ANOVA). Results indicated that teachers generally hold positive perceptions of educational research, use a wide variety of sources for research information, and believe three main barriers exist to their use of research information: time, access, and the manageability of information. Although self-efficacy ratings were higher for finding general information versus research information, no differences were present between the steps of the information literacy skill set.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter One: Introduction

"We cannot hold a torch to light another's path without brightening our own," Ben Sweetland (Cook, 1997, p. 20). The conviction that educators must strive to be life-long learners so that their path can always be a guiding light for the students they serve, provides the milieu for the discussion that will ensue.

There are approximately 3 million educators teaching 48.9 million students enrolled within the U.S public school system. As students with disabilities are increasingly integrated within general education settings and minority student enrollments continue to rise, there is an escalated need for general and special educators to provide "best practices" to help students with diverse needs (Browder & Cooper-Duffy, 2003; Buell, Hallam, Gamel-McCormick, & Scheer, 1999; Snyder, 2007). Additionally, The No Child Left Behind Act of 2001 (NCLB) mandated that teachers, both general and special education teachers, use evidence-based practices as tools in modern classrooms (Fleischman, 2006; U.S. Department of Education, 2003). As a result of changing classroom dynamics and legislative requirements, general and special education teachers are under a great deal of pressure to provide innovative, research-based, and functional strategies to assist a diverse student body in the process of learning (Lembke & Stormont, 2005).

Evidence-based practices provide students with educational interventions, programs, strategies, curricula, and tools derived from scientific knowledge (U.S. Department of Education, 2003). In other words, educational research informs educational practice. The process of transferring educational research information from scholarly reports into classroom settings and practices has historically been a challenging process (Schoonmaker, 2007). The idea that there are inadequate linkages between the research community and the teaching community is not a new one nor are the debates as to the causes or possible solutions for this disconnect (Huberman,

1990). In spite of the challenges that may exist within this process, evidence-based practices have been legislatively mandated and could assist teachers in meeting the unique needs of students present within today's classrooms. Educators could use evidence-based practices as one avenue to identify, understand and confront teaching and learning issues in classrooms (Cordingley, 1999).

Connections between researchers and teachers that lead to evidence-based practices are often most useful when the two groups partner together to develop research projects (Buysse, Sparkman, & Wesley, 2003; Cannon, 2006). However, these types of collaborations are not always available for teachers. Consequently, they must find the means to access and use research information through other means, often independently. The process of finding, evaluating, synthesizing, and applying research information within classrooms autonomously requires specific skill sets called information literacy skills (Williams & Coles, 2007). Information literacy skills, with origins in the library community, are skills that are becoming increasingly associated those skills necessary for lifelong learning and within this context, the information processing skills needed for evidence-based practices (Mackey & Jacobson, 2005). While these skills are viewed as being essential components for success within the increasingly diverse information age, teachers' confidence levels related to their information literacy skills may impact their interaction with research information and subsequently influence evidence-based practices (Saunders, 2007; Williams & Coles, 2007).

On a practical level, if an individual is not very confident in a certain activity, they are not going to hold high expectations for their performance and may avoid this activity if given a choice (Bandura, 1997). Conversely, if an individual feels very confident in an activity, they would have higher expectations for their performance, anticipate more positive outcomes, and

perhaps even choose to engage regularly in this activity. Confidence levels are often used as a measure of self-efficacy beliefs (Bandura, 2006). This is the basic premise, albeit extremely abridged in this example, of self-efficacy beliefs and their relationship with confidence levels and behavior.

Therefore, teachers' confidence levels associated with information literacy skills and how this impacts their use of educational research can be explored within the context of self-efficacy beliefs. Self-efficacy beliefs are judgments a person makes about their competence (i.e., their ability to perform a task) (Bandura, 1997; Schunk & Pajares, 2005). The dynamics of self-efficacy beliefs and information literacy skills may be an area that yields significant implications for evidence-based practices.

As teachers are directed to provide evidence-based practices for students in today's classrooms, they must possess the requisite information literacy skills needed to make the connections between educational research and their teaching practices. However, the possession of these information literacy skills may not be enough to motivate educators to make those connections (Williams & Coles, 2007). The key to making these connections may lie within the self-efficacy beliefs of teachers related to the access, transfer, and application of research information (i.e., information literacy skills). If teachers feel confident in their ability to use information literacy skills to meet their needs with educational research, this could be the first step in increasing interaction with research information thereby subsequently providing greater probabilities that evidence-based practices might become more prominent within public school classrooms.

Overview

This study sought to explore variables that may impact teachers' interactions with educational research information such as perceptions of educational research, sources of educational research, perceived barriers to the use of educational research, and specifically, self-efficacy in the context of information literacy. Each of the aforementioned variables may play an individual and perhaps collective role in exerting influence over a teachers' interaction with research information and should be explored in this investigative framework.

Further, considering self-efficacy beliefs are measured by the self-report of an individual's confidence level, confidence levels will serve as the gateway for exploring educators' self-efficacy beliefs in the context of information literacy. Information literacy is a critical contextual variable because of the nature of the information processing and critical thinking skills associated with the concept. These types of skills, behaviorally and cognitively, are highly associated with the skills necessary for successful implementation of evidence-based practices (Usluel, 2007; Williams & Coles, 2007).

It is posited that a high degree of self-efficacy beliefs in the context of information literacy can lead to increased interaction with educational research materials. Further, increased interaction with educational research information should lead to increasing the experiences the individual has with research information. The increase in experience can increase the probability that the individual is able to overcome the obstacles or barriers that they perceive as hindering their use of educational research in the form of evidence-based practices (see Figure 1). Therefore, positive self-efficacy beliefs can impact evidence-based practices of educators by influencing vital behavioral and motivational variables. These variables include critical influences on relative information seeking behaviors. Concurrently, high degrees of self-efficacy

beliefs also supply an individual with a the confidence upon which perseverance, goal-setting, engagement, and intrinsic interest (Bandura, 1997) can constructively be utilized within the path of life-long learning that includes evidence-based practices.

Experience, including the amount of time spent interacting with research information, depth of involvement within the research process, and the quality of the resulting interactions with individuals and research information, are critical determinants in the pathway of evidence-based practices for educators. The field of educational research purports that increased experiences with educational research leads to more positive feelings about the field (Miretzky, 2007; Williams & Coles, 2007). Parallel to this line of research are the studies within the field of self-efficacy which suggests that experiences with an activity can not only lead to increased associative confidence levels, but also may influence the individual to choose to perform the activity independently when needed (Bandura, 1997; Schunk & Pajares, 2005).
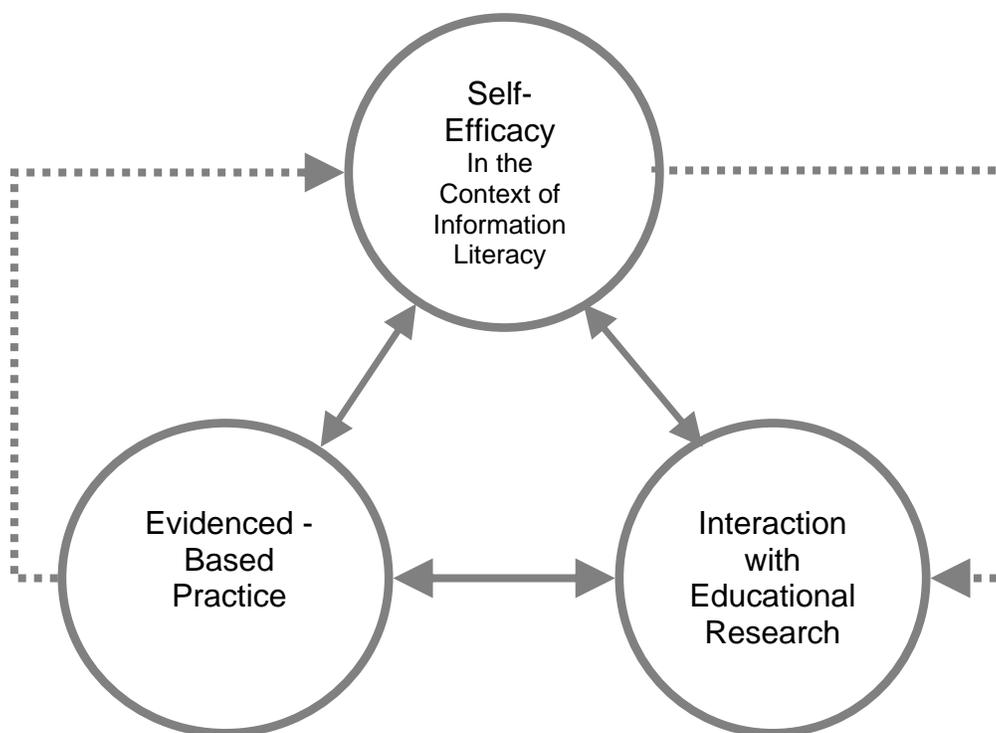
Figure 1: *Conceptual framework.*

Definition of Terms

To provide an enhanced understanding of the concepts and relationships of concepts within the literature review, a list of several key terms has been included. These terms may represent different meanings to individuals depending on the context within which they are used. However, the terms as they are defined and listed here are for the purposes of this study and the context within which they are presented.

American Library Association: the oldest, largest, and leading organization for library professionals in the world whose mission is to provide leadership for the development, promotion, and improvement of library and information services to enhance learning and ensure access to information (American Library Association, 2007).

Educational research: research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs (U. S. Department of Education, 2007).

Evidence-based practice: the use of scientific knowledge resulting from research as a framework for choosing interventions, programs, and curricula to improve educational outcomes (U. S. Department of Education, 2003).

Information literacy: the set of skills needed to find, retrieve, analyze, and use information effectively (American Library Association, 2006a).

Self-efficacy: a person's belief in their capability to produce a desired effect or outcome related to a specific task or activity (Bandura, 1997).

Chapter Two: Review of the Literature

To provide a thorough framework surrounding the concepts under investigation within this study, a literature review was conducted to include three central themes: educational research, information literacy, and self-efficacy. The organization of the literature review is consistent with these themes.

Educational Research

Historical Perspectives

The focus of educational research in the first half of the twentieth century was on finding the scientific criteria for what defines good teaching or teaching effectiveness. Researchers were interested in learning, learning theory, and how these concepts could provide an influential basis for instructional strategies for teachers in the form of standardized curricula (Schoonmaker, 2007). Educational research utilized the principles of behavioral psychology, using experimental designs to explore teacher/student relationships and the link between teacher characteristics and teacher effectiveness. Domas and Tiedman (1950) conducted a review of the literature and cited over one thousand studies related to teacher effectiveness with sound implementations of the experimental paradigms of psychology as well as influences from educational psychology. However, few studies offered any imminent implications for the practice of teaching (Schoonmaker, 2007).

Two prominent educational scholars of this time, Thorndike and Dewey, presented diverse yet interrelated views of teaching, the American educational system, and how best to transform education into a science that could lend theoretical, practical, and purposive contributions to society (Tomlinson, 1997). Thorndike's works focused on providing scientific evidence to improve teaching practices through controlled experiments to acquire the objective

knowledge that only experts could produce (Thorndike, 1931; Thorndike, 1929; Tomlinson, 1997; Schoonmaker, 2007). While Dewey agreed with the need for teaching practices to be grounded in research, he focused more on discovering principles that would significantly contribute in steering teachers from the traditional, routine activities present in classrooms of that time period toward more goal directed, intelligent teaching practices (Dewey, 1929; Schoonmaker, 2007). Dewey professed that educational inquiry should be a continuous process whose purpose should be to solve practical teaching problems (Garrison, 1988). However, Dewey cautioned that creating educational research that would immediately be considered applicable to practice may inhibit the growth of the true science of education (Dewey, 1929; Randi & Corno, 2007; Schoonmaker, 2007; Tomlinson, 1997).

Thorndike worked to create scientific evidence for educational reform based on two fundamental principles. First, he believed that predetermined intelligence created and maintained the nature of a society in which the hierarchical nature of that society was primarily informed by the intellectual elite (Thorndike, 1929; Tomlinson, 1997). Second, Thorndike believed that educational reform could be accomplished through viewing and supporting the American school system as a product development center in which teachers select and mold students into the vessel that best met the needs of society at that time. In contrast, Dewey spent a great deal of time investigating the democratic principles associated with schooling, human nature, and social aspects of the community of education (Dewey, 1929). He also presented teachers as informed contributors to research and reform, viewing them as pivotal members of the research community with expertise in child development, learning, and a practical understanding of psychology (Dewey, 1929; Tomlinson, 1997).

As educational research continued throughout the late 1900s, teacher effectiveness remained a constant focus; however, the intent of the research was still not to inform teaching practices. The purpose evolved into creating a body of knowledge for the field of education that could be underpinned in predicting behaviors, developing pre-packaged curricula, and designing curricular solutions for schools. Criticisms arose in the late 1970s that educational research was too deeply rooted in controlled experiments, curricular matters, the domination of children, and the tendency for educational research reports to attribute failure on the students rather than the schools (Ancess, Barnett, & Allen, 2007). These critiques further emphasized the need for the development of educational research that focused on practical problems with contextual implications for the realities faced by the practicing teacher (Ancess et al., 2007).

Qualitative methodologies began to emerge in the 1970s contrasting with the prominent quantitative research studies of the time. The qualitative investigations began to focus on the dynamic relationships present in the classroom and schools and attempted to take on the perspective of the students and teachers to provide a prosperous descriptive analysis of the events and perceptions present within a classroom (Ancess et al., 2007; Schoonmaker, 2007; Tomlinson, 1997). Discourses, from theoretical to practical, began regarding qualitative research in the educational setting and offering the teacher as an instrumental mediator. These studies further incorporated more practical forms of inquiry and investigated teachers, students, and classrooms in ways that accounted for and capitalized on the diversity present in the educational environment. Regardless of the research design, remaining cognizant that teaching is a complex social process with multifaceted variables that must include teachers and students as key negotiators of learning, is critical in connecting research to practice (Berliner, 2002; Garrison, 1988; Schoonmaker, 2007).

Although debates still occur as to what types of methodologies yield more informative results in educational research, the methodology employed within a research study will lend variable yet constructive results. Qualitative studies tend to produce contextual outcomes whereas quantitative studies are inclined to generate more causal relationships or factors (Spear-Swerling, 2007). Diverse methodologies, both qualitative and quantitative, contribute to the overall heterogeneity of the educational research platform; combining the art, science, and the practice of teaching in the field of education (Berliner, 2002).

Evidence-Based Practices

When teachers employ evidence-based practices in classrooms, they use scientific knowledge derived from research as a framework for choosing interventions, programs, and curricula to improve educational outcomes (U. S. Department of Education, 2003). The No Child Left Behind Act of 2001 (NCLB) and many other federal grant programs require the use of scientifically-based research to guide decision-making within the process of selecting classroom interventions (Browder & Cooper-Duffy, 2003; Fleischman, 2006; U.S. Department of Education, 2003). NCLB defines scientifically-based research as "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs" (U.S. Department of Education, 2007).

A clear definition for scientific research is critical in understanding the pretext for evidence-based practices. However, educational research employs a multitude of theories, methods, and research designs which can often make it difficult for the reader to determine whether or not the reported findings are based on high quality research and if they may be applicable to a given classroom. Spear-Swerling (2007) presented a set of characteristics that can

be applied to the field of education for evaluating the quality of research. These characteristics include "stating claims that are potentially falsifiable, collecting evidence through systematic observation and testing, considering alternative explanations of evidence and a cumulative body of evidence, and submitting evidence for inspection by the scientific community through peer review and publication" (p. 302).

In an effort to assist teachers in implementing evidence-based practices within their classrooms, the U. S. Department of Education (USDOE) issued a handbook for this process (U.S. Department of Education, 2003). This publication discusses many issues related to evaluating educational research to include rigorous evidence standards, randomized trials and control groups, reliability and validity evidence, suitable sample sizes, and acceptable reporting protocols. Further, this guide offers factors for teachers to consider when implementing evidence-based research in classrooms. Specific recommendations for teachers include a critical examination of the details of the referenced study (i.e., setting, timing, and participants) and the collection of outcome data to check for effects of the applied intervention (i.e., tracking pre/post-test scores and using control groups).

Clearly, the U. S. Department of Education recognizes the significance of evidence-based practices for public educators. Within the opening pages of the aforementioned research handbook, it states "we believe this approach [using scientifically-based research] can produce major advances in the effectiveness of American education" (U.S. Department of Education, 2003, p. iii). The USDOE has demonstrated a commitment to ensuring beneficial evidence-based practices through legislative actions, such as in the case of NCLB which mentions scientifically-based research over 100 times, and through the development of publications such as the resource

guide for teachers (Browder & Cooper-Duffy, 2003; Smith, 2003; U.S. Department of Education, 2003).

Other agencies and organizations have promoted evidence-based practices through a wide variety of programs and services. For example, the University of South Florida, Center for Evidence-Based Practices, focuses on providing research informational resources about young children with behavioral issues (Center for Evidence-Based Practice: Young Children with Challenging Behavior, n. d.). One of the center's primary objectives is to increase implementation of positive evidence-based practices through the development of an easily accessible database of applicable research and strategies for success. This project includes partnerships with the National Association for Bilingual Education (NABE), National Association for the Education of Young Children (NAEYC), National Association of Child Care Resource and Referral Agencies (NACCRRA), National Black Child Development Institute (NBCDI), Division for Early Childhood of the Council for Exceptional Children (DEC), and National Head Start Association (NHSA).

