Teaching with Technology: The Role of the Instructional Coach

Regena F. Nelson and La Shaunda Webb

Abstract— **The Teaching with Technology professional development model was developed to create a comprehensive technology plan that would support teaching and learning in teacher education courses. This study explains how an instructional technology coaches help faculty transform their teaching by giving them new tools, information and skills.**

Keywords-coaching; technology; learning community

I. BACKGROUND

Currently, all elementary education students are required to take an educational technology course that focuses on how technology is used to support student inquiry and problem solving in the classroom. In this course, students design a multidiscipline project that includes student collaboration and use of digital technologies. Beyond this class, how to use technology is not explicitly taught. Thus, students do not receive additional opportunities to practice how to seamlessly incorporate technology into their teaching. An ad hoc committee was formed to address this issue and to gather information on why faculty were not modeling new technology techniques in their education classes. The 3 most frequent faculty responses to inquiries about their lack of technology use were: 1.) lack of knowledge about new technology; 2.) lack of access to new technology and; 3.) lack of time to learn about new technology. The ad hoc committee developed a plan to address these obstacles.

Higher education faculty have raised these issues in other studies on teaching with technology. Griffin-Famble conducted a study to determine what type of training faculty needed to narrow the technology gap between them and their students [1]. While awareness for the need for more training was evident, the faculty lack the additional time that was required to learn how to appropriately implement the new teaching methods, software and equipment into their courses. They also wanted immediate and open access to technical support as part of the training and implementation process. She also found that faculty needed incentives for adding training to their workload. She recommended giving faculty release time, new software and equipment for completing the training.

The Teaching with Technology professional development model was developed to create a comprehensive technology plan that would support teaching and learning in teacher education courses. The professional development plan includes 1.) a conceptual framework; 2.) a list of essential components 3.) and a rationale for each component of the plan.

II. CONCEPTUAL FRAMEWORK

A. Teaching with Technology

The phrase "Teaching with Technology" reflects the faculty's strong belief that: 1.) effective teaching can happen without technology; 2.) not all technology devices will be appropriate for the classroom; and 3.) some aspects of teaching can be enhanced with appropriate technology.

This framework is guided by a vision for what a highly effective teacher must be able to do. The faculty agreed that their instructional goals should be aligned with this vision statement for effective teaching.

B. Vision Statement

We are dedicated to preparing teachers that are effective communicators and problem solvers who are responsive to the needs of all learners. Our graduates are reflective practitioners who model deep engagement with content knowledge through thoughtful use of pedagogy, technology and assessment**.**

This vision statement aligns with the International Society for Technology in Education standards listed below[2].

- Facilitate and inspire student learning and creativity through subject matter knowledge.
- Design and develop digital age learning experiences and assessment.

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- Model digital age work and learning: collaboration, problem solving and communication skills.
- Promote and model digital citizenship and responsibility
- Engage in professional growth and leadership by reflecting on current research and practice.

III. PROJECT COMPONENTS AND RATIONALE

The faculty committee requested funding to purchase technology; hire an instructional technology coach to provide on-site professional development while they teach their classes; and financial support for a learning community that focuses on sharing information regarding K-12technology.

A. Faculty Technology Project Proposals

The project began by inviting faculty members to submit project proposals with a detailed plan for how they would use technology to meet their course objectives. They also provided a list of the technology they would need for their projects. The faculty committee requested detailed proposals to ensure that the technology requests were appropriate to meet the instructional needs of the course. Previous studies on technology integration report that it works best when there is a specific course assignment that will require the students to use the technology [3].

B. Instructional Technology Coach

An essential component of the plan is the Instructional Technology Coach. The IT Coach's responsibilities are to work one-on-one with faculty on technology integration projects in the classrooms on campus and in courses held in K-12 schools. The IT Coach is also a liaison between the university and the public schools. The IT Coach keeps the faculty updated on how technology is being used in K-12 classrooms. Research has shown that aspiring teachers expect their professors to model how technology can be used to increase academic success for K-12 students [4].

The IT Coach also develops the policies for equipment usage and evaluates the project. The IT Coach analyzes student data to determine if the use of technology increases students' use of higher-order thinking skills in education courses. Research has shown that certain software can be used to engage students at all levels of Blooms Taxonomy in the classroom (See chart in appendix).

C. Faculty Learning Community

The Teaching with Technology Learning Community was developed to provide faculty a forum to discuss their technology projects, share resources about technology and collaborate on research projects. Fullan reported that scheduling time for colleagues to discuss ideas about teaching will systematically improve teaching and learning [5].

