

CYBERTUTORING 1ST GRADE STRUGGLING READERS: AN AFRICAN AMERICAN PRESERVICE TEACHER INVESTIGATION

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ABSTRACT

Many preservice teachers enroll in certification programs charged with preparing them for their in-service careers, but are often dislocated geographically from the locations in which students of diverse backgrounds live. This study involves a preservice teacher assisting struggling first grade readers from diverse backgrounds over a distance of 360 miles. We examine descriptions, examples, and insights into ways to use desktop computers and high-end videoconferencing technology to obtain a practical experience in literacy training. Participants included a preservice teacher as cybertutor, an in-service teacher and her students, an on-campus professor for the preservice teacher, and a professor of literacy education at a university in the Midwest. Despite limitations noted, we conclude that a preservice teacher can obtain a diverse and practical experience in the content area of reading while using a desktop to high-end videoconferencing.

INTRODUCTION

In January of 2002, President Bush signed the *No Child Left Behind* Act, which focused on the reformation of the *Elementary and Secondary Education Act* (ESEA). Title I of this act--*Improving Academic Achievement of the Disadvantaged*--addresses the importance of the content area of reading along with a set of provisions. The document benchmarks at the third grade level. The goal is to have every third grader in the U.S. reading at or above the appropriate level. Sections 2401-2404, address the incorporation of technology into the classroom. The focus is on technology as an enrichment factor in the classroom that will afford improved opportunities to achieve higher levels in reading. Additionally, the Act calls for educators and administrators to incorporate technology as a part of the curriculum.

At state and local levels, questions regarding technology and issues in academic achievement have converged. The discussions focus on closing academic achievement gaps. In the state of Washington, the Office of Superintendent of Public Instruction (OSPI), five-year strategic plan--*Preparing Washington Students for The 21st Century*—includes reading as the primary goal on the agenda. It states, “Beginning in 2002, increase the percentage of students meeting standard in reading on the WASL [Washington Assessment of Student Learning] to meet adequate yearly progress (AYP).” Prior to the *No Child Left Behind* Act, the state of Washington had already instituted standards for the incorporation of technology into classroom curriculum.

Concurrent with the U.S. Department of Education and the International Society of Technology in Education (ISTE), the State of Washington's OSPI constructed technological standards concentrating on the “effective use of technology that supports PreK-12 education.” According to ISTE, "...children will be empowered to function effectively in their future, a future

marked increasingly with change, information and growth, and evolving technologies" (ISTE, 2000). The utilization of new technologies encourages superior learning in students while keeping current with societal trends. Research studies continue to underscore the implementing of technology as a critical component of Pre-K education (see Casey, 1997).

LITERATURE REVIEW

There is a vast amount of current research on the use of technology in the classroom (see Boxie, 1999 for a review). In addition, there is a substantial body of literature to draw upon to develop a framework for successful student outcomes in tutor/apprentice relationships. For example, in *So...What's a Tutor to Do?* Roller (1998) provides an example that is modeled worldwide. Several research investigations have shown the positive outcomes of providing tutoring for struggling students. This research suggests that tutoring made available through technology promotes successful outcomes for struggling readers.

Currently, only a small number of studies relate directly to cybermentoring and/or cybertutoring. Boxie (1999) conducted a study that focused on technology across content areas and grade levels that included minimal observations of the role of cybertutors using high-end technology with struggling readers. Townsend (2001) conducted a study that focused on emergent writing after the incorporation cybertutoring. The review of the literature suggests three categories of investigation: a) investigating literacy strategies that are helpful in improving fluency and vocabulary in reading; b) investigating the role of a tutor in the content area of reading; and, c) investigating technology in literacy instruction.

Cybermentoring demonstrates one of many innovative uses of technology in the classroom. Maring and Boxie (2001) examined cybermentoring through a pre-service model of instruction. Townsend (2001) investigated the use and effectiveness of cybermentoring by examining the text of emergent writers. However, to date, little research exists or relates to the role of the cybermentor. There is minimal research within the parameter of preservice teachers into the role of cybertutor. Cybermentoring presents an opportunity to examine the preservice teacher in the role of cybertutor and the consequential effects on the cybertutor engaged in the urban school classroom. Furthermore, the role of cybertutor remote from the classroom and/or operating from a different social environment provides an opportunity to study a unique diverse practical experience through the innovative use of technology.

In order to collect data based upon a preservice teacher investigation, three questions framed the research:

1. What is the role of a cybertutor to a 1st grade struggling reader?
2. How does cybertutoring provide a "hands-on" experience to preservice teachers working with low-achieving readers from low-socioeconomic status (SES)?
3. How does the cybermentor of the cybertutor provide the preservice teacher with the opportunity to learn about currently used reading materials?