The Council for Exceptional Children also promoted evidence-based practices through several initiatives (Evidence-based Practice, 2007). The Council for Exceptional Children's (CEC) Division of Research developed recommendations for the Institute of Educational Sciences (IES) that directed the IES to promote research and evidence-based practices for children served under the Individuals with Disabilities Education Act (IDEA). Further, the CEC recommended this research include transition skills necessary for students with disabilities to move from the school environment to a postsecondary setting. While the CEC acknowledges that federal law mandated that teachers use evidence-based practices in their classrooms, they also recognize that no entity has determined specific criteria for evidence-based practices in the field

of special education. Therefore, the CEC seeks to help special educators access the research in the field while assisting in developing the needed standards for special education. The organization's Professional Standards and Practice Committee developed a proposal to address the issues surrounding selection criteria for evidence-based practices and define a process by which the CEC would identify these practices for educators.

In 2002, the Institute of Education Sciences developed the What Works Clearinghouse (WWC) in an effort to help educators in locating and using credible evidence to make informed teaching decisions (see http://ies.ed.gov/ncee/wwc/). Considering the current national emphasis being placed on ensuring that all students and schools meet high standards, the WWC seeks to fill the void currently in place between researchers and educational policymakers and teachers. This agency has developed a set of easily accessible databases that include synthesized reports of quality educational interventions that aim for improving student outcomes.

A dimension of the Carnegie Foundation for Advancement of Teaching is the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) Leadership Program (see http://www.carnegiefoundation.org/general/sub.asp?key=21&subkey=2021&topkey=21). One initiative within the CASTL Leadership Program involves a group of institutions collaborating to promote institutional change in support of teaching and learning, improve student learning and teaching, and synthesize knowledge about educational practices. Of the projects currently underway in this group, one involves evidence-based inquiry into student learning. Collaborative partnerships for this endeavor entitled, Integrating the Scholarship of Teaching and Learning into Institutional Culture: Philosophy, Policy, and Infrastructure, include Buffalo State College, Centre for Excellence in Media Practice at Bournemouth University, Open University, Rose-

Hulman Institute of Technology, University of New South Wales, University of Victoria, and Western Carolina University.

Many other organizations promote the use of evidence-based practices. The Puckett Institute fosters evidence-based practices through multiple initiatives (see http://www.puckett.org/). They have established separate centers with specific goals and foci to influence the adoption of evidence-based practices. These centers include the Center for Evidence-based Practices, the Excellence in Early Childhood Education Center, Innovative and Promising Practices Center, the Center for Improving Community Linkages, the Center for Practical Evaluation, the Center for the Study of Charter Schools, and Dissemination and Utilization Center. The Cochrane Collaboration, founded in 1993, is another organization that promotes evidence-based practices; however, this international organization primarily focuses on information for the medical community (see www.cochrane.org/).

Need for Evidence-Based Practices

The No Child Left Behind Act (NCLB) not only mandated practices and programs grounded in scientifically based research, it also required outcome-based assessments for all students including underrepresented groups such as students with disabilities (Browder & Cooper-Duffy, 2003; Fleishman, 2006; Smith, 2003). As students with disabilities are progressively integrated into the general education setting, the traditionally separate systems of education and accountability are merging for students with disabilities and their non-disabled peers (Lembke & Stormont, 2005). General educators and special educators are in need of guidance, strategies, and interventions to help students with a wide variety of needs access the

curriculum and show progress toward learning goals (Browder & Cooper-Duffy, 2003; Buell,

Hallam, Gamel-McCormick, & Scheer, 1999).

All students, regardless of their disability status or ability level, must exhibit progress

toward the academic standards set forth within the federal legislature (Browder & Cooper-Duffy,

2003). Although there may be alternative formats for meeting the assessment requirements,

students with disabilities must demonstrate evidence of learning based on the same curriculum

standards present for their non-disabled peers (Smith, 2003). Considering students with

disabilities, some with severe disabilities, are educated in the general education setting, general

education teachers often feel unprepared to teach this group of students (Buell et al., 1999;

Smith, 2003). Many veteran general education teachers received little or no formal training in

teaching students with disabilities (Buell et al., 1999). Therefore, evidence-based practices may

offer an avenue for educators to fill this void and acquire essential knowledge and skills to

successfully teach non-traditional students.

To comply with the aforementioned assessment requirements and maintain school

accreditation, educators must find ways to help an increasingly diverse student body succeed

(Lembke & Stormont, 2005). Although students with disabilities account for nearly 14% of the

students enrolled in the public school system, there are other groups of students who contribute

to the levels of diversity present in classrooms today (Snyder, 2007; Snyder, Dillow, & Hoffman,

2007). In the fall of 2004, 42.1% of public school students were members of minority groups

including 19.2% of Hispanic ethnicity and 4.5% of Asian ethnicity (Snyder, 2007). Since 1980,

the percentages of Hispanic and Asian students present within the public school system have

more than doubled (Snyder et al., 2007). Due to the changing classroom dynamics, general

educators and special educators are under mounting pressures to implement effective, scientific,

and evidence-based practices to ensure positive academic outcomes for all students regardless of their disability status or diverse needs (Lembke & Stormont, 2005).

Connecting Educational Research and Practitioners

The process of connecting educational research information with teachers can be thought of initially in terms of exposure to research information as well as the sources of this information, whether directly or indirectly. In other words, teachers must come into contact with research information before they can use it as a framework to provide evidence-based practices. Burkhardt and Schoenfeld (2003) discussed several typical sources for teachers that can provide exposure to research information:

- Professional summaries: professional organizations gather relevant research intended for teaching professionals and issue this collection of information in the form of a guide;

- Professional development programs: school districts choose topics for presentations and directed learning activities based on educational research;

- Educational policy: policymakers suggest changes in educational practices, design legislative mandates, or issue educational standards based on empirical data;

- Independent teacher activities: teachers find and read research reports on their own or in small groups; and

- Collaborative research projects: teachers and researchers work together throughout a research study.

`   Each of the aforementioned sources of research information encompasses many contextual, environmental, and individual characteristics and circumstances that may or may not lead to actual evidence-based practices (Burkhardt & Schoenfeld, 2003). However, one area that

has been consistently correlated with the implementation of evidence-based practices by teachers occurs within collaborative research efforts and projects (Ancess, Barnett, & Allen, 2007).

Circumstances that lead to evidence-based practices among teachers are often dependent upon the relationship between the researcher and the teacher (Huberman, 1990; Schoonmaker, 2007). When there is a relationship of mutual respect, each contributor believes that the other makes valuable and constructive contributions (Ancess, et al., 2007). The willingness of teachers to engage with research information tends to be higher when they are working collaboratively with researchers. Further, developing the partnership before the study is conducted and maintaining the relationship throughout the research project benefits both parties (Cannon, 2006; Huberman, 1990). Teachers have the benefit of a person who is knowledgeable about the intervention (i.e., the researcher) with whom they can discuss the success or failure of the intervention. Researchers have the benefit of receiving feedback about the strategy or intervention in a real-world context that include naturally occurring variables (Cannon, 2006). These types of connections offer positive ways to reconstruct the typically linear dissemination of research information from researcher to teacher to a relationship in which there are shared goals and a mutual commitment (Buysse, Sparkman, & Wesley, 2003; Cannon, 2006).

Reciprocal relationships between researchers and practitioners can result in constructive outcomes and increase evidence-based practices. For example, the Minority Student Achievement Network (MSAN) was formed to help minority students across the U.S. achieve better educational outcomes (Cooper, 2007). One of the organization's initial goals included closing the achievement gap between minority and white students within specific public school districts. In an effort to do so, closing the gap between research and practice became a pivotal strategy. MSAN created a research-based body of knowledge to organize and disseminate

relevant educational research to educators within the MSAN school districts. The team collaborated with researchers to conduct and evaluate school, district, and organizational efforts. MSAN used research tools and partnerships to monitor progress and to identify interventions for improving the achievement of African American and Latino students.

Another organization that has engaged in successful research partnerships with teachers is the National Center for Restructuring Education Schools and Teaching (NCREST) at Columbia University. NCREST conducts collaborative research projects with practitioners using research methodologies to identify specific areas of need and to provide collaborative data collection and analysis (Ancess et al., 2007). They also assist in the process of using existing and collected data to develop strategies for improving student achievement. In 2005, NCREST teamed with the Middle College National Consortium (MCNC), a national group of high schools located on community college campuses that assist under-performing youth with access to college. NCREST and MCNC partnered together to find more effective ways to use school and student data to improve school and student outcomes in mathematics. The NCREST researchers and participating MCNC schools used data-driven methods to investigate student performance in math, identify problem areas, select intervention strategies for student improvement, and develop plans for changes within their respective math programs. The schools that participated within this project reported benefits such as learning to use existing data to develop new and more accurate problem identification, analysis, and resolution plans, as well as increased practitioner commitment to continued data collection and analysis that focused on outcome measures rather than individual responsibility.

Although these collaborative research projects reported many positive accomplishments experienced by the researchers, principals, teachers, and students, they also acknowledged the

challenges encountered by all parties involved when participating in research and using research reports. For instance, during the course of the NCREST/MCNC collaborative project, Ancess and colleagues (2007) cited the lack of practitioners' research experience and low confidence levels associated with data analysis procedures as challenges that contributed to frustrations during the groups' work sessions.

Communities of practice, most closely associated with the works of Lave and Wenger, are another avenue to support connections between research information and practitioners in the field of education (Lave, 1988; Lave & Wenger, 1998; Smith, 2003). Buysse, Sparkman, and Wesley (2003) reviewed the literature to present and discuss the theoretical framework of "communities of practice" and how this framework can provide connections between the research community and educators. Of specific interest to Buysse et al. (2003) was how to connect what researchers are publishing in educational journals with what teachers are doing in the field, particularly in the field of special education. Communities of practice are defined as "a group of professionals and other stakeholders in pursuit of a shared learning enterprise, commonly focused on a particular topic (e.g., methods to promote early literacy learning, strategies for increasing parent participation" (Buysse et al., 2003, p. 266). Additionally, communities of practice are formed to broaden knowledge and extend learning across level of expertise rather than having researchers perceived as the only experts in the field and teachers viewed as the novices. In a community of practice framework, information sharing is bidirectional, flowing to and from researchers and practitioners. Each group is responsible for cultivating knowledge within the social and cultural context of the community (Buysse et al., 2003).

The community of practice theoretical framework is supported by two critical components, situated learning and reflective practice (Buysse, et al., 2003; Smith, 2003). Knowledge as a shared, socio-culturally constructed endeavor which focuses on what it means to learn and be a member of a learning community is the foundation for situated learning. Situated learning theory is vastly different from more traditional views of learning in that it is grounded in activities that involve applied knowledge that is acquired and shared amongst members of a community that hold collective goals. Reflective practices involve a continual process of evaluating one's knowledge base, practices, and experiences with others as a way to identify improvements and knowledge growth. This process of reflection and subsequent discussions with other professionals assists the group in developing knowledge generated by the experiences of the group as a totality instead on one member. Thus the reflective component of this theory extends knowledge again from one entity (teacher or researcher) to all persons involved in the community of sharing (i.e., community of practice) (Buysse et al., 2003).

Communities of practice have led to many successful partnerships between researchers and practitioners. The Wisconsin Preschool Action Research and Development Initiative (PARDI) began with an action research focus in pursuit of advancing research and classroom practices relative to early childhood inclusion settings (Buysse et al., 2003). Action research differs from the community practice model in several ways. Action research tends to promote temporary collaborations between researchers and teachers only for the duration of a study. Second, it tends to focus on a particular task such as examining teacher practices relative to behavior management for students with autism. Although PARDI's purpose was initially to conduct action research as just described, it soon became evident that portions of their project (reflective activities, socially derived knowledge, peer support, etc.) were contributing

significantly to the project and knowledge-base surrounding the issues of understanding inclusive practices in the elementary setting. Further, the researchers became active participants within the research project with responsibilities to contribute to significant advances through shared inquiry. Full participation and reciprocal learning are properties that contrast sharply with the ideals of action research endeavors in which the researchers maintain a formal role with control over the direction and purpose of the study (Buysse et al., 2003). In addition to the communities of practice model for integrating educational research with teaching practices, collaborative research partnerships often develop that can lead to these connections but may not necessarily be termed as such under this theoretical model. Regardless, collaborative partnerships appear to hold the most crucial predictive variable in connecting research with teachers.

Even when researchers and teachers work together to problem-solve, the process of implementing evidence-based practices is not always an easy one. Perhaps of greater consequence are the barriers that occur when practitioners are not partnered with an experienced team that can provide guidance and support throughout the process of connecting research findings to daily educational tasks (Ancess et al., 2007). Due to many circumstantial and contextual factors (i.e., lack of available resources and lack of administrative support) that are beyond the control of the research groups or the teachers, these partnerships often do not occur and the teacher must find and use alternative means to access research information for evidence-based practices (Miretzky, 2007).

Barriers to Evidence-Based Practices

When collaborative research partnerships are unavailable for teachers, they must find alternative routes for finding research studies, evaluating the quality of the findings, and organizing this information into constructive pieces that generalize into their classrooms. Many contributing factors influence this multifaceted process and the obstacles teachers report when trying to transfer research information into classrooms are important for further discussion.

Teachers have reported the following factors as potential or perceived barriers to their implementation of evidence-based practices:

- Time: little available time to read and apply research findings in their classrooms;

- Confidence: low confidence levels associated with the process of finding and using research information;

- Access: an inability to access scholarly research findings;

- Information Literacy: a lack of necessary skills and/or confidence in using the skills needed for finding and using research information;

- Relevance: a lack of significance links to practical classroom needs; and

- Support: lack of support from leadership entities such as administration, professional development programs, and education policymakers (Browder & Cooper-Duffy, 2003; Burkhardt & Schoenfeld, 2003; Buysse et al., 2003; Council for Exceptional Children, 2007: Miretzky, 2007; Schoonmaker, 2007; Williams & Coles, 2007).

Prior experience with research also appears to be significant in influencing teachers' use of and attitudes toward educational research. Considering most teachers have little contact with research in their undergraduate educational programs, they may feel intimidated by the language and nature of structured, technical reports often present in published research studies (Miretzky,

2007). The prominence of dense, scientific language often found within research reports has been cited in numerous articles as a possible hindrance to evidence-based practices for teachers (Burkhardt & Schoenfeld, 2003; Fleischman, 2006; Williams & Coles, 2007). In the absence of prior knowledge to serve as a catalyst for new knowledge and conceptual formation, it can be very difficult to read, organize, and synthesize information in such an unfamiliar format (Randi & Corno, 2007). However, teachers' who have prior experience with research information report more positive feelings toward research in general (Miretzky, 2007; Williams & Coles, 2007). Teachers' within Miretzky's (2007) study discussed that their experiences with research, including practicum assignments that required relating research findings to observed classroom practices, helped to demystify the research process. Further, one teacher stated that her experiences in linking research to practice helped her to become a better reader of research.

Williams and Coles' (2007) findings indicated that teachers within the United Kingdom (UK) held fairly positive attitudes toward educational research. Almost half of the participants within that study reported positive feelings toward educational research while 47.1% reported neutral feelings and 7% reported negative feelings toward educational research. Consequently, it is interesting to note that the overall optimistic attitude associated with the use of educational research within the public school system in the UK. This lies in contrast to the common perception and evidentiary reports that purport teachers within the United States are resistant to research and have a tendency to cognitively and pragmatically separate the two entities of educational research and classroom practice (Miretzky, 2007).

As previously noted, in the absence of a research-teacher partnership, teachers must often be able to independently find, evaluate, and transfer research findings into their classrooms. The

skills needed within this critical process are often referred to as information literacy skills and have a potential impact on the use of educational research (Williams & Coles, 2007).

Information Literacy

Definition and History

The concept of information literacy includes skills that are necessary to successfully use information systems. Information literacy is considered by the library community to be a necessary competence for using available information as a basis for lifelong learning (American Library Association, 2000a). The skills associated with information literacy enable learners to further develop their knowledge base relative to a desired content area through comprehensive investigations that contribute to learner autonomy, self-direction, and efficiency (American Library Association, 2000; Mackey & Jacobson, 2005; Snavely & Cooper, 1997).

According to the American Library Association (2000), information literacy is defined as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (pp. 2-3). Additionally, the American Library Association states:

An information literate individual is able to:

- Determine the extent of information needed

- Access the needed information effectively and efficiently

- Evaluate information and its sources critically

- Incorporate selected information into one's knowledge base

- Use information effectively to accomplish a specific purpose

▪ Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally. (pp. 2-3).

The American Library Association created a framework for information literacy as a foundation to clearly define critical skills and resources needed to function successfully in the information age (Mackey & Jacobson, 2005). The abundance of information sources available in contemporary society as well as rapid technological advancements in communicating information amongst large groups of people increase the need for information literacy skills competence. Individuals are often overwhelmed with information sources in their personal, professional, and academic lives including libraries, communities, social groups, professional organizations, the media, the Internet, and newspapers to name a few (American Library Association, 2000). Considering the proliferation of information choices and wide variety of information available for use, it is often difficult for people to determine whether information is accurate, useful, or from trustworthy sources. These issues create a paradoxical relationship with information in today's society. An increasing amount of information is available to a broader audience so that more information reaches more people than perhaps ever before. However, a wealth of information in itself does not produce a more informed culture without the complementary skills that offer the ability to use that information effectively, efficiently, and reliably as responsible consumers of information (American Library Association, 2000).