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IV. RESULTS

The Teaching with Technology project was launched in June when faculty submitted proposals for technology integration projects. Based on the group's focus on using iPads in the classroom, a 2-day workshop with Apple on iPad apps was held in August. In September, the Teaching with Technology Faculty Learning Community started its bi-weekly meeting schedule. In November, the IT Coach was hired. She started developing the policies for equipment usage and the evaluation model. The technology for the project was purchased in December. Next the Instructional Technology Coach administered a pre-project assessment to the faculty in the learning community. The IT coach wanted to establish a baseline for faculty expertise to determine the impact of the model on faculty comfort level and use of technology and software.

She found that 100% of the faculty were comfortable or very comfortable with technology. Collectively they used 15 different types of instructional and productivity software. Some of them used Wikispaces, Hootsuite, TweetDeck, Dropbox, Google Hangouts and Skype on a daily basis. They needed more support with finding the right software to meet their needs and getting trained on how to use it. Once they have the right software and training they hoped to be able use video in their teaching, post advanced organizers, gather more audience feedback, simplify electronic grading, facilitate group work, organize course information, create interactive presentations, share compelling stories with slide shows, flip their classrooms and observe students in their field placements.

A. Projects

The faculty projects were launched in the fall. Below is a list of the projects they proposed and developed.

Student-produced instructional videos

Develop application-based lessons with video integration

Securing a Teaching Job - Interview and Electronic Teaching Philosophy Videos

Using Coaches Eye, the student will upload selected task analyses and assess the motor skill performance of assigned children in an applied setting.

Using an iPad, remote microphone and a d-ring adapter, the student will video-record and subsequently analyze teaching settings.

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Student will upload a teaching performance video recording to VIMEO.com or a similar free site and set appropriate privacy controls.

Use TeachLive and Bug in the Ear to support developmental growth within the pre-service teaching context and practicum experiences.

Provide students with additional opportunities to develop their capacity in data-based decision making by incorporating technology more meaningfully into the practicum experiences (using Aims Web to track personal and student progress and performance

Provide students with opportunities for incorporating iPad applications for the academic development of assigned K-12 students, and for utilizing video performance feedback and reflection with their peers.

Use software to view and analyze data related to child assessment and progress

Use an interactive electronic textbook to bring course content to life.

Use, integrate, and model appropriate "Apps" into teaching strategies.

Use iPads to support student creation of interactive lessons and units.

V. CONCLUSION

The project has completed the first year of a two-year pilot project. The successes for the project thus far, are the Faculty Learning Community and the Instructional Technology Coach. The Faculty Learning Community has allowed faculty to share resources on teaching technology and collaborate on research presentations about their work. The I T Coach devoted numerous hours to getting the software approved by the university and developing equipment usage policies. Because of her shift in focus from professional development support to technical assistance she developed a stronger working relationship with informational technology staff than with the faculty. Therefore, the faculty became more reliant on each other for professional development through the learning community than on the I T Coach. They used the I T Coach for technical assistance more than professional development support. To prioritize the professional development role for the I T Coach, we recommend that the I T Coach consult with faculty as they develop their projects to help them choose the most appropriate software and tools. We also suggest making coaching sessions a requirement for the program.

The 2nd lesson learned was about developing policies for mobile devices and data sharing in schools. There were no policies in place for how this happens. This was a major contextual limitation for the project. Thus, the project could not be implemented until the policies were created and approved. This process has taken 6 months to complete at our institution. It was a much longer and complicated process than we had expected it to be. To avoid creating and implementing university liability protection policies that require security clearances for software and contracts for equipment, we recommend having students use their own mobile devices rather than university owned equipment. This will simplify the start-up process for launching an integrated technology project.

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AUTHOR'S PROFILE

Regena F. Nelson is the Chair of the Department of Teaching, Learning and Educational Studies at Western Michigan University and a Professor in early childhood education with over twenty years of research, teaching and consulting experience in the field. She has conducted numerous research studies on developmentally and culturally appropriate curriculum, instruction and assessment. She has a Ph.D. from the University of Michigan in Education and Psychology.

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Appendix

Bloom's Taxonomy for Apps

a) *Understanding*

ScreenChomp
Motion Match
123 Charts
Idea Sketch
Corkulous
Blogsy
Good Reader
Touch Draw
Pages

b) *Applying*

ShowMe
Poetry Creator
Keynote
Visualize
Posterous
ZigZag Board
Presentation Link
Xperica
HearHD

c) *Evaluating*

HootSuite
Skype

d) *Mobile RSS*

Zite
FlipBoard
Instapaper
Goodreads
Wunderlist

e) *Creating*

Audioboo
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ComicBook!
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