

PRESERVICE TEACHERS' CONTENT KNOWLEDGE AND EFFICACY
FOR TEACHING READING: A MIXED METHODS STUDY

by

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PREVIEW

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This mixed methods study examined the effectiveness of a 16-week literacy course/reading center practicum by analyzing the development of preservice teachers' content knowledge and efficacy for teaching reading. Twenty-one elementary preservice teachers were enrolled in the course and thirteen preservice teachers served as a control group. In the quasi-experiment, preservice teachers were compared using a pre- posttest design on three dependent measures. Two instruments, the Content Knowledge for Teaching Reading Survey, CKT-R (Phelps & Schilling, 2003), and the Informal Survey of Linguistic Knowledge (Moats, 1994) were used to measure content knowledge. The Teacher Efficacy Scale for Teaching Reading (TESTR) was used to assess teacher efficacy at three points in the semester. In the qualitative embedded portion of the study a subsample of five of the preservice teachers in the literacy course/reading center practicum were interviewed at three points during the semester to better understand the learning process of preservice teachers as they developed content knowledge and efficacy for teaching reading.

Results indicated that both groups began the semester with moderately high efficacy and relatively low content knowledge. Interview data verified that the efficacy of the preservice teachers enrolled in the literacy course/reading center practicum declined

at the beginning of the experience due to the enormity of the task of teaching reading. By the end of the semester statistically significant differences in knowledge and efficacy were found between the experimental and control group, with the experimental group showing more gains in content knowledge and efficacy for teaching reading than the comparative group. Additionally, content knowledge and efficacy were highly correlated at the end of the semester $r = .63^{**}$, indicating that as preservice teachers gained knowledge they also gained efficacy. Providing opportunities for preservice teachers to make instructional decisions based on students' needs has proven to be very powerful in gaining content knowledge and efficacy.

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PREVIEW

CHAPTER 1

INTRODUCTION

Phelps and Schilling (2003) state: “This is a time marked by unprecedented interest in teacher quality (p.32).” As the United States government calls for high standards (e.g., No Child Left Behind, 2001) and high stakes assessments that document the meeting of those standards for our children, teachers are increasingly subjected to walking the line between preparing children for assessments and engaging them in meaningful and exciting instruction. This political context and its very real impact on teachers beg an important question: How does teacher accountability impact the results of standardized testing, teachers’ efficacy and their ability to be effective teachers?

Teacher quality has been an area of interest for many years with the recent focus on how much, and under what conditions teachers use effective instruction that impacts student achievement (McCaffrey, Koretz, Lockwood & Hamilton, 2004; Rowan, Schilling, Ball, & Miller, 2001). Defining and describing the characteristics of high quality teachers is an important area of study, but what also needs to be examined is what teachers actually know about the content of their instruction and how they use that knowledge to design effective instruction. There is a clear lack of research examining teacher knowledge and the abilities that characterize teacher quality.

Specific to elementary teachers is the expectation of becoming experts in many curricular areas, such as math, social studies, science, health and, arguably most importantly, reading and writing. Reading and learning to read are complex tasks. Becoming an effective teacher of reading requires many subsets of knowledge, demanding a much higher level of knowledge and preparation than is typically gained in

most teacher preparatory programs. In the primary grades (K-3) reading and writing should be the focus “content” of instruction. If children are not successful with the basics, reading and writing, learning in all areas will be a struggle. Learning to read really is a “high stakes” behavior that requires expert teachers with high levels of knowledge.

So, why hasn’t there been much research in the specific area of teacher content knowledge for teaching reading? Phelps and Schilling (2003) suggest three reasons why there hasn’t been a large inquiry into content knowledge for reading. First, reading is not viewed as a separate discipline, but rather integrated into most other disciplines. Second, although many elementary teachers may lack knowledge in science or mathematics, few individuals question teachers’ knowledge of reading because most teachers are competent readers. Finally, there seems to be a greater concern with teachers acquiring knowledge of methods, curriculum, and the psychology of reading than there is with the content knowledge supporting reading instruction.

The reality is that reading teachers need explicit knowledge of language and print to make sense of curriculum materials, understand student errors, and effectively engage students in proper reading materials to enhance reading development (Brady & Moats, 1997; Cunningham, Perry, Stanovich, Stanovich & Chappell, 2001; Moats & Foorman, 2003; Moats & Lyon, 1996). Just as in other content areas, there is separate vocabulary or “jargon” that unifies teachers who know how to teach reading effectively.