While information literacy relates to the skills necessary for proficiency in using technology resources, the two concepts and skill sets should not be confused. Information technology skills refer to skills necessary for a person to use computers, databases, and a variety of technologies to perform a task (American Library Association, 2000). These skills are further described as advancing capabilities in computer hardware and software applications.

Information literacy is an intellectual framework for the critical discrimination of information and concurrently represents the cognitive applications of problem-solving, reasoning, and synthesis of information necessary for knowledge development (American Library Association, 2000). Skills within the realm of information literacy encompass thoroughly investigating subject matter, developing an understanding of that content, critically evaluating and analyzing the information for applicability within a particular area of need, and communicating and applying new knowledge to an appropriate situation. Therefore, information literate persons will undoubtedly develop and hold a certain level of information technology skills, and vice versa, but neither to the extent of the others' intended expertise. Although these two skill sets support each other, they are ultimately separate entities with different characteristics.

Associative Skills

In 1989, the premier professional organization for library professionals, the American Library Association (2000), developed a conceptual framework for information literacy (Mackey & Jacobson, 2005). The purpose of defining and issuing guidelines about information literacy was for the American Library Association to assist the higher education community in aligning competency-based skills for lifelong learning with the information literacy efforts present in the K-12 school settings. Therefore, this theoretical framework was chosen for inclusion as the contextual variable for this investigation because of the critical information processing and cognitive processing elements represented by the model and presented by the ALA as their paradigm of choice.

In 1994, the Middle States Commission on Higher Education (MSCHE) introduced information literacy as a component for accreditation; however, the definition and guidelines provided were not widely used outside the library community (Ratteray, 2002). The MSCHE has since revised its standards and delineated specific frameworks with detailed expectations for information literacy skills (Saunders, 2007). Many other regional and program accrediting organizations, such as the New England Association of Schools, Colleges and the Western Association of Schools and Colleges, and the Southern Association of Colleges and Schools (SACS) have recognized the need to incorporate information literacy as part of the necessary skill sets of graduating students (American Library Association, 2000; American Library Association, 2006b; Saunders, 2007).

Information literacy skills are represented by five standards that include performance indicators and outcomes (American Library Association, 2000). The standards and performance indicators define the needed skills for the demonstration of information literacy. The related outcomes further describe behavioral and/or intellectual abilities necessary for demonstration of that particular standard. The five standards and associated performance indicators representative of information literacy are presented in Table 1.

These standards and related skills represent Bloom's Taxonomy of Educational Objectives using lower and higher order thinking skills (American Library Association, 2000). Lower order thinking skills include tasks such as identifying keywords and synonyms while higher order thinking skills include abstract thought and developing new hypotheses. As institutions integrate information literacy into their curricular standards, it is important to note that the outcomes *may* be used as a form of assessment of student information literacy competency. However, institutions are encouraged to develop appropriate methods of assessment

Table 1: *Information Literacy Standards, Performance Indicators, and Outcomes*

Standard	Performance Indicator
The information literate student determines the nature and extent of the information needed.	The information literate student: ▪ Defines and articulates the need for information. ▪ Identifies a variety of types and formats of potential sources for information. ▪ Considers the costs and benefits of acquiring the needed information. ▪ Reevaluates the nature and extent of the information need.
The information literate student accesses needed information effectively and efficiently.	The information literate student: ▪ Selects the most appropriate investigative methods or information retrieval systems for accessing the needed information. ▪ Constructs and implements effectively-designed search strategies. ▪ Retrieves information online or in person using a variety of methods. ▪ Refines the search strategy if necessary. ▪ Extracts, records, and manages the information and its sources.
The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.	The information literate student: ▪ Summarizes the main ideas to be extracted from the information gathered. ▪ Articulates and applies initial criteria for evaluating both the information and its sources. ▪ Synthesizes main ideas to construct new concepts.

- Compares new knowledge with prior knowledge to determine the value added contradictions, or other unique characteristics of the information.
- Determines whether new knowledge has an impact on the individual's value system and takes steps to reconcile differences.
- Validates understanding and interpretation of the information through discourse with other individuals, subject-area experts, and/or practitioners.
- Determines whether the initial inquiry should be revised.

The information literate student, individually or as member of a group, uses information effectively to accomplish a specific purpose.	The information literate student: - Applies new and prior information to the planning and creation of a particular product or performance. - Revises the development process for the product or performance. - Communicates the product or performance effectively with others.
The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.	The information literate student: - Understands many of the ethical, legal, and socio-economic issues surrounding information and information technology. - Follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources. - Acknowledges the use of information sources in communicating the product or performance.

within the appropriate context for the applicable level of difficulty and align these assessments with the mission of the institution. Considering information literacy can be applied inter-disciplinarily across college campuses, individual disciplines should focus on skill development that best meets the needs of that particular domain (American Library Association, 2000).

Relevance to Evidence-Based Practices

From a broad perspective, information literacy skills can be viewed as an active critical thinking component, specifically to negotiate information (Breivik, 2005), that may link practitioners to educational research through a network of findings. The critical thinking skills involved in information literacy consist of the ability of educators to define their needs, to locate applicable information, to evaluate the research reports' quality and utility, and to synthesize and organize this information into strategies that can be implemented in the classroom (Williams & Coles, 2003). These practitioner skills, as they relate to the use of educational research, have not been widely explored. However, information literacy represents one angle for examining the causes of the current disconnect between research information and practitioners (Williams & Coles, 2003).

In addition to teachers, other professionals present in public school systems are being directed to implement evidence-based practices. Speech-language pathologists, who are personnel often employed within special education departments, have received such direction in the form of new standards of practice. In 2005, the American Speech-Language-Hearing Association (ASHA) issued standards requiring that new clinicians demonstrate knowledge of and the ability to integrate research principles into evidence-based practices. Nail-Chiwetalu and Ratner (2006) illustrated a parallel relationship between information literacy skills and evidence-

based practices for Speech-language pathologists. Considering that information is found by performing research and that research is a process that involves many steps and stages in pursuit of information, information literacy skills are viewed as vital in exhibiting proficiency in the research process and satisfying information needs. Additionally, the authors emphasized that although clinical skills are strengthened through personal, educational, and clinical experience, the diverse demands of everyday practice require consistent use of new information in order to provide the most effective approaches. Speech-language personnel are encouraged to pursue, integrate, and evaluate research data in order to apply this new knowledge to their practice.

The critical importance of information literacy skills in the field of education represents essential proficiencies necessary for success in information-based societies (Usluel, 2007). Usluel (2007) suggests that teachers may be able to contribute to students' development within the realm of information literacy skills, thereby potentially contributing to the students' future success, if the teachers hold positive self-efficacy beliefs related to information literacy skills. Furthermore, teachers with high levels of information literacy self-efficacy may organize their learning environments to better engage students with the concepts and tools necessary for information literacy. These teachers may also pursue personal and professional development activities which would continue to develop their information literacy skills (Usluel, 2007).

The ability to teach students with diverse needs in modern classrooms requires more than the acquisition of needed information literacy skills. Teachers need to feel empowered and confident in their ability to make a difference for the students they teach (Buell et al, 1999). Consequently, developing a high level of self-efficacy related to information literacy skills may be one area worthy of exploration in an attempt to foster the connection between research information and practitioners. Although there is a great deal of literature on the individual

concepts of self-efficacy and information literacy, consideration of the concepts jointly within the context of evidence-based practices is rare (Usluel, 2007).

Self-Efficacy

Theoretical Perspective

Self-efficacy beliefs, a concept with an origin in social cognitive theory, can assert many critical influences on a person's behaviors, cognitive processes, goal-setting, perseverance, motivation, and achievement (Bandura, 1989; Bandura, 1995; Schunk, 2003; Schunk & Pajares, 2005). Social cognitive theory suggests that self-regulation and reflection, cognitive processes, experience, and social and environmental influences all play pivotal roles in the development of the human agency (Bandura, 1995). The theory of human agency proposes humans as conscious agents with proactive roles rather than as simple, reactive organisms that are vulnerable to forces derived from inner, uncontrollable impulses and shaped by environmental influences (Bandura & Locke, 2003; Schunk & Pajares, 2005). Social cognitive theory is based on the principle that human functioning depends on a dynamic interplay of personal, behavioral, and environmental influences (Schunk, 2003) as well as the interpretations individuals use to inform themselves about their present skill level and how they may use and adapt those skills in future situations (Schunk & Pajares, 2005). A critical component of this theory involves the self-beliefs (i.e., self-efficacy beliefs) that individuals have about their abilities and how those beliefs impact learning, motivation, and self-regulation (Bandura, 1997; Pajares, 2002).

Self-efficacy beliefs encompass goal-referenced, context-specific, cognitive judgments that a person holds regarding their ability to accomplish certain tasks (Bandura & Locke, 2003; Schunk & Pajares, 2005; Zimmerman, Bandura, & Martinez-Pons, 1992). Additionally, this

belief system involves critical feelings about one's ability to organize and accomplish needed tasks relative to the situation (Bandura, 1995). Perceived self-efficacy influences how one thinks, feels, acts, and motivates oneself (Bandura, 1995; Bandura, 1997; Schunk, 1991). It is significant to note that self-efficacy beliefs are embedded in a person's perception of his or her ability. In essence, it is what a person believes to be true of themselves that contributes more significantly to the development of self-efficacy beliefs than the results of a more objective measure or analysis of ability (Bandura, 1997; Pajares & Miller, 1995; Schunk & Pajares, 2005). It is not the number of skills a person possesses that matters rather, it is their *belief* that they can use those skills to be successful in a variety of circumstances (Bandura, 1997; Schunk & Pajares, 2005).

Considering behavior as a function of a wide variety of cognitive, inferential, and circumstantial influences, self-efficacy beliefs alone are not sufficient to produce competent performances (Schunk, 1991). Essential skills, in conjunction with positive self-efficacy beliefs, contribute to a person feeling motivated and confident that their behavior will produce a desired outcome (Schunk, 1991). For example, if a person believes that he has the prerequisite skills to perform a task (such as adding two sets of numbers) and feels confident that he could add these numbers to produce the correct answer, self-efficacy theory would suggest that this individual would rate their degree of confidence related to this problem as high. In this situation, this person may choose to perform the math problem because he believes that he is capable of using his skills to produce the correct answer. Conversely, if he did not feel as though he had the necessary prerequisite skills and had a low degree of confidence related to the task, this individual may choose not to solve the math problem because he does not believe his action would produce a favorable outcome. In other words, low self-efficacy tends to produce avoidance behaviors

whereas high self-efficacy tends to motivate individuals to participate in tasks and activities in which they feel confident that their behaviors will lead them to success (Schunk, 1991).

Development of Belief System

Self-efficacy beliefs develop over time and through many diverse conditions. Four primary sources that influence the development of self-efficacy beliefs are mastery experiences, vicarious experiences, social persuasions, and physiological and emotional states (Bandura, 1995). Mastery experiences include an interpretive effect from a person's previous performance when engaged in certain tasks and results in an awareness related to success and failure (Bandura, 1995; Schunk & Pajares, 2005). People use information from prior performance to develop their sense of ability and relative self-efficacy based on the tasks that led to success or failure. Success tends to increase perceptions of self-efficacy and failure tends to decrease it (Bandura, 1995; Schunk, 1991). This is not to say that individuals need only to experience positive outcomes in order to develop their sense of efficacy. Individuals need to also experience obstacles and comparative failure (Schunk & Pajares, 2005) in order to cognitively develop the necessary skills that will allow for adaptation in future situations such as resiliency, perseverance, motivation, and sustained effort (Bandura, 1995). Adversity allows an individual an opportunity to develop positive and useful cognitive strategies (Alfassi, 2003; Bandura, 1997) that will lead to success and offer informative perceptions regarding a person's possible limitations (Schunk & Pajares, 2005). As previously noted, individuals will most often choose to engage in activities in which they feel most confident about their competence (high sense of self-efficacy) and have experienced previous success. However, it is the collective nature of self-

efficacy that requires both the positive and negative experiences for development of resiliency in the face of difficulty (Alfassi, 2003; Schunk & Pajares, 2005).

Vicarious experiences assist individuals in formulating ideas about their capabilities, often using models, in relation to the attainments of others through observing other people perform tasks (Bandura, 1997). Modeling can be especially influential when a person observes someone else performing a task, associates themselves with a similar attribute, and uses the other person's performance as a guide in evaluating their own functioning capability (Schunk & Pajares, 2005). Even though vicarious experiences do not have as much influence on the development of self-efficacy beliefs as do mastery experiences, they do increase self-efficacy beliefs when the person performs superiorly to others deemed similar to themselves (Bandura, 1997).

Social persuasions and verbal communications obtained from others also exert influence over the development of self-efficacy beliefs. The feedback received from significant others regarding faith in an individual's capabilities may contribute to increasing confidence and may promote resilience when difficulties arise (Bandura, 1997). However, it is important to note that the verbal reinforcement needs to be authentic in nature and relative to the situation and ability level of the person in order for the persuasive effects to result in the promotion of self-affirming beliefs.

The emotional and physical state a person experiences while contemplating performing an activity or experiences during an activity also contributes to perceived self-efficacy (Schunk & Pajares, 2005). People often gauge their confidence level by the emotional reaction they associate with certain tasks or demands. The emotions of stress and anxiety and their associated physical symptoms provide cues regarding prospective success or failure (Bandura, 1989;

Schunk & Pajares, 2005). As people experience strong emotional reactions, they begin to experience fear, stress, and depression which may further perpetuate anxiety and self-doubt and decrease the person's ability to perform in ways that would demonstrate his or her true ability level (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996).

As a result, it is important that individuals are afforded the opportunity to develop positive self-efficacy beliefs through mastery experiences as well as vicariously through the use of models. When emotional and physiological reactions do occur, they can often be mediated if the person has previously experienced positive outcomes in a similar situation or closely associated task (Bandura, 1997; Schunk & Pajares, 2005). Prior experiences that lead to success increase a person's confidence level related to those experiences. An increase in confidence can produce more positive self-efficacy beliefs.

The effects and impacts of self-efficacy beliefs are evident in many facets of the learning, engagement, and motivation realms. Positive self-efficacy can inspire individuals to set challenging yet appropriate goals and maintain a commitment to those goals through task completion. Additionally, individuals with a high level of self-efficacy tend to approach demanding tasks with a masterful purpose instead of intimidations and report greater intrinsic interest and deeper engrossment in those activities (Schunk & Pajares, 2005). Individuals with a high sense of self-efficacy in a certain domain will often exhibit higher effort and sustain their efforts in the face of failure while quickly recovering that sense of self-efficacy after impediments. They are also likely to attribute personal obstacles to insufficient effort or deficient knowledge or skill levels that are attainable whereas individuals with low self-efficacy beliefs tend to experience relatively little incentive to persevere when confronted with failures or difficulties (Schunk & Pajares, 2005). Strong self-efficacy beliefs also promote the development

of positive adaptive self-regulatory behaviors such as self-monitoring of learning, the use of cognitive and meta-cognitive strategies, self-evaluation, goal setting, and cognitive engagement. Self-regulatory behaviors can all contribute to motivating forces within an individual to approach future learning situations with fervor (Bandura, 1997; Schunk & Pajares, 2005).

Assessment of Self-Efficacy Beliefs

A person's assessment of his ability and the confidence he has in his capacity to perform a task are part of one's self-efficacy beliefs (Bandura, 1997; Schunk & Pajares, 2005). Self-efficacy beliefs involve cognitive judgments an individual makes about competence, proficiency, and the ability to use their knowledge and skills to achieve a goal (Bandura, 1997; Schunk & Pajares, 2005). To assess self-efficacy beliefs, individuals are often asked to rate their degree of confidence relative to a context-specific task or activity (Lee & Bobko, 1994). The term "confidence" is commonly used as a measure of strength relative to self-efficacy beliefs but is limited to strength of the personal judgment only. In other words, the term confidence is not a component of or construct within social-cognitive theory or self-efficacy. It merely acts as a tool to assist in the operational representation of self-efficacy beliefs. Therefore, to accurately assess self-efficacy beliefs, an assertion of capability (self-efficacy belief) is coupled with a measure of confidence (strength) in the context of a specific task (Bandura, 1997).

According to Bandura (2006), self-efficacy scales must be tailored to meet the specific domain of functioning of interest to the research study. Bandura (2006) offered specific guidelines for creating self-efficacy scales that would accurately assess the activity under investigation. The standard methodology for measuring self-efficacy beliefs includes asking an individual to rate the strength of their belief in their ability to perform a task. The task should be

presented to the individual in segmented steps that depict different levels of task demand. For example, items assessing a teacher's "Disciplinary Self-Efficacy" may be presented to the individual using the following three items: "Get children to follow classroom rules", "Control disruptive behavior in the classroom", and "Prevent problem behavior on school grounds" (Bandura, 2006, p. 328).

Further, when assessing self-efficacy beliefs, the individual should be asked to rate his or her confidence level in terms of "can do" not "will do" to ensure that the appropriate construct can be assessed (Bandura, 2006, p. 308). The term *can* implies a *judgment* of capability to perform the activity whereas the term *will* implies *intention* to actually perform the activity. In essence, the judgment (self-efficacy belief) precedes the intention (future performance). Although self-efficacy beliefs are considered to be major determinants of intentional behavioral, the two concepts are vastly different empirically. Therefore, when constructing the scale for assessment of self-efficacy beliefs, Bandura (2006) recommends that the individual should be asked to rate their confidence level on a 100 point scale presented in 10 point intervals. The scale intervals are labeled only at the following anchor points: 0 = Cannot do at all, 50 = Moderately certain can do, and 100 = Highly certain can do. The scale can be presented in a simpler form using single unit intervals ranging from 0-10 with labels at the points, 0, 5, and 10. Scales that are inconsistent with this format and offer the individual "only a few steps should be avoided because they are less sensitive and less reliable" (Bandura, 2006, p. 312).

