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## **Faculty Teaching Faculty: A Model of Professional Development for Mobile Learning Integration in Higher Education**

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**Abstract:** The purpose of this study was to document faculty perceptions on the impact of an instructional designer supported, faculty peer instruction model of professional development. The aim of the study was to identify how this faculty development model impacts course design, assessment strategies, and the integration of mobile technology in teaching and learning. Data was collected during a three-day mobile learning, professional development program, via pre and post survey and a focus group meeting. Results indicate that faculty benefited positively from their experience. Faculty reported that they learned methods for integrating mobile learning into their course design and gained knowledge of assessment strategies to measure student learning. Limitations of this study are noted and recommendations have been provided which may be useful to both faculty professional developers as well as instructors seeking to improve their teaching and learning.

### **Introduction**

Faculty peer mentoring has been found to be useful in various aspects of faculty professional development like new faculty individual and collective scholarship productivity (Jacelon, 2003). A supportive learning environment often made available through a peer mentoring situation, can lead to sense of personal transformation and empowerment in some faculty members (Pololi, Knight, Dennis, & Frankel, 2002) while for others it may help improve instruction (Harnish & Wild, 1993).

### **Background**

Even though there have been many studies documenting the role of peer mentoring across semester or year-long programs, the researcher did not find studies demonstrating the impact of faculty peer mentoring in short-term mentoring programs, where more experienced faculty mentor less experienced ones. Moreover, the impact of short-term faculty peer mentoring supported by professional staff has not been studied, especially when it concerns the use of educational technology in teaching and learning. The IDEA (Instructional Design and Educational Assessment) shop, which is a unit working under the Center for Teaching and Learning at Boise State University, holds an annual three-day Mobile Learning Summer Institute (MLSI), to provide professional development to faculty interested in integrating mobile technologies for teaching and learning, into their courses. The learning in this institute occurs through the use of a professional development model, wherein faculty learn from each other, supported by professional staff (instructional designers and other educational technology specialists). During the course of the three-day training institute, faculty mentors (typically advanced and experienced users of mobile technologies for learning) presented to attendees, proven strategies and methods for successful mobile device integration. Mentors also delivered a series of breakout sessions that provided hands-on training on a variety of mobile applications.

Historically, many faculty completing the MLSI, choose to participate in more long-term professional development opportunities provided by the IDEA shop, namely the semester long Mobile Scholars Programs (Levels 1.0, 2.0, and 3.0). As a benefit for participating in the MLSI, faculty received an iPad for educational use. However, faculty were not paid to participate in the MLSI or the accompanying study.

## Method

The purpose of this study is to document faculty perceptions of a professional development model, which is delivered through faculty peer instruction and supported by instructional design professionals. The goal is to know how this approach to faculty development can affect course design, assessment strategies, and the integration of mobile technology in teaching and learning. Also, MLSI participant experiences, as documented in this study, will be used to provide recommendations for best practices/the potentialities of using an instructional designer supported faculty peer instruction model of professional development. The following research questions guided this study:

### Research Question(s):

1. How does an instructional designer supported, faculty peer instruction model of professional development, impact course design, as measured by the qualitative analysis of responses to an electronic survey and focus group meeting?
2. How does an instructional designer supported, faculty peer instruction model of professional development, impact assessment strategies, as measured by the qualitative analysis of responses to an electronic survey and focus group meeting?
3. How does an instructional designer supported, faculty peer instruction model of professional development, impact integration of mobile learning in faculty teaching and learning, as measured by the qualitative analysis of responses to an electronic survey and focus group meeting?

It was hypothesized that as a result of having the instructional designer supported, faculty peer instruction model of professional development, experience at the MLSI, faculty will report:

1. Knowledge of improved ways to integrate mobile learning in their course design.
2. Knowledge of improved strategies for assessment of student learning.
3. Knowledge of improved ways to integrate mobile learning in their teaching and learning.

