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Preservice Teachers' Experiences with Technology Integration in Professional Development Schools (PDS)

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Abstract

Purpose of study: The need to train teachers with significantly enhanced clinical skills as well as mentored school-embedded experiences cannot be overemphasized. Recently, the National Council for the Accreditation of Teacher Education (NCATE) Blue Ribbon Panel on Clinical Preparation, Partnerships and Improved Student Learning (2010) reiterated the need to give aspiring teachers the opportunity to integrate theory with practice; develop good management and pedagogical skills; make professional decisions about practice; and understand and integrate the standards of their professional community (Goodman, 2002; Larson, 2005; Mantle-Bromley, 2002; NCATE, 2010: Su, 2002). These expectations for teacher education have placed renewed emphasis on professional development schools (PDSs) to provide authentic context for teacher preparation including technology learning and utilization. Today's preservice teachers need to understand not only how to use technology but also how technology changes the way content knowledge is taught. Teacher education programs have been identified as a major avenue to prepare teachers to use technology while professional development schools are positioned to equip these teachers with practical experience of using technology in real classrooms (Larson, 2005). However, in an evolving PDS partnership that is still saddled with organizational and logistic problems, the mentoring experiences that the preservice teachers receive in the area of technology integration depends largely on the comfort levels of the mentor teachers, the technologies available to them and the individual needs of the targeted students (Garin, Cruzado-Guerrero & Sabra, 2007). The purpose of this paper was to examine the technology learning experiences of preservice teachers who were placed in four urban-based elementary schools, designated as PDS for their field experience component. Two research questions guided the study (1) what were the technology learning experiences of preservice teachers in four urban based PDS? (2) What factors, if any, impacted these experiences?

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Theoretical Framework

The ecological system theory (Bruce & Hogan, 1998; Kelly, 2008; Koehler & Mishra, 2008; Zhao & Frank, 2003) provides a framework for understanding complex human issues and posits that there are a multitude of factors that influence any one phenomenon. Scholars writing from this perspective (Lemke, 1998; Zhao & Frank, 2003) propose the need for studying technology use in schools as part of an ecosystem, investigating the parts, the wholes and their interdependence, because schools and classrooms make up a complex system containing many parts and relationships, with biotic and abiotic elements. These elements interact to create an open, dynamic and ever changing ecosystem. Koehler & Mishra (2008) argue that integrating technology is a complex ill-structured problem involving the convoluted interaction of multiple factors. Therefore, to assess the success or otherwise of preservice teachers' technology

experiences in urban based PDS, the ecological model serves as a lens to examine this from many perspectives: social, organizational, technological, and psychological (Bruce & Hogan, 1998; Zhao & Frank, 2003).

The ecological model also recognizes that learning is a situated practice. Situated learning perspective (Brown, Collins, & Duguid, 1989), posits that knowledge is situated, being in part a product of the activity, context and culture in which it is developed and used. This perspective presupposes that authentic learning is based on real life experiences. Technology learning and utilization by preservice teachers must be situated within a context and culture that maximizes learning of new technology skills through, a) observation of teachers using technology, b) teaching with technology in actual classrooms and, c) supervision of the technology integration efforts of preservice teachers with more constructive feedback (Armstrong, 2009; Goodman, 2002, Larson, 2005).

Methods

Context and participants: Data for this study were collected from a yearlong study of a PDS partnership between a teaching college located in northeastern U.S.A and four urban-based elementary schools, between 2008 and 2009. As part of the PDS partnership, preservice teachers were posted to four urban-based elementary schools for a 40 hour field experience component per semester. Courses were taught on the campuses of the public elementary schools by the faculty of the college. Teacher candidates or interns were expected to spend their field experience time working with mentor teachers or school based educators (SBEs) during which the candidates observe and are mentored by the participating teachers. The participants were sixty-six preservice teachers and twenty four school based educators (SBEs) made up of five males and nineteen females, whose teaching experiences ranged from one to over fifteen years.

