Research Proposal

Antoinette Pinder-Darling

New Jersey City University

Author Note

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Introduction

Technology has changed learning in a beneficial way for the classroom teacher. The introduction of the personal computer and the Internet as a means of expanding teaching and learning opportunities and experiences into the studies and professional work of teachers has been especially valuable. There are new technologies being introduced daily and they are meeting the real promise that educational technology was intended to have on a student's education. The most important effect of these technologies in education is that they allow teaching/learning in the classroom environment to move away from the traditional focus of instruction to a technological design—that involves generating or adapting equipment and technology to serve users needs. When student teachers use these technology tools and are able to construct their own meaning that helps them in the process of difficult, complex, but meaningful learning (Rogers, 2004). It is critical for teacher education programs to equip student teachers with the skills and know-how to create classrooms where utilization of educational technologies is the norm, not the exception, as they begin their journey to become classroom teachers who will utilize technology in their schools with their students.

Background/Problem Statement

The Bahamas won its independence in 1973 and took as a priority the goal of establishing a teacher education division as a branch of a College within The Bahamas (Seymour, Munnings & Gardiner-Farquharson, 2014). The focus of the teacher education division was to train student teachers to earn an education diploma or a bachelor's degree in various subject/disciplines ranging from English Language Education to Workforce Education and Training. Teachers since 1975 have been teacher trained at a College with The Bahamas but may be confronted by limitations to the integration and use of current emerging technology in teaching (Wyld, 1996).

In particular, student teachers may lack experience with the integration of these newer technologies into teaching (Hughes, 2005; Schrum, 1999). With the growth of technology, the time has come to examine the effectiveness of the educational technology course, which student teachers' take as a requirement, within this institution of higher learning. Student teachers should be properly trained to use emerging technologies such as cloud computing, 3D printing and wearable technologies.

Need/Value of the Research

This study will focus on a response to the problem of limited student teacher experience with emerging educational technologies in an education training program at a College within The Bahamas. This case study will focus both on the technologies, and on the design of learning activities that engage student teachers in the purposeful use of technology to solve authentic problems (Laurillard, 2002). The researcher will suggest which emerging technologies can be adopted into the curriculum and the encompassing characteristics that they bring to bear when considering whether or not to adopt an innovation. This research will benefit to the nation and its plan for education. A conference was held at the Lyford Cay School to expose teachers and students to cloud computing (Bahamas Information Services, 2013). Imagine the results, if cloud computing and the incorporation of other cutting edge technologies such as 3D printing and wearable technologies in the classroom were the goal for all private and public schools within the country.

In Rogers' framework, several important factors influence rates of adoption. These factors include users' perceptions of the simplicity of the innovation, their ability to trial and observe it, and their perception of its compatibility with current practices. A user may adopt an emerging technology innovation when s/he decides that the innovation can add value when incorporated

into activities – activities such as teaching (Rogers, 2004). Based on predictions by Linda Darling-Hammond (2005) and Katherine Hammeress (2005), there is no single best way to organize teachers' learning experiences in a teacher preparation programme; however, consideration should be given to using strategies that draw upon common focuses in other classrooms that could be use as benchmarks or models. These authors suggest ways of thinking and acting that should be the focus of training student teachers to incorporate appropriate use of those emerging technologies with the aim of bringing out the best in their teaching practice.

Research Questions

1. To what degree are utilization of educational technologies encouraged by teacher education professors to promote collaborative exchange of knowledge and skills among education majors?
2. To what extent do teacher education students want to apply a new or emerging educational technology into their practice of teaching?
3. How do teacher education professors, in collaboration with their colleagues, use educational technologies to develop their own higher-level thinking skills, decision making and problem solving?
4. What is the effect of the integration of emerging technology on student teachers' attitudes, beliefs, and instructional practices in an education technology course at a College within The Bahamas?

Literature Review

This section includes theoretical perspectives and a review of relevant literature that will be used to provide a powerful lens for understanding processes of emerging—technology integration into the teacher-education curriculum. Perspectives on the role of educational technology will be discussed and suitable technologies identified. The range of perspectives on this topic is broad; therefore, the focus of this section will be on established research and will offer recommendations for integrating the use of educational technology in the training of student teachers.

Overview of Educational Technology Research

The research discussed here will follow a framework that is based on constructivism. Dewey's model of cognitive constructivism portrays the learner as an autonomous agent with individual objectives and priorities. By contrast, Vygotsky's theory of knowledge acquisition, often described as social constructivism, views knowledge as a socially constructed product (Hyslop-Margison & Strobel, 2008).