Participants in this study consisted of faculty selected to take part in a three-day mobile learning faculty professional development institute (Mobile Learning Institute 2016) delivered by the IDEA shop. The call for MLSI applications was posted in mid-Spring 2016 with final selections made and acceptance notifications delivered by mid April. Faculty appointments of the attendees included 3 (20%) adjunct instructors, 3 (20%) lecturers, 1 clinical instructor (7%), 5 (33%) tenure-track instructors, and 2 (13%) tenured instructors. There was also 1 (7%) professional staff attendee. Years of teaching experience, collectively from attendees, ranged from one year to twenty five years. Attendees' prior experience using mobile technologies ranged from novice to advanced levels. Fifteen faculty members were selected to participate in the MLSI. Faculty development training was delivered to all MLSI attendees, irrespective of whether they agreed to participate in the research study or completed the data collection instruments.

Faculty participating in the Mobile Learning Institute, attended three days of faculty development training, delivered by their peer faculty and instructional designers from the IDEA shop. Participating in the provided training was a requirement of the MLSI and was mandatory, irrespective of participation in the research study. Participants of the study, were sent emails (containing links to the surveys) asking them to complete electronic pre and post surveys (qualtrics.com based). Each electronic survey took approximately 10 minutes to complete. The post MLSI focus group meeting took approximately 30 minutes to complete. Fifteen (100%) participants responded to the pre-MLSI survey, and 11 (73%) responded to the post-MLSI survey. There were 7 (47%) participants at the post MLSI focus group meeting. While the pre and post-MLSI surveys contained similar questions, the post-MLSI survey contained 10 (45%) additional questions, since the latter were deemed to be more appropriate towards gathering data in the post MLSI stage.

## Results

The results of our study are addressed below. We have separated the results by our research questions (RQ) and then by emergent themes.

RQ1: How does an instructional designer supported, faculty peer instruction model of professional development, impact course design, as measured by the qualitative analysis of responses to an electronic survey and focus group meeting?

When asked about how the instructional designer supported, faculty peer instructor model of professional development, impacted course design, ten themes emerged. Each of these themes are summarized below:

**Theme 1: Meeting learning outcomes.** In the pre-MLSI survey, only 33% of participants indicated that they had reflected on how learning objectives, activities, and assessments can be completed using mobile devices and apps. While in the post-MLSI survey, 100% of participants indicated that they had now reflected on how learning objectives, activities, and assessments can be completed using mobile devices and apps.

**Theme 2: Understanding the pedagogical applications of mobile devices and use of apps.** Ninety two percent of the post-MLSI survey respondents reported that by attending the MLSI, they attained moderately effective or very effective levels of learning regarding the pedagogical applications of mobile devices in course design. A 100% of the post-MLSI survey respondents also reported that they had attained moderately effective or very effective levels of learning regarding the pedagogical uses of new and/familiar mobile apps.

**Theme 3: Using mobile devices to design unique cross-disciplinary and service learning opportunities for students.** While before attending the MLSI, only 27% of the participants agreed or strongly agreed that they had reflected on how to use mobile devices to design unique cross-disciplinary and service learning creation opportunities for their students, after attending the MLSI that percentage rose up to 91%.

**Theme 4: Incorporate active learning techniques.** The pre-MLSI survey indicated that while only 40% of the participants reflected on ways to incorporate active learning techniques in combination with mobile apps to achieve course objectives, after attending the MLSI, 100% indicated that they now reflected on the same.

**Theme 5: Team based activities.** While the pre-MLSI survey indicated that only 20% of the participants had reflected on how team based activities in their courses can be completed using mobile devices/apps, the post MLSI survey indicated that 91% of the participants had now done that same reflection.

**Theme 6: Scaffolding and motivation.** One instructor explored emerging mobile applications that could be used to create in-text callouts, guiding students through a document and thus scaffolding their learning. Another instructor planned to use the iMovie app to create a introduction trailer for her course. The custom trailer was designed to engage students by highlighting the course content and instructor, thus increase student motivation to take the class.