Another aspect of effective reading teachers is their strong sense of efficacy for teaching all aspects of reading (Henson, Kogan & Vacha-Haase, 2001). Bandura (1977) defined self-efficacy as “beliefs in one’s capabilities to organize and execute the course of action required to produce given attainments (Bandura, 1997, p. 3). Stated again, self-

efficacy is a judgment of one's ability to perform a task within a specific domain (Bandura, 1997). In other words, self-efficacy is the internal thoughts one possesses about the ability or capability for performing or teaching a specific task, in this case, reading.

Teacher efficacy and content knowledge are constructs that have been researched generally, and in many specific domains, such as math and science (Ball, 1990; Riggs & Enochs, 1990); however, little has been done to examine teachers' efficacy for the teaching of reading. This lack of research is surprising given that teachers' efficacy is strongly related to students' achievement (Ashton & Webb, 1986), students' own sense of self-efficacy (Anderson, Greene, & Lowen, 1988) and student motivation (Midgley, Feldlaufer & Eccles, 1989). Given the positive impact of high self-efficacy, it is imperative that preservice teachers begin building their sense of efficacy for teaching early during their undergraduate work. This responsibility falls on teacher preparation programs.

Effective teachers are confident in their ability to successfully teach students new material in their areas of expertise. One aspect that makes teacher efficacy so powerful is its cyclical nature (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998). Proficiency of performance creates a new mastery experience, which provides new information that will be processed to shape future efficacy beliefs. Higher efficacy leads to greater effort and persistence, which leads to better performance and teaching ability, which in turn leads to greater efficacy. This cycle can continue with high or low efficacy beliefs. Since the area of reading is so expansive, a teacher might become highly efficacious about one aspect of reading such as teaching early reading skills (e.g., strategies for decoding new words),

but not feel efficacious about teaching other skills (e.g., reading comprehension strategies). This is an important distinction in the area of reading, because if a teacher is highly efficacious about teaching certain reading skills, the positive impact will be seen in student performance in those skills, but not necessarily in other reading skills. Teacher efficacy is domain specific and an essential component in creating an effective and engaging environment.

Additionally, research also indicates highly efficacious teachers persist with struggling students and criticize less after incorrect responses (Gibson & Dembo, 1984). This is highly important considering the number of students in special education that are served in inclusive settings. Effort and persistence are two important characteristics of teachers working with students who struggle in any area, but particularly critical when they are working with students who struggle with reading and writing. Institutions of higher learning are responsible for the teaching and learning of our future teachers, and one of the primary concerns is the ability of teachers, specifically elementary teachers, to be effective teachers of reading for ALL learners, including those who struggle. Teacher training is a foundational and integral part of the equation.

In light of the fact that the development of positive teacher efficacy beliefs is extremely important among pre-service teachers, of great concern is the finding that once efficacy beliefs are established, they appear to be somewhat resistant to change (Hoy, 2000). This finding suggests that institutions of higher learning must provide pre-service teachers with positive opportunities to gain knowledge and expertise, so they begin to feel a sense of efficacy for the teaching of reading at an early stage of their development as teachers.

The importance and impact of this study and those that focus on the questions of teachers' overall knowledge and efficacy in their abilities to teach reading are invaluable. Reading and writing are essential contributors to children's future success in our society. It is imperative for researchers in the area of reading to continue to explore this area of inquiry. As stated above, although much research has been conducted in specific content areas such as science and mathematics, little is known about the content knowledge necessary for teaching reading. Without both knowledge of and efficacy for teaching reading, teachers will not be "highly effective." Without foundational skills of reading and writing, children will suffer. A better understanding of how knowledge and efficacy develop will allow teacher trainers to increase the effectiveness of the teachers being trained.

The intent of this study was to examine the effectiveness of a 16-week literacy course/reading center practicum for the development of content knowledge and self-efficacy of preservice elementary teachers. The purpose of this concurrent nested mixed methods study was to better understand the development of the knowledge and efficacy by converging both quantitative (numeric) and qualitative (text or image) data. In the quasi-experimental component of this study, 21 preservice teachers who were taking a literacy course/reading center practicum were compared with 13 preservice teachers who were not in the literacy course/reading center practicum. Both groups had previously completed their reading/language arts methods courses. Groups were compared on level of content knowledge and efficacy for the teaching of reading, measured by the Content Knowledge for Teaching Reading, CKT-R (Phelps & Schilling, 2003), the Informal Survey of Linguistic Knowledge (Moats, 1994) and the Teacher Efficacy Scale for

Teaching Reading (TESTR), developed for this study and based on the work of Bandura (1977, 1997) and Gibson and Dembo (1984). A secondary aim of this study was to gain a deeper understanding of the learning process of how preservice teachers describe their knowledge and efficacy for teaching reading using qualitative methods of inquiry.