Relevant Study

Williams and Coles (2007) conducted a study within the United Kingdom (UK) to investigate teachers' usage of educational research from an information literacy perspective.

Their study sought to understand how teachers feel about educational research, their ability to find and use research information, and the judgments they make about information that may impact evidence-based practices. The researchers used a combination of stratified random sampling and cluster sampling to distribute paper-based questionnaires to 3,500 primary and secondary teachers, head teachers, nursery school teachers, and special needs teachers in Scotland, England, and Wales. Although the questionnaires for teachers and head teachers differed slightly, they contained the same three broad areas under investigation: attitude, access, and information literacy. The response rate for the questionnaires completed by the teachers was reported as 10.9% (N = 312). The low response rate was attributed to several factors including research fatigue and the use of indirect teacher access (e.g., dependence on school level administration to distribute and collect instrument). Additionally, Williams and Coles reported that due to the low response rate, the results of the study should be interpreted with caution because of the possible bias toward participants who were predisposed to the use of research information or more motivated to participate within the research study.

Teachers' strategies and confidence levels were explored relative to their ability to find, evaluate, and use general information as well as research information. Williams and Coles' (2007) findings emphasized the important issue of information literacy skills and its relationship within the context of evidence-based practices. The teachers reported lower confidence levels associated with all of the information literacy skills involved in finding and using *research* information in contrast with the same skills associated with finding and using *general* information (see Table 2). Embedded within these results, teachers were less confident in the skills necessary for *using* research or general information than they were for *finding* either type of information.

Table 2: *Teachers' Confidence Ratings: Percentage Reporting Confident or Very Confident*

Skill	General information	Research information
Identifying and defining information need	91.9%	67.1%
Locating information	88.9%	60.9%
Evaluating and selecting information	85%	59%
Organizing and synthesizing information	81.1%	56.3%
Communicating and presenting information	79.3%	57.5%

Note. Adapted from "Teachers' Approaches to Finding and Using Research Evidence: An Information Literacy Perspective" by D. Williams and L. Coles, 2007, *Educational Research, 49*(2), Figure 2, p. 194.

Additionally, UK teachers who reported experience and involvement within previous research as well as a positive attitude toward research information were generally more confident in their abilities to manipulate research information (Williams & Coles, 2007). Teachers' subject areas also appeared to have some influence over the reported confidence levels relative to information literacy. Math teachers had a tendency to be less confident than teachers of social and economic subject areas and teachers of creative subject areas were less confident than language teachers. Male teachers appeared to be more confident than their female counterparts in their information literacy skills related to seeking and using *general* information but no statistical differences were found relative to finding and using *research* information (Williams & Coles, 2007).

Although Williams and Coles (2007) gathered data related to teacher confidence levels within the context of information literacy, the results may or may not be considered within the specific context of self-efficacy due to the properties of the instrument design. The questionnaire used by Williams and Coles (2007) asked the participants to respond to the stem question: "How confident would you say you are in each of these steps for a) general information seeking, and b) finding research" using a multiple choice format of four boxes labeled "Very Confident", "Confident", "Not Confident", and "No Experience" (Williams & Coles, 2003, p. 83). The information cycle steps were listed and separated further into general and research informational needs. Additionally, an associated section of the questionnaire asked participants to respond to the stem question: "How confident are you in finding information for each of the following purposes?" and used the aforementioned multiple choice format with the same labels (Williams & Coles, 2003, p. 83). Therefore, according to the specific instrumentation guidelines set forth by Bandura (2006), the scale used by Williams and Coles (2007) may be inadequate in providing the appropriate level of sensitivity and reliability necessary for identifying the strength of self-efficacy beliefs. Consequently, careful consideration was used in applying the principles of the self-efficacy theory to the appropriate sections of the instrument for use in *this* investigation so that the construct under assessment would be clearly defined as self-efficacy.

Summary

The degree to which individuals feel confident that they can perform the steps necessary to acquire research information, understand the information they find, and be able to use that information in a positive way to impact their professional practice in the classroom are the essential connections between self-efficacy, information literacy, and evidence-based practices within the conceptual framework presented in Chapter One (see Figure 1, p. 5). Research about educational research suggests that the more experience an individual has, whether by reading an article, participating in research studies, or through coursework, with educational research, the more positively they will feel about it (Miretzky, 2007; Williams & Coles, 2007). Additionally, research in the area of self-efficacy suggests that experience in an activity in which an individual experiences positive outcomes can lead to higher degrees of confidence related to that activity (Bandura, 1997). The idea that experiences positively contribute to self-efficacy beliefs appear consistent with the findings presented by Williams and Coles (2007). Teachers who reported previous experience and involvement with educational research were generally more confident about their skills in using research information.

As confidence increases, positive self-efficacy beliefs develop regarding this activity and individuals become more intrinsically motivated to engage with the task, more cognitively invested with the activity, and will choose to perform the activity independently when necessary (Bandura, 1997; Schunk & Pajares, 2005). Therefore, the degree of self-efficacy individuals have regarding their ability to perform the elements of information literacy, is an area worthy of research. This study seeks to provide an exploration of the factors that may influence that interaction and to do so from a self-efficacy and information literacy perspective.

Research Questions

Although the literature is rich with studies about the individual topics of educational research, evidence-based practices, self-efficacy beliefs, and information literacy, research considering these concepts together has not been conducted. Williams and Coles (2007) began the investigation of information literacy as one component that may impact educational professionals' interactions with educational research information. Additionally, they investigated teachers' views of research information, sources of information, perceived barriers to research information, and confidence ratings specific to information literacy. However, Williams and Coles (2007) did not place an emphasis on confidence as a measure of self-efficacy beliefs nor how those beliefs could be influential in teachers' perceptions of and interaction with educational research information.

Due to the increased prominence of legislative mandates, increasingly diverse public schools, and influx of educational initiatives aimed at inclusive educational services for students with disabilities, special education professionals could hold valuable views regarding educational research and their belief systems relative to information literacy. Understanding special education professionals' belief systems in the area of information literacy and how those beliefs may impact perceptions of research information, interaction with research information, and subsequent evidence-based practices could be essential in providing insight into the research-practice divide in education. Therefore this study will investigate the following research questions:

1. What are Special Educators' general perceptions of educational research?

2. What do Special Educators perceive as barriers to their use of educational research?

3. What are typical sources of educational research information for Special Educators?

4. Are there differences in self-efficacy ratings for Special Educators between finding general information and research information?

5. Are there differences in self-efficacy ratings for Special Educators between the specific steps of information literacy skills?

Chapter Three: Method

The major purpose of this study was to examine specific variables (e.g., perceptions of educational research, self-efficacy in information literacy) that may impact special education professionals' interaction with educational research information. These variables are of great consequence to the modern educator as their influence, collectively or exclusively, may impact the professionals' use of evidence-based practices in the classroom. The variables under investigation in this study were the general perceptions that special educators have about educational research and their self-efficacy beliefs in the skills necessary for accessing and using research information to inform their practice (i.e., information literacy skills). Additionally, the perceived barriers to educational research and typical informational sources were considered important variables for this study. Therefore, the investigation was developed in pursuit of extending the existing literature regarding the elements influencing the use of evidence-based practices in modern classrooms.

Participants

The target population for this study included Special Education professionals within the Commonwealth of Virginia who were employed in public school systems. This population incorporated any professional position typically employed within the Special Education Department who provides services for students with disabilities, including but not limited to, Special Education teachers, Physical Therapists, Occupational Therapists, Reading Specialists, Title-1 teachers, and Speech-Language personnel.

Participants were recruited via an email inquiry using the "Directory of Local Special Education Directors", a publicly available database of contact information for Special Education

Directors across the Commonwealth of Virginia (see

http://www.doe.virginia.gov/VDOE/Instruction/Sped/leadir.pdf). The researcher sent an initial

email to the Director of Special Education for each of the 132 public school districts within the

Commonwealth of Virginia; entities that were designated as state operated and/or supported

schools, centers, or districts were not included. These 132 Special Education Directors represent

every public school district within the Commonwealth of Virginia. The Director of Special

Education for the districts was chosen as the initial contact person because this is the individual

who has email access to the above described target population (e.g., Special Education teachers,

Speech-Language personnel, Reading Specialists, etc.). Due to the varying structural

compositions of Special Education departments in general and to ease the effort required by the

Special Education Director, an exhaustive list of specific positions or titles were not specified to

be included or excluded (e.g., paraprofessionals were not specifically targeted for this study).

Rather, specific demographic data was collected from the participants to ensure the target

population was maintained and the results were filtered and analyzed accordingly.

The initial email included a short description of the researcher, the purpose of the study,

and the design of the study (see Appendix A). A copy of the Virginia Tech Internal Review

Board Approval Letter and a copy of the survey instrument were attached to the initial email

inquiry. This email requested the assistance of the Director of Special Education in recruiting

participants for the study through the district's email system. The researcher requested that the

Director agree to forward an email, provided by the researcher, which contained the online

survey instrument web link to their districts' Special Education personnel. A wide variety of

follow-up email correspondences occurred between the school districts and the researcher

depending on the specific policies in place regarding the district's participation in research

studies. For example, some districts requested additional documentation, such as a more formal correspondence requesting participation (i.e., a formal letter on Virginia Tech letterhead that was hand signed by the researcher), while others had specific forms for completion and review by the district's School Board.

Upon confirmation from the Special Education Director that he or she was willing and able to forward the information to their personnel, an email containing a short introduction to and description of the study as well as the survey instrument's web link (as a hyperlink) was sent to the Director to be forwarded to all of the district's Special Education personnel (see Appendix B). Additionally, the researcher inquired as to the specific number of Special Education professionals that would receive the email containing the survey link in that district.

If no response was received from a Director after seven days had elapsed from the initial inquiry email, the initial email inquiry and materials were resent. If another seven days elapsed from the time of the second inquiry email, the researcher called the Director and inquired as to the status of the district's decision. In the event that the Director of Special Education declined to assist in the distribution of the survey link, the researcher did not communicate with that school district any further.

Instrument

Development

Dorothy Williams, the designated corresponding author for a comparable study in the United Kingdom (Williams & Coles, 2007), granted written permission for the researcher to use the questionnaire used within that investigation as a foundation for the instrument within this study. Neither the Williams and Coles' 2007 article nor the full report of the study (Williams &

Coles, 2003) reported any measure of reliability estimates for this instrument and numerous requests to the author for this information were unanswered.

The paper-based questionnaire was initially reviewed by the researcher and several changes were made to meet the needs of this particular study as well as to provide terminology common to the United States versus the words and phrases common to the United Kingdom (U.K.). Some examples of syntax changes included "Headteacher" was changed to "Department leader or chairperson" and "Local Authority Education Advisor" was changed to "Special Education Director, Coordinator, and/or administrative team." The instrument was further tailored to include the specific components that were most relevant to the target population used within the study, Special Education professionals. One example of the modifications made to the instrument to provide items applicable to Special Education personnel included changing the following phrase from "General background reading on subject area" to "General information on a specific disability"(see Appendix C for a detailed comparison of the two instruments).

It is important to note that the researcher purposively maintained a broad approach to the content of the instrument items that directly mention special education activities or professional areas. Due to the wide variety of sub-fields and specialties that compose the field of special education, specificity may have narrowed the scope to the point of exclusion of some special education practitioners. Therefore, in an effort to include all possible areas of expertise, the researcher maintained a relevant but practically universal content design related to the profession of special education.

Items within the questionnaire that measured confidence ratings for Williams and Coles' (2007) study were modified to meet the criteria for adequate assessment of self-efficacy beliefs as well as to meet the specific context of interest to this study (Bandura, 2006). Sections 5 and 6

of the survey instrument, Finding Information and Information Cycle, were designed to assess

self-efficacy beliefs in the context of information literacy. Participants are asked to respond to

statements by rating their confidence level associated with a specific task on an 11 point Likert

type scale (see Bandura, 2006) with descriptors at 0 (Cannot do at all), 5 (Moderately can do),

and 10 (Highly certain can do). Corresponding value labels are shown (i.e., the numbers 0, 1, 2,

3, 4, 5, 6, 7, 8, 9, and 10) on the response scale.

Description

The survey instrument was designed to measure variables that may influence educators'

interaction with and use of educational research information. The survey took approximately 15-

20 minutes to complete and contained nine major sections with 106 total items, including the 19

items gathering demographic and professional data (see Appendix D).

The nine sections were divided as follows:

1. *Welcome*: This section of the survey introduced the study to the participants,

   identified the researchers, and offered implied consent information to participate in

   the research study.

2. *Involvement with Educational Research* (Items 2.1 – 2.6 for a total of 6 items

   including 2 items for qualitative responses if appropriate): This section of the survey

   addressed the participants' prior experience with research studies and current

   interaction with educational research information. Participants were asked to respond

   to questions using a drop-down menu of answer choices. Answer choices varied per

   question.

3. *Perceptions of Educational Research* (Items 3.1 – 3.12 for a total of 12 items): This section of the survey addressed the participants' general perceptions about educational research to include professional utility. Participants were asked to respond to statements on a 6 point Likert-type scale with anchors Strongly Disagree (1) and Strongly Agree (6). Corresponding value labels (i.e., the numbers 1, 2, 3, 4, 5, and 6) were not shown on the scale.

4. *Barriers to the Use of Educational Research* (Items 4.1 – 4.31 for a total of 31 items including 1 item for a qualitative response if appropriate): This section of the survey addressed the participants' perceived barriers that inhibit their use of educational research. Participants were asked to respond to statements on a 6 point Likert-type scale with anchors Strongly Disagree (1) and Strongly Agree (6). Corresponding value labels were not shown on the scale.

5. *Finding Information* (Items 5.1 – 5.12 for a total of 12 items): This section of the survey addressed the participants' degree of self-efficacy related to finding information within the field of special education. Participants were asked respond to statements by rating their confidence level associated with a specific task on an 11 point Likert type scale with anchors 0 (Cannot do at all), 5 (Moderately can do), and 10 (Highly certain can do). Corresponding value labels were shown (i.e., the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10) on the scale.

6. *Information Cycle* (Items 6.1 – 6.6 for a total of 6 items): This section of the survey addressed the participants' degree of self-efficacy related to the individual steps associated with information literacy skills. Participants were asked respond to statements by rating their confidence level associated with a specific task on an 11

point Likert type scale with anchors 0 (Cannot do at all), 5 (Moderately can do), and 10 (Highly certain can do). Corresponding value labels were shown (i.e., the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10) on the scale.

7. *Sources of Research Information* (Items 7.1 – 7.20 for a total of 20 items including 1 item for a qualitative response if appropriate): This section of the survey addressed the participants' frequency of contact with and typical sources of research information. The participants were asked to respond to statements on a 5 point Likert type scale labeled Never, Yearly, Monthly, Weekly, and Daily. Corresponding value labels were not shown on the scale.

8. *Professional Information* (Items 8.1 – 8.19 for a total of 19 items including 6 items for qualitative responses if appropriate): This section of the survey addressed that participants' general demographic and professional information. Participants were asked to respond to questions primarily using a drop-down menu of answer choices. Answer choices varied per question. Participants were asked to respond to one open-ended item by typing their answer into a text box.

9. *Thank You*: This section of the survey thanked participants for their participation in the study (see Appendix E for complete Table of Specifications).

Procedure

After reformatting, the survey was reviewed by two independent experts in the field of educational psychology who were asked to assess the instrument for content validity. Further, the instrument was reviewed by two independent experts in the field of methodological design to address survey instrumentation. The instrument was revised based on their input and the

instrument was pilot tested with a small group of graduate students in the field of education. The feedback received from all individuals resulted in many modifications to the initial instrument to include regrouping questions, more detailed instructions, and reformatting the answer scales.

Upon completion of the pre-study, pilot testing, and subsequent revisions, the survey instrument was placed into an online data collection system. The online data collection source for this survey, Survey Monkey™, is equipped with secure networking capabilities called SSL (Secure Sockets Layer) encryption. SSL encryption is a cryptographic system that ensures a secure connection between a client and a server. Additionally, the online data collection source was programmed not to collect Internet Protocol (IP) addresses from participants completing the survey in order to foster anonymity.

Once the Special Education Directors sent the email containing the survey link to their districts' Special Education personnel, the email recipients chose whether they would like to participate in the study. The hyperlink (URL) contained within that email took the participants to the Welcome page of the survey. This page detailed information about the researchers, the research study, and the potential risks and benefits of participation within the study. The participants were instructed on this first page that their consent to participate was implied by their continuation to complete the survey. The first page further emphasized to the participants that the survey was completely anonymous, no personally identifiable information was requested or collected during any process of the survey completion, and that the participant could have chosen to stop participating in the study at any time by exiting the survey. There was no incentive offered to participants for survey completion.

As the participant completed each section of the survey, the online system directed the participant to the next section of the survey. If the participant failed to complete a question on the

survey, an error message stating "This question requires an answer." appeared on the screen. Participants were able to move back and forth between pages of the instrument while within the online system. Upon completion of the survey, a "Thank you" page appeared thanking the participants for their participation within the study.

Analysis

The instrument was assessed for its psychometric properties of reliability. Internal consistency was used as a measure of reliability with a Cronbach's alpha reliability coefficients as the reporting criteria.