Data sources: These included surveys, interviews as well as reflective papers written by the preservice teachers in which they narrated their experiences at the PDS. The survey included Likert-type, yes/no and open ended questions. Altogether, twelve preservice teachers were interviewed. In addition, selected SBEs were also interviewed. Candidates' interview consisted of semi-structured and open ended questions that sort the candidates' experiences at the PDS, the quality of mentoring, technology learning experiences with their mentor teachers, theory to practice connection, among others. In addition, twelve teachers were also interviewed. The teachers were asked about the availability of technological resources in their schools, their knowledge and comfort level using these technologies, the challenges they faced and how they mentored preservice teachers in the area of technology integration.

Data were analyzed using the systematic interpretive procedure (Fitzgerald, 1995), similar to the constant comparative method (Bogdan & Biklen, 1998). First, all data collected from the preservice teachers and their teacher mentors were read and reviewed to understand the perspectives they represented. Notes were written on statements, ideas or concepts that served as thinking units in order to sort the data into manageable units.

Next, I perused the entire notes to see if there were patterns and themes in the research literature that were addressed and categories that were evident. For example, I examined the preservice teachers' written reflections and interviews for statements that reveal their particular experiences with technology. I also read the mentor teachers' account of their teaching with technology. Labels were given to tentative topic clusters which were again checked for overlaps. Consistent with Erickson's (1986) evidentiary warrants, emerging themes were compared to new data in order to, 1) ensure adequate amounts, 2) variety of evidence to support claims, 3) check for disconfirming evidence and, 4) discrepant cases. Findings were subjected to triangulation and member checks.

Results

Preservice Teachers' Technology learning experience:

The preservice teachers' technology experiences at the PDS could be placed on a continuum that ranged from satisfactory, mediocre and totally unsatisfactory. Only 32% of the preservice teachers (n=21) agreed or strongly agreed that their teacher mentors or SBEs provided a good model for technology integration. Another 50% (n=33) reported that their mentor teachers did not model any technology use while 12% (n=6) were neutral. The preservice teachers' claim was supported by the data from teachers' surveys and interviews. Fifty percent of the teachers surveyed indicated that they used little or no technology in their teaching.

Among some of the preservice teachers whose mentor teachers used technology, there were indications that technology was used in ways that reproduced the traditional pedagogies, instead of promoting efficacious and integrated learning or productive appropriation. The preservice teachers' technology experiences were nested within several ecological factors that included 1) the extent of PDS collaboration, 2) personal dispositions and, 3) the complexities of technology integration.

The extent of PDS collaboration

In this particular PDS partnership, the extent of collaboration and feedback between the college faculty and school teachers was low. Both the school teachers and faculty had divergent teaching philosophies. In addition, there were still pockets of resistance from some of the school teachers who were yet to buy into the idea of collaboration and mutual critique. Finding time for collaboration and joint planning was also difficult. These challenges of collaboration may have impacted overall technology use by teachers in these schools. The result was that many of the teacher mentors who were working with the preservice teachers did not have enough experience with different technologies and therefore could not model technology use for the candidates.

Personal dispositions toward technology

Personal dispositions toward technology refer to the attitudes, expectations, interests and values attached to technology integration by the mentor teachers and the preservice teachers. Candidates who worked with teachers who were favorably disposed toward the use of technology and who were interested in integrating technology in their classrooms

had positive experience, while those who worked with teachers who were not favorably disposed toward technology had negative experience. This was also true of the interns. Some of the preservice teachers had very favorable disposition toward the use of technology and looked forward to working with mentor teachers on some technology projects while others were negatively disposed to it.

Technology integration complexities

Apart from the problem associated with collaboration and personal disposition, it appeared that the four PDSs were plagued by certain challenges often associated with technology integration in urban schools. Although each school had a computer lab or mobile laptop computers, technology resources and use varied greatly from one school to another and from one teacher to the other. In addition, the demand placed on teachers because of high stakes testing took a center stage, relegating technology use to the background. Teachers were not required to integrate technology in their teaching. These complexities were part of the digital divide. None of these schools had any support personnel that helped teachers integrate technology; neither were there any form of keyboarding training for students. The schools also had very few technologically skilled teachers. While some teachers were very proficient with technology, others were total novices. Some teachers were afraid that introducing technology might increase their work load and shorten the time for other valuable classroom tasks. The most common technology used by the teachers was the overhead projector. The most frequent use of the computers was for research, search and retrieval of information, as well as downloading worksheets to complete some assignments. Web 2.0 technologies such as online asynchronous communication, collaborative tools like classroom blogs and wikis, interactive white boards, social networking, digital storytelling, clickers, among others, were rarely used in all the schools.