PREVIEW

CHAPTER 2

REVIEW OF LITERATURE

The following review of literature focuses on four main areas that are significant to the development of the study and provides a basis for the research questions and study intent. The first section presents a review of what is currently understood about the content knowledge base of effective teachers, including a discussion of a model of teacher knowledge involved in teaching reading effectively, and guidelines published by various bodies outlining the knowledge and skills of effective reading teachers. The second section of this literature review focuses on general self-efficacy, teaching efficacy, and the relationships between teachers' self-efficacy and various student variables. The third section examines the role of teacher education in building knowledge and efficacy for teachers of reading. This literature review ends with a discussion of the purpose of the current study based on research reviewed, current political demands, and the critical importance of children becoming readers in today's world.

Content Knowledge

This section focuses on the model of teacher knowledge, specifically examining the four main contributors to teacher knowledge. Pedagogical content knowledge, one of the four main contributors, is then discussed in detail. The teacher knowledge discussion then moves into a discussion of the specific knowledge needed to teach reading. This includes research gathered from a variety of associations and federal governmental initiatives about the specific knowledge and skills teachers must possess to be highly effective reading teachers.

Model of Teacher Knowledge

In the 1980s there was a resurgence of research interested in the content of what was being taught in our schools and how it was being taught. In other words, there was an emerging focus on understanding the knowledge possessed by effective teachers.

Although many researchers define teacher knowledge in different ways, there are four main areas of teacher knowledge included in all of the definitions. The four main areas are (1) subject matter content knowledge, (2) general pedagogical knowledge, (3) knowledge of context and (4) pedagogical content knowledge (Elbaz, 1983; Leinhardt & Smith, 1985; Shulman, 1986, 1987). The act of teaching encompasses each of these knowledge bases and effective teachers have and demonstrate each of these types of knowledge. Following is a description of each type of knowledge.

Subject matter content knowledge is the amount and organization of knowledge of the subject area, as well as the substantive and syntactical structures of the subject (Schwab, 1964). The substantive structures are the many ways that the basic concepts are organized. The syntactical structure of a specific subject matter is the set of ways in which validity or invalidity are established (Shulman, 1986). Teachers must possess the major facts and concepts within a field and understand the relationships among them, the various paradigms that guide additional inquiries, and the evidence and proof within the discipline.

General pedagogical knowledge is the general knowledge about teaching and beliefs that include knowledge about learning and learners, knowledge of the general principles of instruction, knowledge and skills related to classroom management, and

knowledge about the purposes of education (Grossman, 1990). These are the basics of good teaching practices.

Knowledge of context is the understanding of specific settings where education takes place, individual learners, district knowledge, school “culture,” departmental guidelines and curricular information. This includes teachers’ knowledge of alternative instructional methods that meet the needs of their students.

Pedagogical content knowledge refers to the ways of representing and formulating the subject that makes it comprehensible to students (Grossman, 1990). Teachers must possess the specific subject matter knowledge, but pedagogical content knowledge includes the teaching aspect of the subject matter. Teachers with pedagogical knowledge have a clear understanding of the most important topics in their particular subject area and are able to manipulate the content so all will be able to successfully learn.

All of the knowledge bases are important to be a successful teacher, but pedagogical content knowledge has been the one to receive the most inquiry because it combines the subject matter with the basics of teaching. Many researchers have stated that it is the pedagogical content knowledge that separates the expert teacher from the experienced teacher (Kerr, 1981; Shulman, 1986; Wilson & Wineburg, 1988). Following is a more indepth discussion of pedagogical content knowledge.

Pedagogical Content Knowledge

Not only do teachers need to understand the *what* to teach, they also need to be able to disseminate the *how* and the *why* of the particular concept they are teaching (Shulman, 1986). Shulman (1986) defines pedagogical knowledge as...

...the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations - - in a word, ways of representing and formulating the subject that make it comprehensible to others. It also includes an understanding of what makes the learning of specific topics easy or difficult; the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning of those most frequently taught topics and lessons (pp. 9-10).

By examining the definition of pedagogical content knowledge, it is clear that teachers must possess indepth knowledge of their content and the students they teach to be successful teachers. Teachers gain knowledge from many sources, but there are four plausible sources for gaining pedagogical knowledge: (1) apprentice of observation, (2) subject matter knowledge, (3) teacher education and (4) classroom experience. All of the sources contribute to teachers' overall values and belief systems regarding teaching, however, some sources are more influential than others.