The first research question, "What are Special Educators' general perceptions of educational research?" was analyzed using descriptive statistics (e.g., means and standard deviations) and inferential statistics (e.g., t-tests). The corresponding survey items, 3.1 - 3.12, addressed this research question.

The second research question, "What do Special Educators perceive as barriers to their use of educational research?" was analyzed using descriptive statistics (e.g., means and standard deviations) and inferential statistics (e.g., t-tests). The corresponding survey items, 4.1 - 4.30, addressed this research question.

The third research question, "What are typical sources of educational research information for Special Educators?" was analyzed using descriptive statistics (e.g., means and standard deviations). The corresponding survey items, 7.1 - 7.19, addressed this research question.

The fourth research question, "Are there differences in self-efficacy ratings for Special Educators between finding general information and research information?" was analyzed using

descriptive (e.g., means and standard deviations) and inferential statistics (e.g., t-tests). The corresponding survey items, 5.1 - 5.12, addressed this research question. Survey items 5.1, 5.3, 5.5, 5.7, 5.9, and 5.11 were averaged to serve as the "General Information" score for the participants. Survey items 5.2, 5.4, 5.6, 5.8, 5.10, and 5.12 were averaged to serve as the "Research Information" score for the participants. These two score sets were compared by using a matched pairs, two-tailed t-test.

The fifth research question, "Are there differences in self-efficacy ratings for Special Educators between the specific steps of information literacy skills?" was analyzed using a within subjects one-way Analysis of Variance (ANOVA) with pairwise comparisons. The corresponding survey items, 6.1 – 6.6, addressed this research question.

Although Section 2 of the survey instrument contained items related to the participants' past and current interaction with educational research, this data was not analyzed in response to a research question. Also, Section 8 of the survey instrument contained items related to participants' demographic information and therefore, was not utilized to answer a research question.

Chapter Four: Results

The invitation to participate in the research study was sent via email to the Director of the

Special Education Department of the 132 public school districts in the Commonwealth of

Virginia. The survey instrument was available for completion for nine weeks (69 days) during

the spring academic semester of 2008. The 14 districts who participated in the study represent

9.4% of all public school districts located in the Commonwealth of Virginia. One hundred

seventy-seven respondents entered the instrument area and answered at least one question.

However, 47 of the respondents did not complete all sections within the survey instrument

resulting in an attrition rate of 26.56%. In contrast, 130 participants completed all sections within

the survey instrument for a completion rate of 73.44%. Subsequently, the data presented within

the following analyses and reports reflect a filtered database to include only the 130 respondents

for whom complete data was available.

Reliability

Although the survey instrument consisted of nine sections with 106 possible items

(some items were only applicable if the participant chose to give a follow-up answer, needed to

provide a qualitative response for clarification purposes), only four sections contained data

relative to the instruments' reliability. The following sections were used to calculate the survey

instruments' reliability: (1) Section 3: Perceptions of Educational Research ($\alpha = 0.80$), (2)

Section 4: Barriers to the Use of Educational Research ($\alpha = 0.93$), (3) Section 5: Finding

Information (General $\alpha = 0.94$, Research $\alpha = 0.93$), and (4) Section 6: Information Cycle ($\alpha =$

0.97). Overall, Cronbach's alpha across all four sections revealed a reliability estimate of α = 0.96 for the survey instrument.

Demographics

One-hundred and thirty participants completed the entire survey. The majority of the participants, 94.6%, were female and described their role within the Special Education department as that of a Special Education Teacher (93.8%). Participants' ages were fairly evenly distributed with the largest grouping in the range of 41 – 50 years of age (32.3%). Most of the participants, 56.2%, hold a Master's degree while 35.4% hold a Bachelor's degree.

When asked about years of experience, the participants reported a fairly evenly distributed timeframe with 6 – 10 years of experience receiving the highest percentage of responses at 27.7%. Further, the participants were queried regarding their previous involvement with educational research studies as well as whether or not they provide evidence-based practices in their classrooms. Although the majority of the participants (62.3%) denied any previous experience with research, 91.5% of the participants reported providing evidence-based practices in the classroom.

The majority of the participants (37.7%) reported working with elementary school students in a rural school district. Further, school enrollment numbers were fairly evenly distributed amongst participants with 39.2% teaching at a school with 401 – 700 students. Table 3 provides a complete account of the participants' demographic characteristics.

Table 3: *Special Educators' Demographic Characteristics (n = 130)*

Participant Demographics: Percent of Total Sample

Age (years)		%	Education		%
	20 – 30	10.8		Less than a Bachelor's	0.0
	31 – 40	29.2		Bachelors	35.4
	41 – 50	32.3		Master's	56.2
	51 – 60	23.8		Educational Specialist	4.6
	60 +	3.8		Doctoral	3.8
Gender			Role		
	Male	5.4		Special Ed. Teacher	93.8
	Female	94.6		Speech Therapy	4.6
				Reading Specialist	1.5
				Physical Therapy	0
Experience (years)				Occupational Therapy	0
	1- 5	18.5		English as a Second Language (ESL)	0
	6 – 10	27.7		Gifted Education	0
	10 – 15	18.5		Title I	0
	15 – 20	9.2			
	20 +	26.2			

School Demographics: Percent of Total Sample

Size		%	Students Served		%
	101 - 400	31.5		Preschool	2.3
	401 - 700	39.2		Elementary	37.7
	701 – 1,000	16.2		Middle	18.5
	1,001 – 2,000	12.3		High	26.2
	2,000 +	0.8		Combination of Levels	15.4
Location					
	Urban	6.2			
	Suburban	43			
	Rural	50.8			

Educational Research

General Perceptions

The first research question concerned the overall perception of educational research: "What are the Special Educators' general perceptions of educational research?" Section 3 of the survey instrument, specifically items 3.1 – 3.12, addressed this research question. Participants were asked to respond to stem statements using a 6 point Likert-type scale (1 = Strongly Disagree, 6 = Strongly Agree). The participants' score represents a numerical position interpreted as follows: the higher the score, the more positive the perception regarding the stem statement, and the lower the score, the more negative the perception regarding the stem statement. Four items were reverse-scored; therefore, the items for which scores were reversed also reflect the aforementioned interpretive standpoint (i.e., higher scores suggest a more positive perception whereas lower scores suggest a more negative perception).

The stem statements represented 12 viewpoints related to educational research such as relevance to professional practice, evidence-based practice, the necessity of research information, etc. These items were analyzed using descriptive statistics (e.g., means and standard deviations). A two-tailed t-test was used to determine if the mean scores for the items reflected a statistically significant distance from the mean of 3.5. In order to control for Type I error and to maintain a family-wise $\alpha = 0.05$, the Bonferroni procedure was used ($\alpha = 0.05/12$) resulting in a per comparison $\alpha = 0.004$.

Participants most positively identified with the viewpoint, "Research is valuable for improving student achievement" (see Table 4). Statistical significance was also indicated for seven additional viewpoints regarding educational research including statements that involved career progression, making more use of research, and improving teaching quality. Further,

professional development and the connections between research information and classroom

issues were acknowledged as positive contributions derived from educational research. Overall,

participants appeared to value educational research and believe that it served a wide variety of

positive purposes for their students as well as for their professional practice.

Table 4: *Special Educators' Perceptions of Educational Research (n = 130)*

Perceptions	M	SD
Research is valuable for improving student achievement.	4.79*	0.85
Being up-to-date with research aids in my career progression.	4.67*	1.05
I would like to make more use of research.	4.66*	0.96
Research is valuable in improving my teaching quality.	4.63*	0.92
Research can help solve classroom and/or student specific problems.	4.63*	0.98
Keeping up-to-date with current research is an essential part of my professional development.	4.59*	0.98
Much of the research I read or hear of bears no relation to classroom practice. [a]	3.92*	1.11
Most research is relevant to my teaching.	3.85*	0.99
There is not enough emphasis placed on evidence-based practice in teaching.	3.77	1.23
Research is conducted by academics with no grounding in the real issues of teaching. [a]	3.63	1.20
I feel alienated by the language of research. [a]	3.57	1.16
Research is not written for classroom teachers. [a]	3.53	1.27

Note. Refers to items 3.1 – 3.12; scores reflect responses to a 6 point scale (1 = Strongly Disagree, 6 = Strongly Agree). Hypothesized test means were calculated at 3.5 to determine significance.
[a] Reverse-scored item.
* $p < 0.004$

Barriers

The second research question involved perceived barriers to educational research: "What do Special Educators perceive as barriers to their use of educational research?" Section 4 of the survey instrument, specifically items 4.1 – 4.30, addressed this research question. Participants were asked to respond to stem statements using a 6 point Likert-type scale (1 = Strongly Disagree, 6 = Strongly Agree). As the participants chose an answer, that number represented a position on the scale that was interpreted as follows: the lower the number, the more negative the indication regarding the topic in the stem statement (i.e., barrier to a greater degree), and the higher the number, the more positive the indication relative to the topic contained in the stem statement (i.e., barrier to a lesser degree). Therefore, the topics in the stem statements that received the lowest mean scores were identified by the participants as the topics that present the greatest barriers to their use of educational research.

The stem statements queried participants about topics related to the use of educational research. These items were analyzed using descriptive statistics (e.g., means and standard deviations). A one-tailed t-test was used to determine if the mean scores for the items reflected a statistically significant distance below the mean. A one-tailed t-test was used with directionality because the lower the mean score, the greater the degree to which the participant perceived that topic to present as a barrier to his or her use of educational research. In order to control for Type I error and to maintain a family-wise $\alpha = 0.05$, the Bonferroni procedure was used ($\alpha = 0.05/30$) resulting in a per comparison $\alpha = 0.0016$.

Six topics were identified as having statistically significant scores below the mean (see Table 5). "Relevant research is compiled in one place" was the topic with the lowest mean score and therefore, was reported by the participants as the topic perceived to present the greatest

barrier to the use of educational research. The following topics were also identified as statistically significant barriers to the participants: "The amount of research available is easily manageable," "I have time to find and read research," "Research is reported in a clear and readable format," "The school library provides access to research information," and "Implications for practice are made clear." In general, the results indicated that issues such as problems with access to research information, difficulties with information management, and lack of time appeared to inhibit the use of educational research by the participants.

Sources

The third research question related to the use of a variety of educational research resources: "What are typical sources of educational resource information for Special Educators?" Section 7 of the survey instrument, specifically items 7.1 – 7.19, addressed this research question. Participants were asked to respond to stem statements which represented different resources that could contain educational research information. These items were analyzed using descriptive statistics and reported as a percentage.

Most of the participants identified their district or schools' in-service program and popular search engines, such as Yahoo and Google, as a source of educational research information. Both "Informal discussions with colleagues" and "Professional magazines or newspapers" were also cited very frequently by the participants as were veteran teachers and professional conferences. Figure 2 provides an illustration of each source with the percentage of participants for whom that source was one used to access educational research information. Generally speaking, the participants reported using the listed sources of at least half of the time as a source of research information.

Table 5: *Possible Barriers to the Use of Educational Research*

Barrier	Number	M	SD
Relevant research is compiled in one place.	130	2.45[*]	0.97
The amount of research available is easily manageable.	129	2.52[*]	1.06
I have time to find and read research.	128	2.85[*]	1.26
Research is reported in a clear and readable format.	129	2.86[*]	1.03
The school library provides access to research information.	130	3.10[*]	1.43
Implications for practice are made clear.	128	3.20[*]	1.04
I have time to make changes to my teaching practice as a result of research information.	130	3.20	1.13
I find it easy to decipher research findings amid the technical nature and/or jargon used in the reports/articles.	130	3.22	1.22
I have the opportunity to discuss research with knowledgeable colleagues.	129	3.33	1.33
Information about the existence of relevant research is available.	130	3.34	1.16
Research reports/articles imply an understanding of the realities of practice.	128	3.43	1.05
Research literature reports consistent results.	129	3.45	0.98
Other libraries nearby provide access to research information.	129	3.65	1.42
Research findings are often expressed in terms of impact on learning.	128	3.67	0.97
It is possible to translate research into action due to support from my district and/or school administration.	130	3.70	1.13

Research reports/articles are published fast enough.	127	3.80	1.00
Research reports/articles are easily available to me.	130	3.85	1.21
Research is often of high quality.	128	3.88	0.95
There is research related to the situations I encounter in my day-to-day teaching.	130	4.03	1.14
Research findings are often applicable to my own classroom setting.	130	4.08	0.98
There is considerable research applicable to the students I teach.	127	4.28	1.14
I see a need to change practice.	128	4.31	0.99
My school administrators encourage research based practice.	130	4.32	1.24
My school district encourages research based practice.	128	4.32	1.18
There would be major benefits of changing practice to reflect research findings.	127	4.33	0.96
It is easy to find research information on the internet.	127	4.36	1.09
Research is relevant to my teaching practice.	130	4.38	0.95
I see the value of research for practice.	130	4.62	0.96
I see how my reading of research could benefit my students.	130	4.64	0.93
I could benefit from reading research.	130	4.68	0.87

Note. Refers to items 4.1 – 4.30; scores reflect responses to a 6 point scale (1 = Strongly Disagree, 6 = Strongly Agree). Hypothesized test means were calculated at 3.5 to determine significance level below the mean.
[*] $p < .0016$
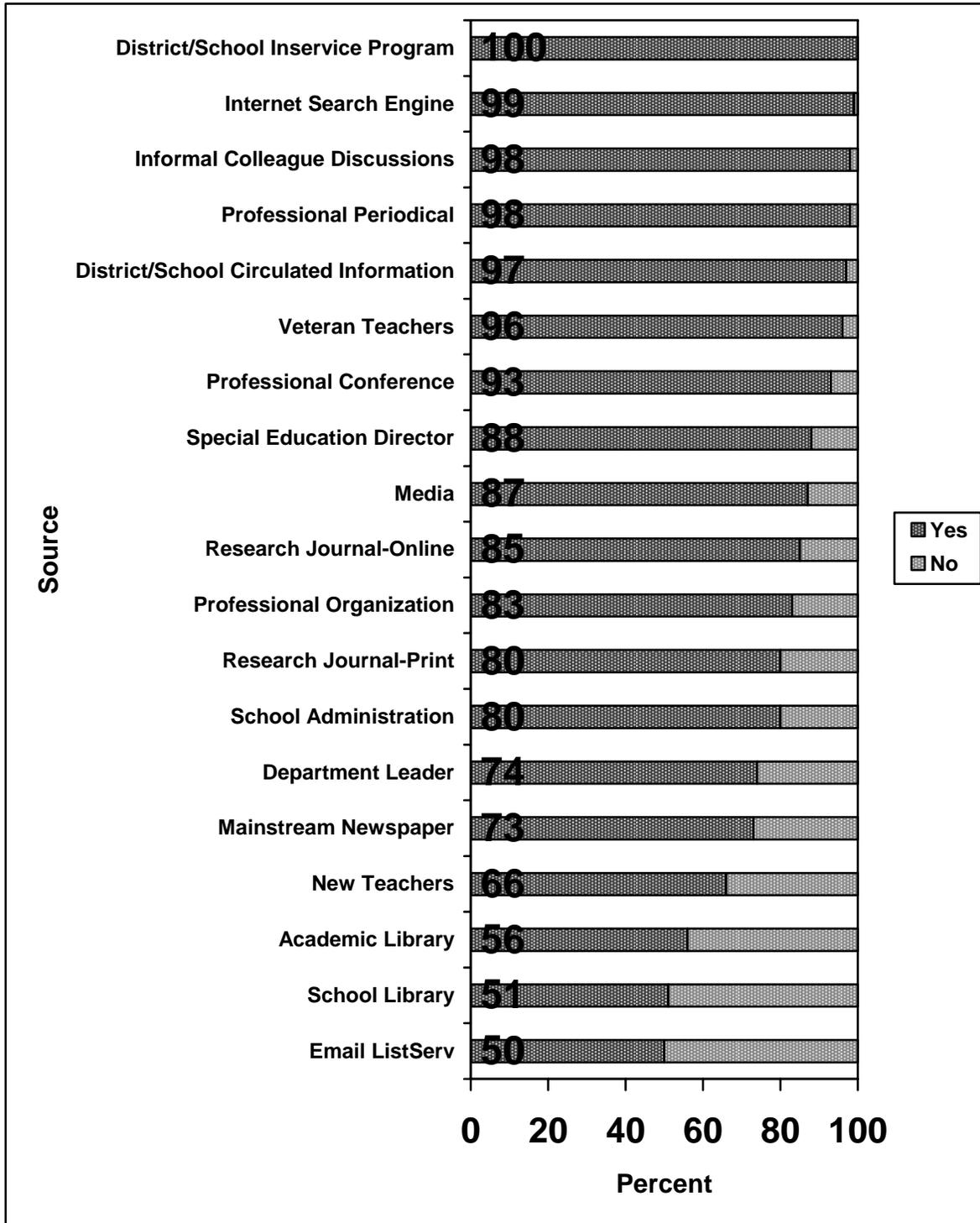
Figure 2: *Sources Used by Special Educators to Access Educational Research (n = 130).*

Self-Efficacy

General versus Research Information

The fourth research question concerned self-efficacy ratings in finding needed information: "Are there differences in self-efficacy ratings for Special Educators between finding general information and research information?" Section 5 of the survey instrument, specifically items 5.1 – 5.12, addressed this research question. Participants were asked to respond to stem statements using an 11 point Likert-type scale (0 = Cannot do at all, 10 = Highly certain can do). The participants' scores represented the degree of confidence they held in their ability to perform the tasks as given in the stem statements.