**Theme 7: Peer feedback.** A teacher education program instructor mentioned that she would ask students to use an iPad to record their student teaching and then share it with peers in a group to gather peer feedback on their teaching practice.

**Theme 8: Increase instructor-student and student-student communication/interaction.** Instructor-student communication may also increase since in the pre-MLSI survey, only 33% of the participants indicated that they were familiar with anytime, anywhere, communication apps like Google Hangouts. While the post-MLSI survey indicated that 91% of the MLSI attendees now knew how to communicate using the same types of apps. Others talked about using mobile devices and apps, like Notability, to have students complete group work and to easily provide access to electronic feedback. While the pre-MLSI survey indicated that only 13% of the participants were familiar with the use of interactive note-taking apps like Evernote, Notability, and Paperport Notes, the post-MLSI indicated that 73% of the participants now had basic knowledge of how to facilitate interactive note-taking using such apps.

**Theme 9: Assignment design.** When asked whether participants had reflected on how to design assignments, which can be completed, both manually as well as digitally (enabling students who don't have access to technology to

continue to learn), only 33% of the participants in the pre-MLSI survey either agreed or strongly agreed. After attending the MLSI, that percentage rose up to 45%.

**Theme 10: Content creation.** One instructor indicated her desire to create original content by using mobile devices to create asynchronous listening exercises for a language learning course.

RQ2: How does an instructional designer supported, faculty peer instruction model of professional development, impact assessment strategies, as measured by the qualitative analysis of responses to an electronic survey and focus group meeting?

When asked how does an instructional designer supported, faculty peer instruction model of professional development, impacted assessment strategies, four themes emerged, which are summarized below:

**Theme 1: Quicker grading.** Before attending the MLSI, only 53% of the instructors were familiar with the Blackboard Mobile and Blackboard Grader apps, after attending the MLSI, 82% of the instructors indicated that they were now familiar with the same apps.

**Theme 2: Formative feedback.** An English instructor mentioned that she wanted to use the iPad to provide students with formative, audio-recorded feedback, on their writing drafts. She also commented that she would like to use an interactive presentation app, like Nearpod, to increase class interaction and student response.

**Theme 3: Formative assessment.** As indicated by the pre-MLSI survey, none of the participants had basic knowledge on how to conduct formative assessment using apps like Socrative. After attending the MLSI, 73% of the attendees agreed or strongly agreed to having that knowledge.

**Theme 4: Student response systems.** Before attending the MLSI, only 13% of the participants indicated that they had basic knowledge of how to enable student-instructor interaction using student response apps like Reef and Poll Everywhere. After attending the MLSI, 82% indicated knowledge of these apps.

RQ3: How does an instructional designer supported, faculty peer instruction model of professional development, impact integration of mobile learning in faculty teaching and learning, as measured by the qualitative analysis of responses to an electronic survey and focus group meeting?

When asked about how the instructional designer supported, faculty peer instructor model of professional development, impacted integration of mobile learning in faculty teaching and learning, four themes emerged. Each of these themes are summarized below:

**Theme 1: Peer faculty and instructional designer facilitated learning.** A 100% of the survey respondents reported having higher levels of knowledge pertaining to how their peer faculty use mobile devices in their classroom. Participants reported that it was helpful to learn about both the successes and failures of fellow faculty who have used mobile learning and devices in their teaching and learning. Actual examples of mobile device use in the classroom, was a more powerful learning experience than just hearing about the potential pedagogic benefits of mobile learning. A faculty reported that the MLSI was a common meeting ground where faculty from various disciplines presented on their mobile teaching and learning experiences, and this provided a more interdisciplinary perspective than just hearing from colleagues from a home or one specific department.

