

Digital Pre-Service Teacher Education Field Experiences as a Possible Augmentation to the Traditional Brick and Mortar Field Experience

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Abstract: If doctors can be trained by virtual surgery, pilots trained by virtual flight simulators and military trained by virtual maneuver training, then could teachers be trained through digital field placements? The demand for teachers who can teach via alternative methods, i.e. through video teleconferencing or online, is increasing. With the need for highly qualified teachers, it is important that teacher candidates be exposed to alternative delivery methods as they could possibly be called upon to use alternative delivery methods at some point in their teaching career. This paper seeks to answer: Is there a way to train teachers through online field experiences for the traditional classroom as well as to be effective online teachers? Are distance learning technology experiences an effective learning environment for the candidate field experience? Does online field supervision provide effective information to the candidate to be successful in the classroom? Data from the candidates' experiences will be presented reflecting the value and feasibility of digital field experiences in teacher preparation programs.

Keywords: Field experience, distance learning technologies, alternative teaching method

OVERVIEW

Field experiences are an important part of any College of Education teacher preparation program. They allow pre-service teachers firsthand experience in classrooms so that they might develop good teaching practice. With ever changing classrooms to include distance and online learning, field experiences with alternative forms of educational delivery are becoming more important. This paper will discuss the effectiveness of a digital field experience using distance learning technology by assessing pre-service teacher education candidates from the perspective of the university supervisor as well as the candidate.

For the purpose of this paper, field experience is defined as the placement of teacher candidates into actual classrooms in order to practice the craft of teaching. Field experiences are done under the tutelage of a mentor teacher and a university supervisor. This paper will discuss a pilot project conducted by the University of Arkansas-Little Rock in cooperation with the Arkansas Department of Education Distance Learning Center

(ADE DLC) and the Arkansas School for Mathematics, Science, and the Arts (ASMSA). The primary goal of this pilot was to give pre-service teacher candidates experience with an alternative form of classroom experience. It will compare the candidates' traditional field experience to their distance learning technology field experience based on the observations recorded on the Pathwise Plus Assessment and excerpts from student reflective journals.

This paper will discuss the successes of the pilot project. It will also discuss areas needing attention in the use of distance learning technology in field evaluations; supervisor and candidate training of distance learning technology; and the candidate's usage of distance learning technology for content delivery. A review of the literature will discuss the emergence of distance learning in education; how educators are adapting distance learning technology into the curriculum of the classroom; and what institutions of higher learning are doing with distance learning technology in teacher preparation.

This paper will allow readers to to synthesize and evaluate the role of distance learning technology in education, how educators successfully meet the challenge of teaching from a distance setting to multiple classroom settings simultaneously, including curriculum design, assessment, and classroom management. It will address the pros and cons of utilizing distance learning technology for content delivery; assessing pre-service teacher education candidates using distance technology, the use of distance learning as a tool in the classroom by pre-service teachers, the implications for archiving data for accreditation review (i.e., NCATE/SPA), meeting Arkansas State Licensure Standards for field placement; and finally as a tool for professional development in terms of data collection and delivery.

LITERATURE REVIEW

One of the primary reasons for using distance-delivered education courses is to allow students to take classes that they might not otherwise have access to in their traditional school. Many schools do not have the teacher expertise to offer advanced courses, foreign language courses, or sometimes even basic courses students need in order to graduate from high school. In some cases, there may not be enough student interest

in a particular school to offer courses (Gagne & Shepherd, 2001; Donlevy, 2003). The ability of schools to access these resources via alternative forms of delivery is a great advantage. The demand for more non-traditional delivery of courses to high school students is growing at double digit rates. Preparing teachers to meet this demand is essential.

The largest disadvantage of distance-delivered education is the physical separation between teacher and student. In this pilot, the teachers were centrally located while broadcasting to at least two student sites throughout the state. Another disadvantage is technology issues that cannot be controlled, such as weather. However, these issues are kept to a minimum through carefully planning and coordination. Using distance technology also requires a tremendous investment up front in order to participate. The state of Arkansas is lucky in that the state set up the network and schools were able to purchase equipment through grants and state funding. Every school in the state can subscribe to the courses offered through either the ADE DLC or ASMSA.