Here we explore the role of a cybertutor and the cybertutor's relationship to the development of a student's reading level. The study focuses on the role and personal reflections of the preservice teacher while being mentored by an in-service teacher and a university professor as well as the preservice teacher's role as a cybertutor. The intention of the study is to scrutinize the role and experiences of a preservice teacher as a cybertutor using low-end to high-end technology. The broader purpose of this study is to evaluate whether cybertutoring is a useful tool that may enhance student's reading performance through reinforcement while providing the preservice teacher with diverse practical experience.

METHODS

The participants worked in face-to-face partnership through low-end to medium-end technology. Data collection from this portion of the investigation began in September 2002 and continued through May 2003. Participants included one preservice teacher, one in-service teacher and the students of her classroom with emphasis placed on two struggling readers at the latter end of the first phase.

Research methods were qualitative in order to contextualize the participants' cybertutoring sessions and other interactions. Patton (1985) describes qualitative research as:

...an effort to understand situations in their uniqueness as part of a particular context and the interactions there. This understanding is an end in itself, so that it is not attempting to predict what may happen in the future necessarily, but to understand the nature of that setting—what it means for participants in that setting to be in that setting, what lives are like, what's going on for them, what their meanings are, what the world looks like in that particular setting... (p.1)

Here, a qualitative methodology is appropriate because of the limited amount of research previously conducted on cybertutoring from the preservice teacher point of view and given the establishment of a sequenced hierarchy: professor as cybermentor, in-service teacher, preservice teacher as cybertutor, and first-grade student.

Consistent with the purpose of this study, we gathered data on the role of a cybertutor from an African American perspective. As well, the research was to offer a better understanding of the role of cybertutor by generating copious data through personal observations, reflections, video transcriptions and informal interviews.

With one exception, the study took place in cyberspace. In the spring 2003, at onset of the project, a single on-site visit by the preservice teacher occurred. The preservice teacher's geographical remoteness was set by a distance of 360 miles from the urban school. The selection of the site occurred after consideration of the preservice teacher's own disconnection from a diverse population of struggling students, particularly ethnicity and poverty. The visit served to illustrate what a "great start school" and a "put reading first school" the preservice teacher had selected. The "great start school" that was selected had no more than 19 students in each first grade classroom. Moreover, the classification of this school as "at-risk" allowed the school to obtain federal grant money under the *No Child Left Behind* Act. The curriculum differed from the curriculum experienced by the preservice teacher's undergraduate practicum experiences, which occurred in predominately-white farming communities of the rural inland Pacific Northwest.

Following this single physical visit, the preservice teacher attempted to meet in cyberspace with two students at least three times per week. The preservice teacher and the two struggling readers are all African Americans. For this particular research, the preservice teacher used an abundant amount of African American children's literature during the meetings. The results gave the preservice teacher an in-depth connection to children's literature while making a connection with these students over 300 miles away. The poverty levels of the students were opposite of the students the preservice teacher had worked with over the previous five years. The in-service teacher selected the two students based on their difficulty reading materials targeted at the current grade level.

After each meeting, the preservice teacher gave by e-mail an evaluative observation of the tutoring, the students' engagement and learning outcomes to a university professor and often to the in-service teacher. In addition, mentoring of the preservice teacher by a university professor in Ohio occurred via email and phone. In addition, the preservice teacher viewed videotape of herself using *Netmeeting* to tutor the students. The preservice teacher watched the video and provided reflections of the experience to two university professors and the in-service teacher.

A final method of collecting data was through direct observation. The preservice teacher often observed other cybertutors using high-end technology with students located in rural areas and/or on American-Indian reservations. Following these observations, the preservice teacher provided written reflections on the use and effectiveness of high-end technology in helping 1st grade struggling readers in urban areas. The researcher collected and incorporated into her findings all emails, reflections, and observations related to the cybermentoring, cybertutoring and technology.

FINDINGS

Several significant findings resulted from investigation. Foremost, the compatibility of technology and the necessary technological support is primary for successful cybertutoring or for inclusion into a preservice teacher's practicum experience in the content area of reading. Technological compatibility is vital to the success of cybertutoring. The principal limitations were due to inability of connecting to the elementary school's low-end technology. Accommodating the low-end technology from the university's high-end technology was impossible. The university was equipped with *Polycom*, a high-end, video-conferencing technology that provides clear depictions of faces and movements, as well as instantaneous interactions. Finding a reasonable alternative to the university's technology was a time consuming process since it had budgetary implications, technological concerns, and was inclusive of academic expectations. After examining several venues to conduct cybertutoring and accommodate the elementary school, a decision was made to incorporate a lower end technology—*Netmeeting*.

Netmeeting interfaced poorly with the available technologies of the university. The incompatibility resulted in the cybertutor receiving delayed responses from the students. The cybertutor was to correct the children and respond due to the delay in reception. This was not the case for the students who were able to see and hear the cybertutor and respond immediately. Subsequently, delayed feedback on errors occurred on three different occasions.