The directions for this section of the survey instrument included instructing the participants to rate their confidence level associated with "finding" information. All subsequent stem statements were written in a paired manner with one half of the pair directed toward finding general information and the other half of the pair directed toward finding research information. Therefore, participants responded to 6 items addressing general information and 6 items addressing research information.

The odd numbered survey items in this section, 5.1, 5.3, 5.5, 5.7, 5.9, and 5.11, were averaged to serve as the "General Information" score for the participants. The even numbered survey items in this section, 5.2, 5.4, 5.6, 5.8, 5.10, 5.12, were averaged to serve as the "Research Information" score for the participants. These two score sets were analyzed using descriptive statistics (i.e., means, standard deviations) and were compared using a matched pairs, two-tailed t-test to compare the mean score responses between the groups. An alpha criterion of 0.05 was used to determine statistical significance.

The participants reported statistically significantly higher self-efficacy ratings for finding general information ($M = 8.74$, $SD = 2.03$) versus finding research information ($M = 8.31$, $SD = 2.08$), $t(129) = 6.17$, $p = 0.0001$. Results of a Cohen's d effect size analysis, however, indicated a relatively small effect size at $d = 0.20$. Generally speaking, although the participants did report more confidence in finding general information versus research information, the practical application of that difference appears to be relatively small.

Information Literacy

The fifth research question further investigated the concept of self-efficacy and did so within the context of information literacy: "Are there differences in self-efficacy ratings for Special Educators between the specific steps of information literacy skill?" Section 6 of the survey instrument, specifically items 6.1 – 6.6, addressed this research question. Participants were asked to respond to stem statements using an 11 point Likert-type scale (0 = Cannot do at all, 10 = Highly certain can do). The participants' scores represented the degree of confidence they held in their ability to perform the tasks given in the stem statements.

A within-subjects one-way ANOVA with pairwise comparisons was used to analyze the resulting data. An alpha criterion of 0.05 was used to determine statistical significance. There were no statistically significant differences between the steps of the information literacy skills set $F(5, 774) = 1.68$, $p = 0.13$. Results indicated similar mean scores for each step (see Table 6). Therefore, it appears that the participants feel equally as confident in their ability to perform for each step within the information literacy skill set.

Table 6: *Self-Efficacy Ratings of Special Educators: Skills Related to Informational Literacy (n = 130)*

Skills	Mean	Standard Deviation
Identifying and defining research information need	8.05	2.33
Locating, accessing, and managing research information	7.73	2.34
Evaluating and selecting research information	7.73	2.41
Organizing and synthesizing research information	7.64	2.45
Demonstrating and communicating knowledge of the economic, legal, social, and ethical issues surrounding the use of research information	7.26	2.52
Applying research information within your teaching/professional practice	7.93	2.28

Note. Refers to items 6.1 – 6.6; scores reflect responses to an 11 point scale (0 = Cannot do at all, 11 = Highly certain can do).

Chapter 5: Discussion

The main goal of this research was to examine specific variables (e.g., perceptions of educational research, self-efficacy in the context of information literacy skills) that may impact special education professionals' interaction with educational research information. The study used an anonymous, online survey instrument to investigate special educators' views about educational research in general, their perceived barriers to educational research, and the sources they use to access educational research information. In addition, the survey instrument queried the professionals' self-efficacy ratings about finding different types of information and more pointedly, about the specific steps of information literacy skills.

Educational Research

As the emphasis is increasingly being placed on public school teachers to adhere to evidence-based practices while designing classroom interventions, it is certainly encouraging that special education teachers have mainly positive opinions regarding the value of educational research information and its utility for their students and profession. Williams and Coles (2007) reported similar findings in their study with teachers in the United Kingdom. The current study also provides support for previous research findings into the reasons for which teachers access and use research information. Just as Gersten, Vaughn, Deshler, and Schiller (1997) reported a connection between purposeful interaction with educational research information and a teachers' desire to improve learning outcomes for students, this appears to hold true in the current study.

Teachers endorsing the value of educational research for improving student achievement was not surprising because previous research studies have shown this caveat specifically related to special education teachers (Boardman et al, 2005; Gersten, Chard, & Baker, 2000). It appears

as though teachers will commit to and use an evidence-based intervention or strategy in the classroom if and when they can document positive changes in student learning outcomes and achievement (Gersten et al, 1997). Further and not surprisingly, special educators will not continue to use methods that do not work for their students because student needs direct all aspects of their professional responsibilities (Boardman, Arguelles, Vaughn, Hughes, & Klingner, 2005).

The desire to improve their own quality of teaching and career progression were also upheld as reasons to read and use educational research in this study. In conjunction with this line of thinking, professional development and/or inservice programs designed to assist teachers with pedagogical issues which have been scientifically studied would then appear to mesh well with the needs and desires of the teachers. In fact, inservice programming was cited as a source of research information by all of the participants in the current study and relatively large numbers of the teachers in the United Kingdom (Williams & Coles, 2007). Although it is encouraging that teachers are being exposed to research information through such programming at their jobs, it must be taken into consideration that these types of programs tend to be mandated and receive criticisms such as containing gimmicky interventions that are not overtly applicable to the realities of special education teachers (Boardman et al, 2005). Further, even though there is exposure to research information within professional development programs, teachers often report skepticism about the validity of research when it is pre-packaged as professional development and can be subject to manipulation for a profit (Boardman et al, 2005).

Although the current study provides encouraging evidence that refutes a general and pervasive pessimism toward educational research that other studies have cited (Carnine, 1997; Miretzky, 2007; Smylie, 1989; Stanovich & Stanovich, 1997), teachers do report the presence of

barriers to the use of educational research information. Barriers, as they relate to educational

research, should and must be discussed in light of the recent resurgence of the emphasis to

provide research-driven programs for students with disabilities in public schools. Even though

the Office of Special Education Programs (OSEP) didactically made it a priority in the late

1990s, the sustained use of educational research in special education classrooms has undergone

revitalized attention with the No Child Left behind Act of 2001 (Browder & Cooper-Duffy,

2003; Fleischman, 2006; Gersten, Chard, & Baker, 2000; U. S. Department of Education, 2003).

The most prominent barriers involved accessibility of information, the manageability of

the dense information, and the lack of time to adequately make use of the available information.

Fundamentally, these issues present an elemental predicament concerning the provision of

evidence-based practices in that, if teachers cannot readily access and adequately manage

educational research information, how can they be held accountable for its content and

implementation? The topics of access and manageability of information represent important

aspects involved in the more global conversation of educational research such as, the large

volumes of information available and the lack of that information being housed in a central

location, space, or database. The plethora of information available may seem positive on one

hand but it also makes it difficult for practitioners to know how and where to obtain reliable,

peer-reviewed research articles.

Additionally, most teachers in the current study affirmed results from Williams and

Coles' (2007) study that reported their school library lacks access to educational research

information. This on-site hurdle further reduces the chances of purposive interaction with

material derived from scientifically-based studies. Unless a teacher is affiliated with an academic

institution such as a college or university, access to most published research articles that have

been placed under the scrutiny of peer review, require a paid subscription to the journal or a substantial fee for access to an individual article. Therefore, if the school system and associative school libraries do not provide access to educational research, teachers must personally pay for these subscriptions and/or articles.

Prior studies have also cited a wide variety of formatting issues with educational research reports as preemptive barriers to interaction with research information (Browder & Cooper-Duffy, 2003; Burkhardt & Schoenfeld, 2003; Buysse et al, 2003; Miretzky, 2007). A general lack of clear and readable reporting formats and difficulties deciphering classroom implications from the reports were included as barriers within this and other studies (Boardman et al, 2005; Schoonmaker, 2007; Williams & Coles, 2007). The current findings also support the widespread and significant lack of time to seek out, read, and implement research findings that inundates the aforementioned literature as a major barrier to reading educational research and eventual use of evidence-based practices. Thus, special education teachers report feeling the struggle with but inability to "do everything" including find applicable research, read and adapt it for their classroom (Boardman et al, 2005). Plus, special education teachers have the added pressure of finding research materials that can easily be modified to meet the needs of a very diverse group of students with multiple ability levels and academic goals. The additional components of classroom and student complexities add even more time into the "time" barrier.

On a more positive note, unstructured methods such as talking with fellow teachers and performing an internet search provided avenues to find information related to research. Perhaps if given adequate time for planning and collaboration, special education teachers as well as general education teachers could form discussion groups and provide support for one another in the pursuit of research driven activities. In addition, the popularity of the internet as a source of

research information for the teachers provides another opportunity for districts and/or schools to ease the burdens of time and expense as they relate to evidence-based practices. If the teachers are already comfortable and skilled at using this technological pathway for information, then the districts could subscribe to peer-reviewed research journals that are made available to online customers. Therefore, if school districts would provide teachers with sufficient time for finding, reading, and discussing educational research information coupled with on-site access to such materials, some of the perceived barriers may be overcome and their interaction with educational research may increase. Consequently, as the interaction with educational information increases, the chances of evidence-based practices becoming a reality would increases exponentially.

Self-Efficacy

In addition to the aforementioned barriers to the use of educational research information, self-efficacy has been found to be a potential barrier in other studies (Gersten, Chard, & Baker, 2000; Williams & Coles, 2007). Although teacher efficacy has been evidenced in a great number of studies as an important element in student outcomes and commitment to the profession (Gerten, Chard, & Baler, 2000; Gibson & Dembo, 1984; Hoover-Dempsey, Bassler, & Brissie, 1997; Hoy & Woolfolk, 1990), efficacious behaviors as they relate specifically to finding and using educational research information remains an area where the extant literature is lacking. In the current study, teachers felt more efficacious in their pursuits to find information related to their students, classroom, and profession when the information was of a more general nature. Just as was the case with European teachers (Williams & Coles, 2007), when teachers needed to find *research* information that related to classroom, student, or professional needs, they reported less confidence.

This finding is not surprising for several reasons. First, teachers have been seeking new ideas, interventions, and programs through a wide variety of means for many years. As a result, teachers tend to develop adept skills at finding general information to help their students through the means they have available and thereby would be expected to have a high level of confidence in this area. However, when the feature of "research" is added to the search for information, additional and succinct differences are associated with that body of evidence. Scholarly, published research information is held to a higher standard that that of the general information that can be found in many publicly available internet sites, magazines, and other mainstream periodicals. This is not to say that general information is in some way bad or that it never addresses current educational issues in productive ways. General information of this nature just has not always been through the rigors of scientific inquiry using reputable standards and thus, may not provide the level of validity, reliability, and overall applicability that research in the social sciences requires. Therefore, finding research information is a more complex process, resulting in a higher level of difficulty and subsequently decreasing self-efficacy levels.

Further, teachers reported that access to research information posed a barrier to their use of this information. If access to this information is a difficulty, then one could surmise that the teachers have had less experience with the successful pursuit of educational research information. Consequently, the lack of successful experiences with finding and using educational research information may have led to the lesser self-efficacy ratings related to this information. As Bandura (1995) and others have presented in the literature surrounding self-efficacy theory, one of the influential facets that contribute to a person's self-efficacy beliefs are mastery experiences (Schunk, 1991; Schunk & Pajares, 2005).

Just as self-efficacy beliefs can *be* influenced by prior experiences, a person's sense of self-efficacy can *exert* influence over future experiences in the form of motivation, perseverance, goal development, and behavior initiation (Bandura, 1989; Bandura, 1995; Schunk 2003; Schunk & Pajares, 2005). Therefore, when teachers were asked to report self-efficacy ratings in the context of information literacy skills, they were responding to their beliefs that they could perform individual steps that necessitate successful information processing. Encouragingly, the teachers resoundingly reported confidence ratings that were equal amongst the steps within the information processing cycle. This is indeed a positive finding because, as previously mentioned, self-efficacy beliefs can exert crucial influences over future behaviors. And if the teachers feel confident in their ability to perform the steps it would take to make use of educational research information, the likelihood of them initiating the behaviors, persevering in the face of difficulty, and overcoming perceived barriers related to the activity would increase.

Overall, this research found that special education professionals have positive views of the value of educational research information. The barriers that inhibit their use of this educational research, by and large, involve three over-arching themes: time, access, and manageability of information. That said, they do use a wide variety of available sources, both formal and informal, for research information and feel relatively confident in their ability to meet their informational needs; although, they are more confident with general information than with research information.

Limitations

Limitations for the current study include a relatively small sample size. According to the Office of Special Education Programs (OSEP) of the U. S. Department of Education, the Commonwealth of Virginia employed 13,322 teachers in the fall of 2006 to provide special education and related services for students with disabilities aged 6 – 21 under the IDEA (Data Accountability Center, 2008). Therefore, the sample of 130 participants for the current study represents a relatively small number (< 1%) of the total special education professionals within the commonwealth. In addition, there was no avenue for calculating the response rate because although attempts were made to collect the number of recipients of the invitation email, some districts did not respond to the request for this information.

Also, the current study was conducted during the last portion of the spring semester of the academic year. For public school teachers, especially special education professionals, this time of the academic year tends to be a very busy one. State testing, exams, and meetings to develop individualized education plans often fill the days of many teachers. Therefore, the time needed to complete the survey instrument may have exceeded the time the teachers had at their disposal and reduced the number of total participants in the study and could also have contributed to the attrition of 47 of the respondents.

In hindsight, the opening of the survey instrument did not present as positively persuasive as it could in that, it could have provided more reasoning behind the need to understand teachers' perceptions of educational research and their confidence levels associated with that body of evidence. Considering the opening page of the instrument served as the gateway for the participants, it should have been more inviting and truly made the case for the value of the participants' input.

Additionally, the number of items contained within the instrument could have been intimidating for the participants and/or served to contribute to survey fatigue. Considering teachers have little time in which to complete their long to-do lists, it may have been better to have the survey split into several shorter surveys or an overall reduced number of items.

Although reducing the total number of survey items may have been helpful in reducing attrition, one section of the survey may have been enhanced if it actually contained additional items. Section 6 of the survey instrument may have provided more in-depth information if the items had been split into more specific types of tasks. For instance, item 6.2 contains three actions; locating, accessing, and managing. With more than one task involved, the participant may have been responding to only one of the behaviors rather than the contextual action of the item overall.

Lastly, there were a wide variety of policies in place within the public school districts regarding the distribution of the survey instrument link to participants. Some districts had a very simple process and others had a quite complex and time-consuming process. In some instances, the materials must be submitted to the district's board of supervisors at a minimum of 90 days or up to one year in advance in order for consideration. Further, some districts stated that participation in research study was limited to projects with a direct benefit for their district personnel and/or students. Therefore, due to time, funding, and personnel constraints, the researcher was unable to adequately expend all possible avenues for participation by willing districts for the current study.

Future Directions

The current study provides a platform for which the conversation regarding the use of

educational research information in the provision of evidence-based practices in public school classrooms can continue to expand. Inservice education professionals, particularly those within the special education department, have emergent issues on the forefront of their practice to implement data-driven programs. Copious federal, state, and local legislative bodies and policies mention evidence-based practices; many grants and their subsequent funding mandate evidence of programs derived from educational research. Consequently, the teachers who will implement the scientifically-based programs must be afforded the opportunity to interact with educational research information or the endeavors of researchers to investigate classroom, learning, and pedagogical issues may be for naught. Therefore, it is topic worthy of continued exploration and attention.

Future studies with larger samples need to be performed after revisions to the current instrument have been made such as the inclusion of an item for race/ethnicity and a decrease in the total number of survey items. Further, some minor wording changes are needed within the opening of the survey that may help to compel participants to not only participate, but to complete all pages of the survey and reduce survey attrition. The survey also needs to be distributed among a broader audience to include subject-based public school personnel such as the inclusion of teachers within the mathematics, social studies, and language arts, science areas. A comparison of the different subject-specific areas may reveal variations beyond the scope of this study.

The academic year of the public school system also needs to receive more consideration when designing future studies. The current study was conducted during the spring semester when educators tend to be most busy with end-of-course testing, exams, and other administrative duties relative to classroom management. In conjunction with this particular facet, future studies

may be enhanced considerably if focus groups and other forms of qualitative data gathering were implemented to enhance the results of the quantitative nature of the survey instrument.

For future investigations within the conceptual framework of this study, self-efficacy in the context of information literacy and as it relates to educational research, an additional component specifically related to information literacy skills would significantly enhance the findings. For example, upon completion of the survey instrument addressing self-efficacy in the context of information literacy skills, the participants could then be directed to complete an interactive computer-based trial that actually provides a measure of those skills (e.g., ETS' iSkills assessment). This exercise could extend the research related to self-efficacy in the context of information literacy and open the door for the development of supplemental professional development programs that specifically target the skills necessary for the efficient, efficacious, and constructive management of educational research information management.

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Appendix A: Script for Initial Contact Email

Email Subject:

Research Study at Virginia Tech

Email Content:

I am a PhD student in the Educational Psychology Program at Virginia Polytechnic & State University. However, prior to beginning this endeavor I was a Special Education teacher for 6 years in Virginia. I am interested in studying Special Education Professionals' use of educational research (evidence-based practices). I am currently conducting a research project that involves an online, anonymous survey asking SPED professionals about their use of educational research, potential barriers to that use, and confidence levels related to finding and using research information.

My question to you: would it be possible for you to forward the link for the online survey through your email system or ListServ of Special Education teachers/professionals to recruit participants? Please understand that I do NOT want your departments' email addresses. Upon your approval, I would send you an email that includes a brief description of the study and an invitation link (URL with a hyperlink) to participate within the study. You could then forward this email to all of the Special Education teachers/professionals within your district. The individuals could then decide whether or not they would like to participate in the study and complete the online survey.

