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Developing Digital Literacy Through Community Engagement

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Abstract: This case study describes how one department of education sought to increase knowledge of digital literacy amongst preservice teachers. Framed by the researchers' Three-Tiered Model of instructional technology use, this project leveraged a community partnership and the implementation of "instructional rounds" to educate students in digital technologies. The mixed-methods study includes pre- and post-surveys results, structured observations, and student reflections. Initial findings indicate students' enhanced digital literacy skills and a reciprocally beneficial partnership with teachers and administrators at a local high school. Ultimately, students who participated in this project led a community-wide professional development workshop.

Introduction

Today, technology plays a pivotal role in the lives of youth. To effectively navigate this environment, young people are required to be digitally literate. Arguably, teaching digital literacy is essential now more than ever before (Krueger, 2017; Truesdell & Birch, 2013; Urbani, Roshandel, Michaels, & Truesdell, 2017). "Digital literacy is necessary to become digital citizens; individuals are responsible for how they use technology to interact with the world around them," ("Digital Literacy in the Classroom," 2017). Indeed, researchers have found that TK-12 students in the U.S. may be more digitally fluent, but lack the confidence to leverage it in educational settings. As a result, faculty must teach digital literacy skills while simultaneously teaching content. Not all faculty have the background or training to accomplish this, leading some institutes of higher education (HEIs) to seek affiliations across disciplines and with community partners (Alexander, Adams-Becker, & Cummins, 2016).

Studies have unearthed many benefits from the creation of university–community partnerships (Buys & Bursnall, 2007). When sustainable partnerships between higher education institutions and communities occur, a synergetic relationship exists between the communities and HEIs. Communities assist to provide essential human resources for higher education systems to foster and carry out their purposes. HEIs in turn train students who are eventually employed and established in society (Jacob, Sutin, Weidman, & Yeager, 2015).

This research led the department of education at our university to seek out a partnership with a local high school known for its innovation around instructional technology and teaching digital literacy skills to 9-12th graders. Faculty chose to frame the experiences around instructional rounds (IRs). IRs are a disciplined way for educators to work together to improve instruction. Participants experience reciprocal learning through observing fellow teachers in the classroom and debriefing afterward (City, Elmore, Fiarman, & Teitel, 2009; Fowler-Finn, 2013). While rounds are an increasingly common form of professional development for administrators and teachers, they are less frequently used in preservice programs with teacher candidates (Williamson, & Hodder, 2015). Our IR learning model is unique because it engages preservice and inservice teachers in collaborative, mutual learning regarding the development of digital literacy.

The Study

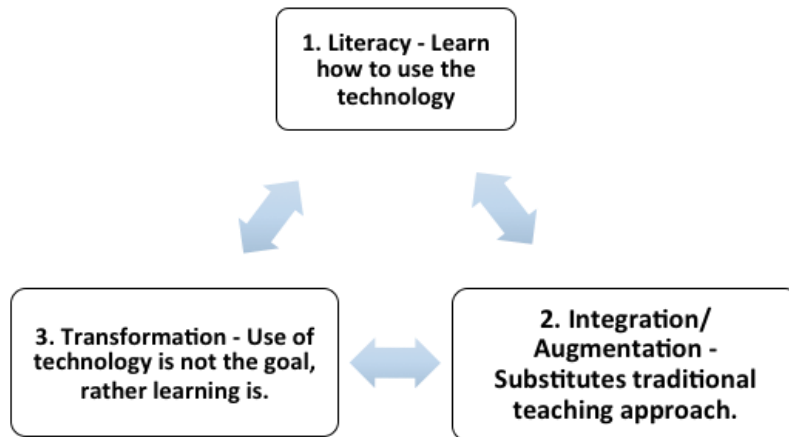
Researchers investigated existing models of instructional technology implementation prior to developing this project. Subsequently, the Substitution Augmentation Modification Redefinition Model (SAMR), and the Technological Pedagogical Content Knowledge (TPACK) frameworks inform the Three-Tiered Model. These models emphasize the importance of engaging students in learning experiences that cannot be accomplished without technology (Puentadura, 2012), and provide a structure that requires a linked relationship between technology, pedagogy, and content (Koehler & Mishra, 2009).