Another disparity directly linked to the incompatible technology was the time the teacher spent with the students. The teacher came to the aid of cybertutees incurring technological difficulties. In each instance, the teacher had to direct her attention away from the general class. In an email response, she stated: "The amount of time that I was taken from my students this school year was a huge detriment to the project. The constant technical problems were unfortunate and to be frank unacceptable to the whole dynamics of classroom teaching" (Emailed June 14, 2003). The teacher's comments suggest that a laboratory classroom outside of the general classroom should be a consideration in future cybertutoring projects. The preservice teacher's experience differed greatly.

In the content area of reading, the cybertutor gained practical experience to support the general theory classes provided in undergraduate education. Cybertutoring at a *Read First School* gave the preservice teacher a practical experience with fluency and reading instruction. Working with first-grade struggling readers reinforced the elementary school's criteria. Fluency is the goal of the *Read First School* in Western Washington. The teacher stated that if "the children become fluent readers, they can focus their attention on making connections between the text's ideas along with their background knowledge. Then they can further focus their attention on comprehension" (Kirby 2003). On several occasions, the preservice teacher's reflections illustrated the idea of reading instruction and reinforcement that would aid others with cybertutoring in this content area.

After a conversation with the professor in the Midwest, the preservice teacher wrote a reflection that included new ways to incorporate high-end technology in the reinforcement of five areas of reading instruction: phonemic awareness, phonics, fluency, vocabulary, and text comprehension. She stated:

If there was compatibility technology, the cybertutor could use the document camera and laptop as part of the cybertutoring session. For example, using the solo stories, if a student was struggling with a word, the cybertutor, could zoom in using the document camera. By zooming in, the word can be broken into phonemes and graphemes to help the student while showing them how to sound out a word phonetically. In addition, many phonemic games could be used if we had the high-end technology on both ends (Reflection, April 8, 2003).

The preservice teacher gained experience with instruction in reading and technology. She also learned about classroom and time management.

The cybertutor reported during the cyber meetings that she found it necessary to alter the selection of children's literature and her pace of instruction. The preservice teacher noted that students' comprehension and focus reduced during sessions in which they covered more material. Exchanging roles assisted the students in maintaining their focus and increasing their comprehension. The preservice teacher was the learner and asked the students "Teach me for awhile." The students moved into the role of cybertutor and became instructors. The cybertutor learned to make mistakes to determine whether the students were following the material and to whether they would interject to aid the cybertutor. Although seldom used, a reflection by the cybertutor noted that the students' aided significantly from this technique. The students either would say the word slowly or would repeat the word until the cybertutor pronounced the word correctly. On one occasion, the cybertutor reflected "...the student went back to the beginning of the passage to read the passage *correctly*" (Reflection February 2003). The cybertutor did not report any major problems arising from student behavior. Students complied quickly when asked to get "back on track."

As a cybertutor, the preservice teacher found the experience an enriching component of the undergraduate experience. Cybertutoring allowed the preservice teacher to connect with a diverse group of students at a rural university. Additionally, the experience allowed the preservice teacher to identify culturally appropriate children's literature specific to SEC, race, and gender. Engaging the rural preservice teacher with an urban school, Cybertutoring emphasizes the university's commitment to local, state, and national educational goals. In the 21st Century, preparing preservice teachers by developing opportunities to integrate technologies in innovative practices is imperative for their future careers and the students they will educate. This research stresses the value and necessity for developing techno-literacies in order to improve student levels in the content area of reading. The experience of cybertutoring provided a practical experience using technology as an integral aspect of the *Put Reading First* program.

Future research should be based on compatible technology and technical support. In addition, on behalf of the preservice teacher's experience, future research should be broadened by developing a pipeline of mentorship for in-service teachers, professors, preservice teachers and students. Finally, future research should enhance the cyberworld by providing assessments of whether cybertutoring aids student learning and if so, how.

LIMITATIONS OF THE STUDY

Technology and time constraints were the primary limitations of the study. According to Marshall and Rossman (1999), "...there is no such thing as a perfectly designed study" (p.42) and every research design is limited. The initial plan and interest was to conduct an experiment using high-end technology such as *Polycom* or *Tandberg*. The university and the preservice teacher had the high-end technology and equipment to use; however, it took approximately 10 months for the elementary school to receive that technology. By the time the elementary school received compatible technology, it was the end of the academic school year. Additional limitations

included the lack of technological support and equipment. Several times throughout the research, participants experienced technological difficulties resulting in postponement of cybertutorials and a great amount of frustration and excessive attention directed to the students engaged in cybertutoring.

The last identified limitation was the preservice teacher's knowledge about reading for content and pre-reading skills. The limitation appeared when the preservice teacher moved into the "self as instrument" position. The researcher, a preservice teacher, was concurrently completing the university's reading methods course. As a result, she had to alternate between subjective in objective positions. The researcher had reviewed literature prior to conducting research that illustrated that cybermentoring was a useful and effective tool; therefore, the researcher had certain expectations of cybertutoring. The researcher had to abandon these biases to recognize the importance of thorough and unbiased observations and reflections.

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