This survey is anonymous. No personally identifiable information is requested or collected from participants at any point during this process. Additionally, no districts will be named in connection with the data provided in any reporting of the results from the project. The IRB approval certificate and a copy of the survey instrument are attached to this email to assist you in determining approval. However, please do not allow any potential participants to access this instrument at this time. Also, please keep in mind that the attached survey has been created from an online source and therefore the formatting is inconsistent with how it appears on the actual survey. The reformatting process often makes the survey appear more extensive than the actual survey. During pilot testing, the participants averaged less than 15 minutes to complete the online survey.

I would like to begin the data collection process as soon as possible so that it may be concluded by the end of this academic year. If there are additional materials needed in order to provide adequate information for approval, please let me know and I will be glad to accommodate your request.

Dr. Peter Doolittle, is my committee chairperson. His contact information is as follows:
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My personal contact information is as follows:
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Cell: (276) 920-4653 (Preferred phone)
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Please do not hesitate to contact either of us for any additional information. Thank you so much and I look forward to hearing from you soon!

Appendix B: Script for Email Containing Survey Link

Email Subject: Virginia Tech Research Study Link

Email Content:
Hello!

I am a PhD student in the Educational Psychology Program at Virginia Polytechnic & State University. However, prior to beginning this endeavor I was a Special Education teacher in Virginia for 6 years. I am interested in studying Special Education Professionals' use of educational research. I am currently conducting a research study that involves an online, anonymous survey asking Special Education Professionals about their use of educational research, potential barriers to that use, and confidence levels related to finding and using research information. This survey takes less than 15 minutes to complete.

Keep in mind that no personally identifiable information is requested or collected during any point during the survey. It is completely anonymous. Please follow the link below for further information and direct connection to the survey.

https://www.surveymonkey.com/s.aspx?sm=Bwc0LgkP2edX387U9A7TXg_3d_3d

If the hyperlink does not work, you may need to cut and paste the above link into your web browser.

Thank you so much!

C. Noel Byrd
Doctoral Student, Educational Psychology Program
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Appendix C: Comparison of Survey Instruments: Original to Current

Williams & Coles' (2003) Survey Instrument	Current Study's Survey Instrument
Paper-based Format	Online Format
Section 1: No title	Section 1: Welcome
This section of the survey introduced the study to the participants, identified the researchers, provided funding information, and directed the participants to mail their responses back to the researchers by a given date.	This section of the survey introduced the study to the participants, identified and listed contact information for the researchers, and offered implied consent information to participate in the research study. This section of the survey was developed by the researcher independently of the Williams and Coles (2003) version.
Section 2: Your Use and Involvement in Research	Section 2: Involvement with Educational Research
This section of the survey addressed the participants' prior experience with research studies and subsequent interaction with educational research information. Further,	This section of the survey addressed the participants' prior experience with research studies and subsequent interaction with educational research

it asked participants about specific purposes of this contact (i.e., formal qualification) and timeframes for participation in research studies. There were no directions for this section.

Section 2 contained items 1a – 3c for a total of 8 items, including 2 items for a qualitative response if appropriate. Item 2b was a follow-up item related to 2a and item 3c was a stand-alone qualitative item. The items were presented with a question stem and multiple choices for answers with 2 - 3 options depending on the nature of the question.

information. The directions included the U. S. Department of Education (2007) definition of educational research. The directions provided were developed by the researcher to meet the needs of this section of the survey.

Section 2 contained items 2.1 – 2.6 for a total of 6 items, including 2 items for a qualitative response if appropriate. Item 2.2 was a follow-up item specifically related to 2.1 and item 2.5 was provided as an additional space to clarify an "Other" response specifically related to item 2.4. Participants were asked to respond to questions using a drop-down menu of answer choices. Answer choices varied per question depending on the stem question and/or statement and ranged from "Yes/No" to timeframes such as "Before school" or "During planning time". There were no items maintained from the Williams and Coles (2003)

version for this section of the survey.

Section 3: Your Views on Research	Section 3: Perceptions of Educational Research

This section of the survey addressed the participants' views about research in professional practice.

This section of the survey addressed the participants' general perceptions about educational research to include professional utility. The directions included a reminder that restated the U. S. Department of Education (2007) definition of educational research. Other than the definition component that was added, the directions were maintained from the Williams and Coles (2003) version with minor wording changes.

Section 3 contained 10 unnumbered items[a] with stem statements and a 3 option Likert-type scale. Answer choices for all statements were, left to right, "Agree", "Neither agree nor disagree", and "Disagree" (Williams & Coles, 2003, p. 81).

Section 3 contained items 3.1 – 3.12 for a total of 12 questions. Participants were asked to respond to statements on a 6 point Likert-type scale with the following left to right options: "Strongly Disagree" (1), "Disagree" (2), "Somewhat Disagree" (3), "Somewhat Agree" (4), "Agree" (5),

and "Strongly Agree" (6). Corresponding value labels (i.e., 1, 2, 3, 4, 5, and 6) are not shown on the scale.

Ten items (3.1 – 3.10) were maintained from the Williams and Coles (2003) version. Corresponding items included numbers 1 - 10. Some and/or all of the items may have incurred minor wording changes. Two items (3.11 and 3.12) were added to this section based on the objectives of the current study.

Section 4: Barriers to the Use of Research Information	Section 4: Barriers to the Use of Educational Research
This section of the survey addressed the participants' perceived barriers that inhibit their use of educational research.	This section of the survey addressed the participants' perceived barriers that inhibit their use of educational research. The directions were maintained from the Williams and Coles (2003) version with minor wording changes.
Section 4 contained 36 unnumbered items, including 1 item for a qualitative response if appropriate. Participants were asked to respond to a stem statement on a 4 point	Section 4 contained items 4.1 – 4.31 for a

Likert-type scale with the following left to right options: "this is not a barrier" (1), "this is a barrier to a slight extent" (2), "this is a barrier to a moderate extent" (3), and "this is a barrier to a great extent" (4) (Williams &Coles, 2003, p. 82). Additionally, a 5th area was provided to the direct right of the 4th option on the scale and was marked as "X" and included the following corresponding answer: "I have no opinion on this item" (Williams & Coles, 2003, p. 82).

total of 31 items, including 1 item for a qualitative response if appropriate (i.e., item 4.31 was provided as an additional space to list and/or explain any other barriers to the use of educational research). Participants were asked to respond to statements on a 6 point Likert-type scale with the following left to right options: "Strongly Disagree" (1), "Disagree" (2), "Somewhat Disagree" (3), "Somewhat Agree" (4), "Agree" (5), and "Strongly Agree" (6). Corresponding value labels (i.e., 1, 2, 3, 4, 5, and 6) are not shown on the scale.

Twenty-seven items (4.1 – 4.16, 4.18 – 4.22, 4.24 – 4.28, and 4.30) were maintained from the Williams and Coles (2003) version. Corresponding items included numbers 1 - 2, 5 - 12, 14, 16, 19 - 32, and 35. Some and/or all of the items may have incurred minor wording changes. Three items (4.17, 4.23, and

4.29) were added based on the objectives of the current study.

A total of 8 items were omitted from the Williams and Coles (2003) version. Three items (numbers 3, 4, and 15) were omitted because they specifically related to confidence levels. The remaining 5 items (numbers 13, 17, 18, 33, and 34) were omitted due to their lack of applicability to the current study or because they received inadequate ratings during researcher and/or expert review.

In addition to minor wording changes, all 27 items that were maintained from the Williams and Coles (2003) version incurred a change from the negative voice to the positive voice. For example, the following statement in item number 1 "Research reports/articles are not easily available" (Williams & Coles, 2003, p. 82) was changed to reflect a positive tone

as evidenced in item 4.1, "Research reports/articles are easily available to me".

Section 5: Your Use of Information	Section 5: Finding Information

This section of the survey was divided into two separate parts. For the purposes of this descriptive comparison, the first part shall be referred to as 5-1 and the second part shall be referred to as 5-2; however, no such labels were applied by the authors.

This section of the survey addressed the participants' degree of self-efficacy related to finding information within the field of special education. More specifically, this section addressed two types of information, general information and research information. The items were arranged so that the participants would respond to a stem statement regarding their confidence in finding general information and the next item asked about research information; both items contained identical elements related to special education. For example, item 5.1 stated "General information on a specific disability" and item 5.2 stated "Research information on a specific disability". Therefore, the difference in the two

The first part of this survey section, Section 5-1, addressed confidence levels associated with finding information depending on the type of information sought.

Section 5-1 contained 7 unnumbered items. Participants were asked to respond to a stem statement by rating their confidence level on a 4 point Likert-type scale with the following left to right options: "Very confident", "Confident", "Not confident",

and "No Experience" (Williams & Coles, 2003, p. 83). No value labels (i.e., 1, 2, 3, or 4, etc.) were included.

statements involved "general versus research" information while the synonymous element was "a specific disability". The directions were changed from the Williams and Coles (2003) version to reflect the content and purpose of the current section.

Section 5 contained items 5.1 – 5.12 for a total of 12 items. Participants were asked to respond to statements by rating their confidence level associated with specific tasks on a 10 point Likert-type scale with anchors "Cannot do at all" (0), "Moderately certain can do" (5), and "Highly certain can do" (10). Corresponding value labels are shown (i.e., the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10) on the scale.

This section represents an amalgamation of both Sections 5-1 and 5-2 from the Williams and Coles (2003) version and

the goals of the current study. Two items (5.5, 5.6, 5.7, and 5.8) and their content were maintained from the original version. As described in the first narrative paragraph of this segment of the table, this translates into 4 items total because each item represents one main concept which is further divided into general information and research information. Corresponding items included numbers 4 and 6. Some and/or all of the items may have incurred minor wording changes.

Due to the objectives of the current study, a total of eight items were added (5.1, 5.2, 5.3. 5.4, 5.9, 5.10, 5.11, and 5.12) which conceptually represent 4 elements.

Section 5: Your Use of Information (continued)	Section 6: Information Cycle
The second part of this survey section, Section 5-2, addressed confidence levels	This section of the survey addressed the participants' degree of self-efficacy

associated with the steps in the information cycle and further related these steps to general information seeking and finding research.

Section 5-2 contained 5 unnumbered items with 2 components to each item for a total of 10 items. Each item's stem statement was identified as a step in the information cycle and then further divided into general information and research information. Therefore, the participants could respond to each item's stem statement twice by choosing a confidence level for the statement as it applied to general information and then again as it applied to research information. Participants were asked to respond to the stem statements by rating their confidence levels on a 4 point Likert-type scale with the following left to right options: "Very confident", "Confident", "Not confident", and "No Experience" (Williams & Coles, 2003, p.

related to the individual steps associated with information literacy skills. The directions were changed from the Williams and Coles (2003) version to reflect the content and purpose of the current section.

Section 6 contained items 6.1 – 6.6 for a total of 6 items. Participants were asked to respond to statements by rating their confidence level associated with specific tasks on a 10 point Likert-type scale with anchors "Cannot do at all" (0), "Moderately certain can do" (5), and "Highly certain can do" (10). Corresponding value labels are shown (i.e., the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10) on the scale.

Conceptually, all 5 items from the Williams and Coles (2003) version appeared to be representative of the American Library Association's (2000)

83). No value labels (i.e., 1, 2, 3, or 4, etc.) were included.

information literacy standards and therefore, were represented among the 6 items in this section. The modifications made to any and all items in this section reflected the purpose of the current study in conjunction with careful and deliberate consideration of the American Library Association's (2000) information literacy standards, performance indicators, and associated outcomes.

Due to the specific objectives of the current study, this section eliminated the general information component and focused solely on the self-efficacy ratings in the context of the individual information literacy skills as they relate to research information. Three items (6.1, 6.3, and 6.4) were maintained from the Williams and Coles (2003) version. Corresponding items included numbers 1, 3, and 4. Some and/or all of the items may have incurred minor wording changes.

Two items (6.2 and 6.5) were created by extending the information in item numbers 2 and 5 (Williams & Coles, 2003) to include more detailed information regarding the information literacy skill. Some and/or all of the items may have incurred minor wording changes. One item (6.6) was added to reflect the objectives of the current study.

Section 6: Sources of Research Information	Section 7: Sources of Research Information
This section of the survey addressed where and how often participants contact research information in a specific curriculum/subject area and research information related to teaching and learning theories and practice.	This section of the survey addressed the participants' frequency of contact with typical sources of research information. The directions were changed from the Williams and Coles (2003) version to reflect the content and purpose of the current section.
Section 6 contained 24 unnumbered items under the directions labeled with 8a. Participants were asked to respond to stem statements listed under the heading	Section 7 contained items 7.1 – 7.20 for a total of 20 items, including 1item for a

"Sources" (Williams & Coles, 2003, p. 84). This heading was further divided into two categories, "Publications" and "Other Sources" which contained items 1 – 8 and items 9 – 24 respectively (Williams & Coles, 2003, p. 84). The section labeled "Other Sources" contained one subheading labeled "Colleagues" that included items 20 – 24 (Williams & Coles, 2003, p. 84).

Participants were asked to select a response to the aforementioned stem statements indicating their frequency of contact with that particular source of information. A 3 point Likert-type scale was provided with the following left to right options: "R" (Regularly), "O" (Occasionally), and "N" (Never) (Williams & Coles, 2003, p. 84). The scale was presented under two separate headings: "Subject related research" and "Research relating to teaching and learning theories and practice" (Williams & Coles, 2003, p. 84). Therefore, the participants

qualitative response if appropriate. Item 7.20 was provided as an additional space for the participants to identify and describe any other sources of research information. Participants were asked to respond to a stem statement indicating their frequency of contact with that particular source of research information. A 5 point Likert-type scale was provided with the following left to right options: "Never" (1), "Yearly" (2), "Monthly" (3), "Weekly" (4), and "Daily" (5). Corresponding value labels (i.e., 1, 2, 3, 4, 5, and 6) are not shown on the scale.

Fourteen items (7.1 – 7.2, 7.6 – 7.12, 7.14 – 7.17, and 7.19) were maintained from the Williams and Coles (2003) version. Corresponding items included numbers 1 - 2, 8 - 12, 14 - 18, 20, and 24). Some and/or all of the items may have incurred minor wording changes.

could respond to each stem statement twice; once for their frequency of contact with the source for subject specific matters and once for their frequency of contact with that source for matters related to research. Item 6 included an additional space for a qualitative response specifically related to that item.

This section also included 6 additional items, labeled 8b – 10b, which related to responsibility concerning the provision of research information and primary resources within a school. Three of these items (8b, 9a, and 10a) were multiple choice with 2 – 9 options depending on the question; options varied per question. Two of the three items (9a and 10a) also included an option for a qualitative response. The other three 3 items (8c, 9b, and 10b) were qualitative in nature.

Two items (7.3 and 7.4) were the result of essentially dividing one item (corresponding item number 3) from the Williams and Coles (2003) version to provide additional specificity. One item (7.5) was created by combining two items (corresponding item numbers 5 and 6) from the Williams and Coles (2003) version. Two items (7.13 and 7.18) were added to this section based on the objectives of the current study.

Section 7: You and Your Teaching Experience	Section 8: Professional Information
This section of the survey addressed the participants' demographic information. There were no specific directions included at the onset of this section.	This section of the survey addressed the participants' demographic information. There were no specific directions included at the onset of this section.
Section 7 contained items 11 – 26 for a total of 16 items. Participants were asked to respond to items 11 – 17 and 18 - 26, primarily formatted as questions, by selecting an answer from multiple choices ranging from 2 – 15 options depending on the question; options varied per question. Two items, items 12 and 19, included an option for a qualitative response if appropriate. Item 18 was qualitative in nature.	Section 8 contained items 8.1 – 8.19 for a total of 19 items, including 6 items for qualitative responses if appropriate. Items 8.2, 8.7, 8.10, 8.12, 8.14, and 8.19 were provided as follow-up items for additional clarification specifically related to the immediately preceding items (i.e., item 8.2 was a follow-up item related to item 8.1, item 8.7 was a follow-up item related to item 8.6). Participants were asked to respond to items, primarily formatted as questions, by selecting the appropriate responses from a drop-down menu of answer choices. Answer choices varied

per question. Participants were asked to respond to one qualitative item by typing their answer into a text box.

Section 8: Other Comments	Section 9: Thank You
This section of the survey addressed comments and suggestions related to educational research. Additionally, after the subsequently explained items (items 27 and 28), the section included several statements regarding the study. The authors stated that the summary of the findings would be made available to the participants if they provided an email address. A space for the inclusion of an email address was supplied. The authors also thanked the participants for their assistance and reminded them of the due date for completion and return of the questionnaire. Section 8 contained items 27 and 28 for a total of 2 items. Both items were	This section of the survey thanked participants for their participation in the study.

qualitative in nature and provided

approximately 2.5 inches of space for a

written response.

Note. For the purposes of this descriptive comparison, the Williams and Coles' (2003) survey sections were named as they appear in this table by their order from the front of the questionnaire combined with the title as it was labeled within the instrument. In the original format, titles appeared in all capital letters.

[a] In the absence of numbers to identify the item, items were serialized based on their relative position within the section (i.e., the first item would be assigned as number 1, the second item would be assigned as number 2, etc.).