**Theme 2: Plans for integrating mobile learning and devices in teaching and learning.** One instructor mentioned that she really liked how the use of mobile devices can untether the instructor from the classroom podium. This is useful when the classroom physical space is not suited for student-student and instructor-student interaction. While in the pre-MLSI survey, only 13% of the participants indicated that they had basic knowledge of interactive presentation apps like Solstice, Haiku Deck, Keynote, Adobe Slate, Adobe Voice, and Nearpod, that percentage increased to 91% after attending the MLSI. Basic knowledge of mobile apps, like Celly, which can facilitate social interaction in and outside of the classroom, was reportedly increased from 33% in the pre-MLSI survey to 100% in the post-MLSI survey.

The MLSI provided one instructor the chance to think about different learning styles and how technology can facilitate multi-modal learning. An instructor mentioned that having an subject matter doctoral degree often does not

prepare instructors to be good teachers. Professional development opportunities like the MLSI offer much needed training for faculty, in pedagogy and technology integration in teaching and learning.

**Theme 3: Impact on student learning.** Instructors reported that attending the MLSI helped them to think about teaching and how the use of technology can make learning a fun and engaging experience for students. Using and experimenting with various types of technology at the MLSI has made instructors open to implementing them in the classroom. Instructors were also confident that use of technology in the class would prepare students to use and learn new technologies at their workplaces. Some instructors acknowledged that technology use could require a learning curve. They also felt it was important to teach students troubleshooting techniques when technology use did not go according to plan. An instructor mentioned that selected math apps have the potential to make concepts in geometry more clear for students. Another instructor mentioned that it is important not to overload students with too many applications or devices since that will create a cognitive load and hamper learning. Generally, instructors felt that working with a small number of basic apps is a good place to start.

**Theme 4: Sharing learning with peers and larger campus community.** Over 90% percent of the survey participants indicated that they would like to share/pass on their learning from the MLSI with their department colleagues who teach similar courses.

## Discussion

The results of our inquiry show that the majority of faculty who participated in the instructional designer supported, faculty peer instruction model of professional development, in the MLSI, reported that they benefited positively from their experience. Knowledge of how their peer faculty used mobile devices in their own classrooms was useful. Specifically, it was helpful to learn about both the successes and failures of fellow faculty who have used mobile learning and devices in their teaching and learning. Actual examples of mobile device use in the classroom was identified as a more powerful learning experience than just hearing about the potential pedagogic benefits of mobile learning. Faculty reported knowledge gains in the areas of mobile learning integration, course design, active learning techniques, and strategies for assessment.

However, this study had several limitations. One limitation of the study was the small sample size. The study also included participants who may have a bias, based on their previous interest in learning how to integrate mobile technology, as indicated by their choice of applying to attend the MLSI. A larger number of participants completed the pre-MLSI survey as compared to the post-MLSI survey and only 7 (47%) participants attended the focus group meeting. No follow up survey was done with the participants to know whether they have actually implemented/used their learning at the MLSI, in their actual teaching.

## Recommendations for Professional Development Best Practices

Based on the results of this study, we have identified some implications for practice. These implications can be beneficial to both faculty developers as well as faculty aiming to use mobile learning strategies and technology in their teaching and learning. The following recommendations have emerged from our study:

- Faculty might find it helpful to learn about both the successes and failures of fellow faculty who have used mobile learning and devices in their teaching and learning.
- Actual examples of mobile device use in the classroom, is often a more powerful learning experience than just hearing about the potential pedagogic benefits of mobile learning.
- Faculty might find it useful to hear interdisciplinary, rather than department exclusive, perspectives on technology and pedagogy integration.
- Often, a disciplinary doctoral degree does not prepare faculty to be good instructors, therefore professional development with a focus on pedagogy is essential.
- Professional development opportunities that focus on educational technology integration may provide instructors with rich opportunities to think about different learning styles and how technology can facilitate multi-modal learning.

## Conclusion

Results from the study indicated that the instructional designer supported, faculty peer instruction model of professional development, was useful for instructors in multiple ways. Our hypothesis was supported in that participants at the MLSI, gained knowledge of technology integrated course design, impactful assessment strategies, and best practices for mobile technology enhanced teaching and learning. Recommendations that may be useful for both faculty professional developers, as well as faculty seeking to improve their teaching and learning, have been provided.

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