Digital learning was utilized by applying the Three-Tiered Model. This consists of Tier One – Literacy, Tier Two – Integration/Augmentation, and Tier Three – Transformation (see Table 1). We applied this approach initially as a pilot in one program on campus. This approach is now used throughout our education programs and extends to preservice teachers and their fieldwork.

At the beginning of the teacher credential program, the preservice teachers were enrolled in, *Using Technology in the Classroom*. Throughout this course, students studied how to use new technologies, thus engaging in Tier One, Literacy. As students progressed throughout the course, they practiced, adopted, and integrated technology tools into their fieldwork. They experimented with instructional technology and incorporated technology tools in place of traditional teaching practices. At this time, students experienced Tier Two, Integration/Augmentation.

During the final semester of the credential program, preservice teachers teach full time in K-12 schools. They use technology as a tool while primarily focusing on the learning, not the technology. Throughout this progression, students are shifting to Tier Three, Transformation.

Table 1: Three-Tiered Model



Findings

Although digital literacy research is growing in the TK-12 sector, there exists a paucity of research on similar initiatives in post-secondary education, and more specifically in teacher preparation programs (Kosnik, 2016; Urbani, Roshandel, Michaels, & Truesdell, 2017). To address this deficit, researchers conducted pre-post surveys at the beginning of the program and at the end of the first semester after participating in IRs with the community school partner. Initial findings indicate perceived increased levels of digital literacy competency amongst preservice teacher candidates. Results of pre-post survey questions follow (N=23).

Table 2: Digital Literacy Pre-Survey - How would you rate your proficiency level in the following?

Response Legend: 1 = Weak 2 = Adequate 3 = Strong 4 = Very Strong

PRE-SURVEY	1	2	3	4
Using educational technology	6.25%	43.75%	43.75%	6.25%
Developing a website	56.25%	25.00%	12.50%	6.25%
Current trends in educational technology	20.00%	53.33%	20.00%	6.67%
Digital literacy	6.25%	25.00%	43.75%	25.00%

Table 3: Digital Literacy Post-Survey - How would you rate your proficiency level in the following?

Response Legend: 1 = Weak 2 = Adequate 3 = Strong 4 = Very Strong

POST-SURVEY	1	2	3	4
Using educational technology	0.00%	0.00%	26.09%	73.91%
Developing a website	0.00%	8.70%	43.48%	47.83%
Current trends in educational technology	0.00%	8.70%	26.09%	65.22%
Digital literacy	0.00%	8.70%	17.39%	73.91%

In addition to quantitative data, researchers collected qualitative data from open-ended questions and debriefs after the IRs. Results reinforce the quantitative data findings, supporting the development of digital literacy skills in our preservice teachers. For instance, when asked how they might implement technology and promote digital literacy with their future K-12 students, one participant stated, “I am not so afraid of technology anymore. I can embrace it!” Another listed the specific applications and techniques she’ll now use in her future classroom, including leveraging social media applications like Twitter and Instagram.

Participating teachers at the community school shared results of their enhanced emphasis on teaching digital literacy skills with their students. One cited the swift re-designation of English Language Learners due to the tools and skills taught. Another teacher described her approach to teaching to the preservice teachers. “Technology is a given. If you use it, the students will gravitate toward it . . . otherwise you will die on the vine.”

As evidenced in quantitative and qualitative data collected, preservice K-12 teachers increased their perceived levels of proficiency in using instructional technology and teaching digital literacy skills to future students. The implementation of the Three-Tiered Model successfully navigated participants through the process.

The next stage of data collection will occur during professional development sessions on the university campus. Preservice teachers in their final semester will develop and implement workshops for the teachers from the community partner school. Researchers will conduct structured observations of the workshops, and request ‘exit tickets’ for both preservice teachers’ the inservice teachers’ feedback. The intent moving forward will be to continue IRs and professional development sessions with future cohorts, and using data findings and analysis to adapt as needed.

Conclusion

In summary, this study describes how one department of education addressed the growing need for developing digital literacy through leveraging a community partnership. Informed by the Three-Tiered Model of implementing instructional technology, participants experienced instructional rounds at a local high school. These IR’s provided preservice teachers the opportunity to observe and engage with in-service teachers’ practice. Initial findings support existing literature on the positive impact of community partnerships with HEI’s and implementation of instructional rounds to inspire reciprocal learning opportunities (Buys & Bursnall, 2007; City, Elmore, Fiarman, & Teitel, 2009; Fowler-Finn, 2013).

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