The apprenticeship of observation takes place when someone has substantial experience in observing members of the profession, and teaching is one profession in which students log thousands of hours observing teachers (Lortie, 1975). This has been a highly researched concept in teacher education because prospective teachers have been in the role of "student" for a significant amount of time and they rely on how they were taught in elementary and high school, as well as in their undergraduate courses. This in turn influences their teaching philosophy and methods of teaching (Grossman & Richert, 1988; Lortie, 1975).

In reference to subject matter knowledge, the more teachers know and learn about their specific content area, the better they should be able to teach those concepts to others. How much a beginning teacher understands about particular concepts and selection and sequencing of curriculum has a direct effect on their pedagogical content knowledge (Grossman, 1990). Teachers who have an indepth knowledge base of the content they are teaching are more likely to supplement materials and move from the contextual sequencing in textbooks to a flexible use of materials to meet the needs of students. These are qualities exhibited by expert teachers (Reynolds, Haymore, Ringstaff & Grossman, 1988).

Teacher education programs are another source where teachers may gain pedagogical content knowledge. Although it is assumed that subject-specific methods courses are where preservice teachers gain the majority of their pedagogical content knowledge, there is little evidence to support that claim. Typically, research has focused on teacher beliefs and practices within the classrooms and not on the specific knowledge gained from the courses (Zeicher, 1988). Examining the specific knowledge gained from coursework is an area of inquiry that must be studied if we are to have a better understanding of what and how teacher education programs prepare our prospective teachers.

Probably the largest and most influential source of gaining pedagogical content knowledge is classroom experience. It is here that teachers are able to hone their skills and attempt different strategies with a variety of students, so they are not only learning how to teach, but they are beginning to comprehend what they know and what skills and knowledge they are lacking. It is understood that the development of teachers'

pedagogical content knowledge comes from many sources, but it is imperative to also understand the process of gaining additional pedagogical knowledge (Grossman, 1990).

The sources of knowledge are very important, especially for the teachers who have the desire to become expert teachers. Although all sources have a certain amount of influence on pedagogical content knowledge, the steps involved in the actual act of teaching must also be examined. The following section examines the model of pedagogical reasoning and action and how it relates to becoming an effective teacher.

Model of Pedagogical Reasoning and Action

To gain a better understanding of the act of teaching, Shulman (1987) interviewed, observed, and examined materials of dozens of teachers to understand the process of transforming themselves from learner to teacher, from learning and understanding material for themselves to being able to explicate subject matter to students in a variety of ways. By examining the empirical and philosophical data, Shulman (1987) developed the model of pedagogical reasoning and action.

The model consists of a cycle of six phases: (1) comprehension, (2) transformation, (3) instruction, (4) evaluation, (5) reflection, and (6) new comprehensions. The first phase of the cycle is comprehension. Teaching delves much deeper than just the comprehending stage, but that is where it begins. To teach is to understand, but also to understand in a multitude of ways. Although teaching usually begins with some text, teachers must also understand the overall educational purposes of teaching subject matter. This first stage is defined by the intersection of content and pedagogy, because teachers must possess the content knowledge but also be able to represent that knowledge into information presented to students.

In the second stage, teachers must transform the information through the process of preparing the critical information, representing the ideas in new forms of analogies and metaphors, choosing instructional selections by modeling, adapting the representations based on general characteristics of the classroom, and making adaptations based on certain needs of students in their classes. Transformation is one of the most difficult aspects of teaching and it takes many trials to become proficient.

The third stage of Shulman's (1987) model is the act of instructing through explanations, discussions, direct teaching, and many other teaching methods. It is clear that if teachers do not have a solid understanding of the topic being taught, they will be unable to use flexible and interactive teaching techniques (Grossman, 1990).

The fourth stage of the model is evaluation. Evaluation examines both the student learning and the teaching processes, so improvements can be made the next time the content is taught. This includes formal testing, as well as feedback obtained on a daily basis.

The fifth stage is reflection. Reflection occurs after the instruction and evaluation stages as teachers look back and reexamine the process. Reflection is a very important step for teachers. This is the stage of self-analysis of the teaching methods.

The final stage is new comprehensions. Through the act of teaching, teachers achieve new understandings of the content taught and the purpose for teaching it. Brodkey (1986) states that there is a good deal of transient experiential learning among teachers, which are characterized as the "aha" moments that are not meshed with their current knowledge base. It takes practice to develop new understandings.