Teacher preparation programs must continually reinvent degree programs to effectively train teacher education candidates for the changing nature of teaching, the current tools of technology, and how to use these technologies effectively. Field experiences give teacher candidate hands-on experience with teaching and are integral to education programs. "If schools are to foster meaningful learning, then the ways that we use technologies in schools must change from technology-as-teacher to technology-as-partner in the learning process" (Jonassen, Howland, Marra, & Crismond, 2008, p. 7). Field experiences give pre-service teachers the opportunity to get hands-on experience with the technology available to the schools, as well as valuable practice in using them as teaching tools.

Alternative forms of educational delivery, both virtual and online, are growing at about 30 percent annually (Deubel, 2008). With this rate of increase comes an increased demand for qualified teachers who have the ability to teach in this manner. Opponents argue that teaching is teaching regardless of the delivery format, however alternative forms of educational delivery require a different set of skills than traditional educational delivery. In 2000, The Web-Based Education Commission challenged teacher preparation programs to, "Provide continuous and relevant training and support for educators and administrators at all levels. ...for effective use of technology in the classroom. However, not enough is being done to assure that today's educators have the skills and knowledge needed for effective web-based teaching. And if teacher education programs do not address this issue at once, we will soon have lost the opportunity to enhance the performance of a whole generation of new teachers, and the students they teach" (2000, p. iv). The Commission "...recommends that the education community develop standards for high quality online courses. ...to build common standards and requirements for online learning programs, courses, and certifications comparable to the standards required for onsite programs" (2000, p. v). This paper starts to address the lack of a body of knowledge related to teacher education programs and the need for teachers to be able to step into any classroom, virtual or traditional.

Davis & Roblyer (2005) suggest, "The vision that drove the first virtual schools was that of more affordable, consistent, and equitable access to high-quality educational opportunities for students who need them most: rural, underserved, and at-risk populations." (p. 400). Furthermore, "...the provision of guided

observations and effective mentoring to develop the candidates practice in live K-12 virtual classroom(s) needs to be creatively developed, so that some beginning teachers join the profession with an ability to assist other teachers in VS or have teaching experience in VS" (p. 402). With the continued growth in demand for courses delivered through distance methods, will come a corresponding demand for teachers who can teach via alternative methods. Our pilot program is giving teachers experience that could be invaluable to them later in their teaching careers.

PROCEDURE

The ADE DLC provides schools in Arkansas access to distance learning instruction in all content areas to meet needs in Arkansas school districts lacking qualified teachers in content areas. The ADE DLC provides synchronous, interactive teaching/learning experiences in real time, not asynchronous non-interactive, through Enhanced Audio-graphics (EAG), Compressed Interactive Video (CIV), dial-up, and ELMO displayed on computer monitors. In addition to the compressed video, the DLC uses "Sametime", a videoconferencing software that incorporates an interactive whiteboard and communication tools, for instruction. Every student participating in these courses has a computer so students can interact with the teacher. The DLC has six teachers who are trained as Pathwise mentors. The DLC is serving 85 schools during the 2007-2008 term. Participating schools are from metro, suburban and rural areas across the state of Arkansas. All but twenty schools in the state of Arkansas are connected to the ADE DLC and can participate in classes as needed. The rules for class participation are the same as those in "brick and mortar" schools.

A recent survey of 16 online universities, found only four that offer secondary education programs. In addition, it was discovered that most online universities do not offer initial certification programs at the master's level. Acceptance into online graduate education programs can be granted as long as the candidate is already a certified teacher. When the universities offering initial certification on line were questioned about how they completed the field placement portion of their programs, they indicated that roughly 100 hours of prior observation could be counted as admission to their program. These hours can be completed through substituting, volunteering, or by being a para-professional within the classroom. Graduation from the programs requires completion of an internship of some sort. The candidate would then have a teacher education specialist, hired within the state, come to observe him/her to determine whether he/she should receive their certification.