Appendix D: Survey Instrument

Educational Research Survey

1. Welcome!

As a Special Education Professional within the state of Virginia, you have been asked to participate in a study titled "Special Educators' Perceptions of Educational Research: A Self-Efficacy and Information Literacy Perspective". Please read this page which contains information about the study.

Research Investigators

Please contact one of the researchers with any questions regarding any part of this survey.
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Purpose

The purpose of this study is to examine the use of educational research by Special Education professionals. The questions contained within this survey often refer to teaching activities. However, if you are not primarily a teacher (such as a Physical Therapist) within the Special Education Department, please answer the questions based on your duties as they relate to your professional area.

We hope that this research will be useful in understanding issues related to the education profession. Your support in this study is greatly appreciated. By taking the approximately 20 minutes to complete this survey you will help us to identify the issues which concern educational professionals as they use research evidence to inform their practice.

Your Invitation to Participate

Please read the following information and if you agree to participate, click on the "Next" button at the bottom of this page to start the survey.

*The risks associated with participating in this research are considered to be minimal.

*A potential benefit of your participation may be that you gain new insights that are valuable to you personally or professionally. You may contact the researchers to obtain a summary of the research results.

*Your identity will remain confidential at all times. No personally identifiable information is requested or gathered during any process of this survey.

*The results of this study may be widely disseminated and possibly published, however all responses will be treated in confidence and no districts will be named in the reporting of results. You may contact the researchers at a later time to obtain a summary of the research results.

*Your participation in this research is entirely voluntary. You may choose to stop taking the survey at any time.

Thank you in advance for your participation and cooperation in this project!

Educational Research Survey

Consent

If you agree to participate in this study, click on the "Next" button below. Doing so will imply your consent to participate in this project.

Educational Research Survey

2. Involvement with Educational Research

In the body of this survey, you will be asked questions related to educational research. In this context, educational research is defined as "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs" (U.S. Department of Education, 2007).

2.1: Have you ever participated in an educational research study (including partnerships with outside agencies, research within your classroom, or any experience with research in your educational training)?

2.2: If yes, please explain your role within those studies:

2.3: If you currently read educational research, when do you usually read these materials?

2.4: If you currently read educational research, for what purpose(s) do you read these materials?

2.5: Other (please specify)

2.6: According to the US Department of Education, educational professionals use evidence-based practices in classrooms when they use scientific knowledge derived from research as a framework for choosing interventions, programs, and curricula to improve educational outcomes. Using this definition, do you use evidence-based practices in your professional life?

Educational Research Survey

3. Perceptions of Educational Research

Reminder: Educational research is defined as "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs" (U.S. Department of Education, 2007).

Whether or not you use educational research directly, we are interested in knowing what you think about research in professional practice. For each statement, please indicate a response that most applies to you.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
3.1: I would like to make more use of research.	○	○	○	○	○	○
3.2: I feel alienated by the language of research.	○	○	○	○	○	○
3.3: Most research is relevant to my teaching.	○	○	○	○	○	○
3.4: There is not enough emphasis on evidence-based practice in teaching.	○	○	○	○	○	○
3.5: Much of the research I read or hear of bears no relation to classroom practice.	○	○	○	○	○	○
3.6: Research is conducted by academics with no grounding in the real issues of teaching.	○	○	○	○	○	○
3.7: Research is valuable in improving my teaching quality.	○	○	○	○	○	○
3.8: Being up-to-date with research aids in my career progression.	○	○	○	○	○	○
3.9: Research is not written for classroom teachers.	○	○	○	○	○	○
3.10: Keeping up-to-date with current research is an essential part of my professional development.	○	○	○	○	○	○
3.11: Research is valuable for improving student achievement.	○	○	○	○	○	○
3.12: Research can help solve classroom and/or student specific problems.	○	○	○	○	○	○

Educational Research Survey

4. Barriers to the Use of Educational Research

We are interested in identifying possible barriers to the use of educational research information. Below is a list of possible factors that might impact your use of educational research. For each factor, please indicate a response that most applies to you.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
4.1: Research reports/articles are easily available to me.	○	○	○	○	○	○
4.2: Research is relevant to my teaching practice.	○	○	○	○	○	○
4.3: I have time to find and read research.	○	○	○	○	○	○
4.4: Relevant research is compiled in one place.	○	○	○	○	○	○
4.5: Research is reported in a clear and readable format.	○	○	○	○	○	○
4.6: The amount of research available is easily manageable.	○	○	○	○	○	○
4.7: Implications for practice are made clear.	○	○	○	○	○	○
4.8: Information about the existence of relevant research is available.	○	○	○	○	○	○
4.9: My school district encourages research based practice.	○	○	○	○	○	○
4.10: My school administrators encourage research based practice.	○	○	○	○	○	○
4.11: Research is often of high quality.	○	○	○	○	○	○
4.12: There would be major benefits of changing practice to reflect research findings.	○	○	○	○	○	○
4.13: Research findings are often applicable to my own classroom setting.	○	○	○	○	○	○
4.14: I have the opportunity to discuss research with knowledgeable colleagues.	○	○	○	○	○	○
4.15: I could benefit from reading research.	○	○	○	○	○	○
4.16: Research reports/articles are published fast enough.	○	○	○	○	○	○
4.17: I see how my reading of research could benefit my students.	○	○	○	○	○	○
4.18: There is considerable research applicable to the students I teach.	○	○	○	○	○	○
4.19: I see the value of research for practice.	○	○	○	○	○	○
4.20: I see a need to change practice.	○	○	○	○	○	○
4.21: Research literature reports consistent results.	○	○	○	○	○	○
4.22: It is possible to translate research into action due to support from my district and/or school administration.	○	○	○	○	○	○
4.23: I find it easy to decipher research findings amid the technical nature and/or jargon used in the reports/articles.	○	○	○	○	○	○
4.24: Research findings are often expressed in terms of impact on learning.	○	○	○	○	○	○
4.25: Research reports/articles imply an understanding of the realities of practice.	○	○	○	○	○	○
4.26: I have time to make changes to my teaching practice as a result of research information.	○	○	○	○	○	○

Educational Research Survey

4.27:The school library provides access to research information.	◯	◯	◯	◯	◯	◯
4.28:Other libraries nearby provide access to research information.	◯	◯	◯	◯	◯	◯
4.29:There is research related to the situations I encounter in my day-to-day teaching.	◯	◯	◯	◯	◯	◯
4.30:It is easy to find research information on the Internet.	◯	◯	◯	◯	◯	◯

4.31:Is there anything else that acts as a barrier to your use of educational research? If so, please tell us about it:

Educational Research Survey

5. Finding Information

Whether you are a regular user of research or not, we would like to know a little more about your confidence level associated with finding research and general information. Please rate your confidence level in FINDING the following types of information.

	0 Cannot do at all	1	2	3	4	5 Moderately certain can do	6	7	8	9	10 Highly certain can do
5.1: General information on a specific disability.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.2: Research information on a specific disability.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.3: General information on strategies related to a specific disability.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.4: Research information on strategies related to a specific disability.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.5: General information related to teaching methods and styles.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.6: Research information related to teaching methods and styles.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.7: General information about learning theory.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.8: Research information about learning theory.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.9: General information about the tools and/or processes needed to perform your teaching duties (i.e., IEPs, Behavior Intervention Plans, intervention strategies, etc.).	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.10: Research information about the tools and/or processes needed to perform your teaching duties (i.e., IEPs, Behavior Intervention Plans, intervention strategies, etc.).	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.11: General information to problem-solve a classroom situation.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
5.12: Research information to problem-solve a classroom situation.	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯

Educational Research Survey

6. Information Cycle

Please indicate your confidence level in performing the following tasks related to information processing.

	0 Cannot do at all	1	2	3	4	5 Moderately certain can do	6	7	8	9	10 Highly certain can do
6.1: Identifying and defining your research information need.	○	○	○	○	○	○	○	○	○	○	○
6.2: Locating, accessing, and managing research information.	○	○	○	○	○	○	○	○	○	○	○
6.3: Evaluating and selecting research information.	○	○	○	○	○	○	○	○	○	○	○
6.4: Organizing and synthesizing research information.	○	○	○	○	○	○	○	○	○	○	○
6.5: Demonstrating and communicating knowledge of the economic, legal, social, and ethical issues surrounding the use of research information.	○	○	○	○	○	○	○	○	○	○	○
6.6: Applying research information within your teaching/professional practice.	○	○	○	○	○	○	○	○	○	○	○

Educational Research Survey

7. Sources of Research Information

Please indicate how often you consult the following sources for information regarding your teaching/professional practices.

	Never	Yearly	Monthly	Weekly	Daily
7.1:Mainstream newspapers.	◯	◯	◯	◯	◯
7.2:Professional magazines or newspapers.	◯	◯	◯	◯	◯
7.3:Research journals in print.	◯	◯	◯	◯	◯
7.4:Research journals online.	◯	◯	◯	◯	◯
7.5:Search engines (Yahoo, Google, etc.).	◯	◯	◯	◯	◯
7.6:Information circulated by your school district or school administration.	◯	◯	◯	◯	◯
7.7:In-services provided by your school district or school administration.	◯	◯	◯	◯	◯
7.8:Professional conferences.	◯	◯	◯	◯	◯
7.9:Professional organizations.	◯	◯	◯	◯	◯
7.10:Your school library.	◯	◯	◯	◯	◯
7.11:College/academic library.	◯	◯	◯	◯	◯
7.12:Department leader or chairperson.	◯	◯	◯	◯	◯
7.13:School administration.	◯	◯	◯	◯	◯
7.14:Special Education Director, Coordinator, and/or administrative team.	◯	◯	◯	◯	◯
7.15:New teachers.	◯	◯	◯	◯	◯
7.16:Informal discussions with colleagues.	◯	◯	◯	◯	◯
7.17:Email ListServs.	◯	◯	◯	◯	◯
7.18:Media coverage of a "hot topic".	◯	◯	◯	◯	◯
7.19: Veteran teachers.	◯	◯	◯	◯	◯

7.20:Are there any other sources of research information that you use? If so, please describe it and how often you use it. For example, if you have a website you frequently use, cite it, indicate your usage purposes, and approximately how often you use it.

Educational Research Survey

8. Professional Information

8.1: What best describes your main role within the Special Education Department?

[▼]

8.2: Other (please specify) [   ]

8.3: How long have you been teaching or providing services within the Special Education field (including this year)?

[▼]

8.4: What is your highest level of education (related to teaching or your specialty area)?

[▼]

8.5: Do you have National Board Certification?

[▼]

8.6: Did you obtain your teaching license through traditional means (e.g., college-prep program) or through an alternative certification program (e.g., Career-Switcher Program)?

[▼]

8.7: If alternative, please explain: [   ]

8.8: What endorsement(s) are present on your teaching or professional license? (i.e., SLD, ED, MR, Reading Specialist, etc.)

[   ]

8.9: What age group/level do you most typically teach or interact with in the course of your professional practice?

[▼]

8.10: Other or Combination (please specify) [   ]

8.11: As a part of your normal teaching duties or professional practice, do you teach or work collaboratively with regular education teachers?

[▼]

8.12: If yes, please indicate the subject area(s) you collaborate within or have in the past:

[   ]

Educational Research Survey

8.13:How would you best describe your school district?

[▼]

8.14:Other (please specify) [   ]

8.15:What is the approximate enrollment of your school? If you are assigned to multiple schools, please choose an answer based on the school where you spend the majority of your time.

[▼]

8.16:Are you:

[▼]

8.17:To which age group do you belong?

[▼]

8.18:What district/county do you work within?

[▼]

8.19:Other (please specify) [   ]

Appendix E: Table of Specifications

Research Questions	Concepts	Survey Items	Analysis
1. What are Special Educators general perceptions of educational research?	Perceptions of Educational Research	Section 3: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12 (Rev. score: 3.2, 3.5, 3.6, 3.9)	Descriptive
2. What do Special Educators perceive as barriers to their use of educational research?	Barriers to Use of Educational Research	Section 4: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, 4.19, 4.20, 4.21, 4.22, 4.23, 4.24, 4.25, 4.26, 4.27, 4.28, 4.29, 4.30	Descriptive
3. What are typical sources of educational research information for Special Educators?	Sources of Research Information	Section 7: 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 710, 7.11, 7.12, 7.13, 7.14, 7.15, 7.16, 7.17, 7.18, 7.19	Descriptive
4. Are there differences in self-efficacy ratings for Special Educators between finding general information and research information?	Self-Efficacy	Section 5: General: 5.1, 5.3, 5.5, 5.7, 5.9, 5.11 Research: 5.2, 5.4, 5.6, 5.8, 5.10, 5.12	T-test Compare general versus research
5. Are there differences in self-efficacy ratings for Special Educators between the specific steps of information literacy skills?	Self-Efficacy	Section 6: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6	Descriptive-overall score One-Way ANOVA within subjects Pairwise comparisons

| Survey Section		Item Numbers	Scoring Procedures
Section 1: Welcome!		N/A	Welcomes respondents, explains scope and purpose of study, offers timeline for survey, defines educational research, gives contact information, and reviews voluntary consent to participate.
Section 2: Involvement with Educational Research		2.1, 2.2, 2.3. 2.4, 2.5, 2.6	
	Subcategories		
	Previous Experience/Involvement with Research	2.1	Dichotomous scale Yes = 2 No = 1
		2.2*	2.2*:Includes space for explanation of participation within research study for qualitative response
	Timeframe for Contact with Research Information	2.3	3 point scale (categorical) After school hours = 3 During prep time at school = 2 I do not regularly read educational research = 1
	Purposes for Contact with Research Information	2.4	4 point scale (categorical) To solve a problem = 4 To update my knowledge = 3 Both: to solve a problem and update my knowledge = 2 I do not currently read educational research materials = 1
		2.5*	2.5*: Includes "Other" section for qualitative response.

	Provide evidence-based practices.	2.6	Dichotomous scale Yes = 2 No = 1
Section 3: Perceptions of Educational Research		Standard Score: 3.1, 3.3, 3.4, 3.7, 3.8, 3.10, 3.11, 3.12 Reverse Score: 3.2, 3.5, 3.6, 3.9	6 point Likert Scale Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree (6) = Positive View (1) = Negative View
Section 4: Barriers to the Use of Educational Research		All standard score 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, 4.19, 4.20, 4.21, 4.22, 4.23, 4.24, 4.25, 4.26, 4.27, 4.28, 4.29, 4.30 4.31*	6 point Likert Scale Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree (1) = Barrier to a great degree (6) = Barrier to a small degree 4.31*: Includes comment section for identification of any other barriers not identified in survey items.
Section 5: Finding Information		All standard score	11 point Likert Scale-labeled 0-10 Cannot do at all=0,
	Subcategories		Moderately certain can do=5,
	General Information	5.1, 5.3, 5.5, 5.7, 5.9, 5.11	Highly certain can do=10
	Research Information	5.2, 5.4, 5.6, 5.8, 5.10, 5.12	(11) = High degree of Self-efficacy (1) = Low degree of Self-efficacy
Section 6: Information Cycle		All standard score	11 point Likert Scale-labeled 0-10 Cannot do at all=0,
	Subcategories		

	Individual Steps	6.1, 6.2, 6.3, 6.4, 6.5, 6.6	Moderately certain can do=5, Highly certain can do=10 (11) = High degree of Self-efficacy (1) = Low degree of Self-efficacy
Section 7: Sources of Research Information		All standard score	Stem items include 19 mainstream and professional sources of information in print and online formats.
	N/A	7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 710, 7.11, 7.12, 7.13, 7.14, 7.15, 7.16, 7.17, 7.18, 7.19	5 point Likert Scale Never, Yearly, Monthly, Weekly, Daily (5) = Higher level of contact with research information source (1) = No contact with research information source
		7.20*	7.20*: Includes comment section for identification of any other sources of research information not identified in survey items.
Section 8: Professional information		Descriptive	Multiple Choice and Matrix/Drop-Down Menu Format Descriptive statistics for respondents.
	Subcategories		
	Position/Duties	8.1, 8.9, 8.11, 8.13, 8.15	
	Education/Experience	8.3, 8.4, 8.5, 8.6, 8.8	
	Personal/District Demographics	8.16, 8.17, 8.18	8.18: Asks participant for district/county of employment. Matrix drop-down menu with all districts within state of VA listed.
	N/A	8.2*	8.2*: Includes comment section to list position within Special Education Department not identified within survey items.

		8.7*	8.7*: Includes comment section to describe alternative certification program for licensure if applicable.
		8.10*	8.10*: Includes comment section used to further describe age group/level that the respondent typically teaches or interacts with if applicable.
		8.12*	8.12*: Includes comment section to describe collaborative subject areas if applicable.
		8.14*	8.14*: Includes comment section to further describe school district if needed.
		8.19*	8.19*: Includes "Other" comment section to include any unidentified district.

Appendix F: Virginia Tech Internal Review Board Letter of Approval

VirginiaTech
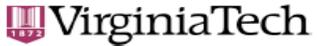
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FWA00000572(expires 1/20/2010)
IRB # is IRB00000667

DATE: April 11, 2008

MEMORANDUM

TO: Peter E. Doolittle
             Noel Byrd

FROM: Carmen Green

SUBJECT: **IRB Exempt Approval:**   "Special Educators' Perceptions of Educational Research: A Self-Efficacy and Information Literacy Perspective" , IRB # 08-245

I have reviewed your request to the IRB for exemption for the above referenced project. The research falls within the exempt status.   Approval is granted effective as of April 11, 2008.

As an investigator of human subjects, your responsibilities include the following:

1.   Report promptly proposed changes in the research protocol. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.

2.   Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

cc: File

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