Scholarly Significance

While the concept of PDS is laudable, it is important that teacher educators do not live under the illusion that all PDS partnerships meet the laudable goals and expectations of such partnerships. This study lends credence to the claim that effective collaboration is a PDS imperative and the need for stakeholders to understand what it means to be a professional development school (NAPD, 2008).

This study collaborates other studies (Garin, Cruzado-Guerrero & Sabra, 2007) that claim that a void exists between the concept of PDS as proposed by (NAPD, 2008) and the reality of the PDS as it operates in some of the partnerships, especially those in the developing stage of PDS collaboration, including the one under study.

This study highlights the fact that without a mentoring system for school teachers in the area of technology integration, they would hardly support the teacher candidates that they

ought to mentor. Such mentoring can be achieved through a purposeful collaboration between the college and the public schools in the area of technology integration.

Colleges and universities involved in professional development partnership need to ensure that candidates are mentored by model teachers who also utilize technology for their teaching. It is not enough to have a PDS partnership, but making it effective is what matters most.

Expectation for technology- use by mentor teachers should be spelt out as part of the PDS agreement. Finally, public school administrators need to take more active role in developing and supporting preservice programming at their school sites, other than merely opening their classrooms to student teachers or agreeing that their schools serve as designated PDS sites.

References

Armstrong, D. M. (2009). Its more than just working with students: The many advantages of field experiences. *Journal of Field Experiences, 4,* 1-10.

Bogdan, R., & Biklen, S. K. (1998). *Qualitative research for education: An introduction to theory and methods*. Boston: Allyn & Bacon.

Brown, J., Collins, A., & Duguid, P. (1989). Situated Cognition and the culture of learning. *Educational Researcher, 18*(1), 32-42.

Bruce, B., & Hogan, M. (1998). The Disappearance of technology: Toward an ecological model of literacy. In D. Reinking, M. C. Mackenna, L. D. Labbo & R. D. Kieffer (Eds.), *Handbook of literacy and technology: Transformations in a post-typographical world* (pp. 269-281). Mahwah, NJ: Lawrence Erlbaum Associates.

Erickson, F. (1986). Qualitative methods in research on teaching. In C. Wittrock (Ed.), *Handbook of research on teaching*. New York: Macmillian.

Fitzgerald, J. (1995). English as-a -second language learners' cognitive reading Processes: A review of research in the United States. *Review of Educational Research, 65* (2), 145-190.

Garin, E., Cruzado-Guerrero, J., & Sabra, G. (2007). Reading, technology and teacher preparation: Can we do it all within a professional development context? *School University Partnerships, I* (1), 87-95.

Kelly, M. A. (2008). TCPK for equity of access to technology. In AACTE committee on Innovation and Technology (Eds.), *Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators (31-58).* New York: Routeldge

Koehler, M. J., & Mishra, P.(2008). Introducing TPCK. In AACTE committee on Innovation and Technology (Eds.), *Handbook of Technological Pedagogical Content Knowledge (TPCK) for Educators* (3-29). New York: Routeldge

Larson, A. (2005). Preservice teachers' field experience surprises: Some things never change. *Physical Educator, 62(3*), 154-163. Retrieved December, 2009 from Academic Search Premier.

Lemke, J. L. (1998). Metamedia literacy: Transforming meanings and media. In M. C. M. D. Reinking, L. D. Labbo., & R. D Kieffer (Ed.), *Handbook of literacy and technology: Transformations in a post-typographic world* (pp. 283-303). Mahwah, New Jersey: Lawrence Erlbaum Associates.

The National Council for Accreditation of Teacher Education (NCATE) (2010). *NCATE Blue Ribbon Panel on Clinical Preparation, Partnerships and Improved Student Learning*. Retrieved February, 20, from http://www.ncte.org

Webb-Dempsey, J., Steel, S., Shambaugh, N., & Dempsey, Van. (2007.Simultaneous renewal in research: Principles to consider in partnerships: *School University Partnerships 1 (1), 38-44.*

Zhao, Y., & Frank, K. A. (2003). Factors affecting technology use in schools: An ecological perspective. *American Educational Research Journal*, 40, 807-840.