Data from the pilot study is found in Table 1, located in Appendix A. Pre-service teachers in secondary math, science, business and Spanish completed their field experiences either at the ADE DLC or ASMSA located in two central Arkansas cities, instructing students at as many as three locations simultaneously in rural and suburban areas of Arkansas. The data is taken from Pathwise Plus Evaluations during the candidate's pre-professional field experience. This experience requires a thirty hour observation in a school with a mentor teacher, with the student teaching two lessons while being observed by a university supervisor. We use the Pathwise Plus Evaluation which has four domains (Appendix B) upon which students are evaluated. Because the Instructional Skills Practicum and Supervised Clinical Teaching field experiences are mostly observation, Domain D, Professionalism, is not evaluated. In Table 1, four teacher education students' field

experiences in a traditional thirty hour field observation are compared to their virtual field experience.

During the field experience courses, pre-professional candidates are required to keep a journal. The following are excerpts from the candidates' journal related to some of the main differences they experienced in the virtual field experience versus the traditional face-to-face classroom field experience.

Student "A" talked about the differences between traditional and virtual classroom management. "Classroom activities in an online environment have some commonalities to the traditional classroom. Homework, quizzes, papers, journals, and exams are similar to the 'old school' method. One of the differences, however, is the method in which these are evaluated. Exams, papers, and quizzes are taken in the class, just like the traditional way, but then they are copied and mailed to the DLC instructor. Once at the DLC, the work is graded and marks posted in the student's personal website. This method slows the response time for the students. In the Physics classes taught by Sally Smith, the students have access to a daily course syllabus so that they can study ahead or refer later to what was covered. From the instructor's viewpoint, all this requires a great deal of preplanning and organization. An interesting element to the classes is that usually there is more than one school concurrently receiving instruction. This requires the teacher to be especially focused on the students. The technology is set up so that the class that makes the most noise, either by asking questions, socializing, or even just loudly rustling papers, is the class that is displayed on the instructor's screen. Thus the teacher, to reach the quiet kids, has to be especially proactive in asking students by name and school. I feel I was able to have a better relationship with the DLC students than at my traditional placement at Hall High because the students were focused on their individual computer screen and paid better attention to the technology and manipulatives I used as a demonstration to teach motion physics. At Hall High, students were not very attentive to the same demonstration. It is like the DLC students felt they have one on one personal attention through the computer. What I consider to be the biggest problem with a virtual field is that I can't walk around and look over the kids shoulders, but the trade off for student attention and participation is worth it.

Student "B" reflected on the new skill sets the virtual teacher must possess. "The teacher has to sign into the same-time Lotus Web-Meeting software for each class separately. She has to upload her files each and every time into each of the sessions separately as well. She has to use a variety of technology other than the EAG/CIV – she has to know how to use instant messaging to converse with students privately, she has to have her notes on PowerPoint, she has to know how to use the whiteboard that came along with the web-meeting software as well as learn how to share programs and files while she is in one of these sessions. During these sessions, the supervising teacher also has to know how to use the graphing calculator software (called TI-83 / TI-84 Smart View) whenever she has to draw graphs using technology. Last but not the least, the teacher must know how to send and receive e-mail messages. All the above-mentioned courses have to be taught entirely

through web-meetings set up at the teacher's office. She has to pretty much sit in her chair all the time and she has to go back and forth either to her computer (she has a laptop) or the headphones set (while teaching through the EAG technology) or watch the television screen (while teaching through the CIV technology).

Student "C" wrote in her journal about the advantages of teaching in using an alternative delivery method. "Many of the schools that we teach to have a hard time finding instructors, mainly because there are not many teachers available to teach the subjects that we teach, they are in a rural area that does not have qualified teachers in or near their towns, or because the schools do not have enough students taking the classes to employ a full-time instructor on campus." "Thousands of students in Arkansas would not have instruction in various subjects if the technology necessary for our program and the DLC program did not exist. By using our services, schools provide students with the instruction they need as well as access and application of a wide-range of technology that they will use in life." "This was my first experience with the program and I quickly realized how beneficial it was for students. Everything that they do in the class is relevant and applicable in their lives and they seemed geared to learn."