The Role of Educational Technology in education

Combining technology with educational methods in the classroom allows teachers to enhance student learning and performance. The classroom environment changes tremendously when new technologies are introduced and used to enhance learning (Wiske, 2005). "New technologies can then be used as exciting, cutting-edge tools to assist teachers in providing curriculum for students that is authentic, connected to the real world, and challenging" (Forcier & Descy, 2008, p. 15). Learning becomes both active and interactive. Student teachers shift from teacher-focused to more student-focused learning, where student teachers utilize the technology to both learn for themselves and to teach others. The traditional classroom practices shift to include more technology-enhanced pedagogical training. This study aims to demonstrate that technology modeled by Bahamian teacher educators is purposeful in helping students to use technology to solve problems—and is an effective aid to strengthen classroom learning.

Planning ways to integrate educational technology into teacher education curriculum

Planning is one of those topics that has been widely discussed and given vast coverage in educational literature. If coverage is an indication of value, then it is extremely valuable for the researcher to examine a framework for educational planning as it relates to technology (Picciano,

2011). Proper integration of educational technology into the education curriculum begins with a mindset of wanting to improve and make learning a fulfilling activity for learners (e.g. student teachers). Using 3D in the classroom helps learners to have a better mindset about learning and creating and innovating that also includes or makes provisions for mistakes (Bers, 2008, p. 15). According to Whitaker, Zoul and Casas (2015), educators must become "connected educators" and constant learners who reach out to learn, share, and collaborate with a network of fellow learners interested in education (p. 15). In this literature review, the researcher will also discuss suitable technologies and how social media can be used for the personal and professional growth of student teachers and of teacher educators.

Methodology

Using a qualitative design, the researcher will (adopt a case study approach) to gather, analyze and report data on the experience of student teachers with emerging educational technologies in an education training program at The College of The Bahamas. This group will be the primary participants of the investigation. Case studies are a design of inquiry found in the social science fields, and are linked directly with evaluation, in which the researcher explores in-depth an activity, event, process or program for one or more individuals (Creswell, 2012, p. 14). Gay, Mills and Airasian (2014) suggest that the case study research method is appropriate when the researcher wants to answer a descriptive question (e.g. what happened?) or an explanatory question (e.g., how or why did something happen?). The researcher recognizes that s/he should collect detailed information using appropriate data collection procedures over a realistic period of time (Yin, 2012). Case study research is useful for researching a phenomenon such as individual teachers, a classroom or an educational institution (Gay, Mills & Airasian, 2014, p. 401). Case study researchers must also be concerned about providing thick and rich descriptions

along with triangulating the data to ensure that it is trustworthy or credible—especially when similar findings are derived through two different methods—interviews and observations (Lapan, Quartaroli & Riemer, 2012, p. 251). The researcher has decided to complete a single case study. Using Roger's conceptual framework, the researcher will explore user's perceptions of educational technologies and determine to what degree they want to apply emerging technologies into their practice of teaching.

The population of participants will be undergraduate students majoring in education at the junior and senior levels and the sample size will be 50 students; the case study participants should be screened to determine if they met the requisite student level. The researcher will use purposive sampling, a process of selecting a sample that is believed to be representative of a given population (Gay, Mills & Airasian, p. 575). The researcher is concerned with maximizing the representativeness of information and will seek individuals who can best answer such questions for this study. Purposive sampling is also most desirable for the researcher who wants to seek out alternative views to incorporate into the results of this study (Lapan, Quartaroli & Riemer, 2012, p. 334). This sampling process is most commonly used for case study research, since evaluations (as is popular for case studies) do not usually incorporate random sampling. The instrumentation will be written questionnaires. Students will be asked open-ended questions to gather data about their experiences. The researcher will require a laptop and photocopies of the questionnaire to be distributed to participants; no research assistants will be needed for data collection. Written permission (a letter) would be sent to the Dean of the Education Department and the instructors of the Educational Technology courses to be evaluated. Undergraduate participants will be asked to sign consent forms.

Interview Questions

1) Discuss how, as a pre-service teacher, you have learned skills in your educational technology course that will help you in your field experience?

2) How do you as a pre-service teacher begin the process of learning to teach with technology as you move from college to the school environment? Explain.

3) List the popular technologies used in education with which you are familiar?

4) What emerging technologies do you use to enhance your personal, academic or professional productivity both in and out of the classroom? Explain.

5) Should technology resources be focused on improving basic skills or higher-level thinking? If not, how should it fit in with what teachers already do? Explain.

Delimitation of Study

This study will be limited to undergraduate education students studying in four-year degree programs within the School of Education at a College within The Bahamas. The research will be undertaken in New Providence, Bahamas and will not include students in other Bahama Islands or the West Indies.

Timeline for Completion of Research Proposal

Tasks	Proposed Completion Date
Update Literature Review	November 2015
Revise Methodology	November 2015
Data Collection and Analysis • Prepare the consent forms • Develop interview questionnaire and administer to participants • Assign the data collected to themes and then code it	December 2015
Final Paper	December 2015

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