Student "D" emphasized the fact that the technology is simply a "tool" for learning, as well as changes in the way teaching takes place. "The technology mentioned here is the medium through which the curriculum is given to the students. Technology becomes the tool to teach Spanish when there is a dire shortage of Spanish teachers." "Teachers in EAST labs are labeled as "facilitators" as students are offered the opportunity to participate in project-based learning activities. Multiple-choice tests do not exist here as a shift from didactic learning to interactive learning takes place. Students learn to work together doing projects that directly contribute to the communities they live in." "The teacher did not constantly tell the students what the answers were and where to find them. The teacher did not even tell the students what questions they needed to ask. Students instead took control of their own learning—as they will do the rest of their lives—in participating in a project-based learning environment. Here again, technology was not the end of the curriculum. Instead technology was a tool that helped students document their findings in a way that means something to their community. Technology *enhanced* the curriculum—it was not the purpose of the curriculum."

IMPLICATIONS AND FUTURE STUDY

Currently, nearly all courses in the secondary initial licensure program at our university can be completed online except for field experience courses. We have students from rural areas and the military who would like to become teachers, but are unable to complete the field experience in our three partner school districts. Many members in our program have been called to active duty and deployed in the middle of the semester. All have asked to take the online courses from where ever they are stationed in order to complete their secondary certification. The ability to provide and document field experiences through distance learning technology will allow students to complete their degree where ever they might be.

Several questions emerge from this study: How does the current program of study at our university equip teacher

education candidates to function productively in both traditional classroom settings and in online classroom settings? What programmatic/curricular changes need to occur, if any, to better train candidates to be prepared for the current and emerging technologies used in education? Finally, a question that isn't just for our institution, but for all colleges and universities training educators: Do schools of education have an obligation to prepare educators who can teach using alternative delivery methods?

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Appendix A

Table 1. Comparison of Traditional to Distance Learning Technology Field Experiences

Field	Domain A: Planning		Domain B: Classroom Management		Domain C: Instruction	
	Traditional	Distance	Traditional	Distance	Traditional	Distance
A.1. (Physics)	2.4	2.8	2.4	3	2.4	2.8
A.2 (Physics)	2.6	2.6	2.4	3	2.4	3
B.1 (Math)	3	2.8	3	2.8	3	3
B.2. (Math)	3	2.8	3	2.8	3	3
C.1 (Business)	2.4	3	2.6	2.8	2.8	2.7
C.2. (Business)	3	3	3	2.8	3	2.8
D.1 (Spanish)	2.4	3	2.4	2.8	2.8	3
D.2 (Spanish)	2.4	3	2.4	2.6	3	3

Appendix B

Pathwise Plus Assessment Report Form

Domain A: Planning Score

- A1. Becoming familiar with relevant aspects of students' background knowledge and experiences
- A2. Articulating clear learning goals for the lesson that are appropriate to the students
- A3. Demonstrating an understanding of the connections between the content that was learned previously, the current content, and the content that remains to be learned in the future
- A4. Creating or selecting teaching methods, learning activities, and instructional materials or other resources that are appropriate to the students
- A5. Creating or selecting evaluation strategies that are appropriate for the students and that are aligned with the goals of the lesson

Domain B: Classroom Management Score

- B1. Creating a climate that promotes fairness
- B2. Establishing and maintaining rapport with students
- B3. Communicating challenging learning expectations to student
- B4. Establishing and maintaining consistent standards of classroom behavior
- B5. Making the physical environment as safe and conducive to learning as possible

Domain C: Instruction Score

- C1. Making learning goals and instructional procedures clear to students
- C2. Making content comprehensible to students
- C3. Encouraging students to extend their thinking.
- C4. Monitoring students' understanding of content through a variety of means, providing feedback to students to assist learning, and adjusting learning activities as the situation demands
- C5. Using instructional time effectively
- C6. Communicating effectively

Domain D: Professionalism Score

- D1. Reflecting on the extent to which the learning goals were met
- D2. Demonstrating a sense of efficacy
- D3. Professional behavior
- D4. Relations to parents
- D5. Accepts responsibility and maintains accurate records
- D6. Demonstrating professional ethics