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

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**Note:** Table of Contents has a conflicting error and lists the title as "Faculty Perceptions on an Instructional Designer Supported Faculty Peer Instruction Model of Professional Development". Title listed here is on the final published version of the book chapter itself.

# 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 is often used in higher educational institutions to acclimatize faculty members to their academic disciplines and departments, as well as to support retention (Colón-Emeric, Bowlby, & Svetkey, 2012; Thomas, Bystydzienski, & Desai, 2015). Often, mentoring can be used to bring about changes in organizational culture, benefiting historically marginalized populations like women and faculty of color (Driscoll, Parkes, Tilley-Lubbs, Brill, & Bannister, 2009; Núñez, Murakami, & Gonzales, 2015). 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). Peer mentoring takes on an added dimension where faculty teach online, are placed at distant locations from each other, and hardly ever get a chance to meet their colleagues face-to-face (Dabl, 2005; Shelton, 2009).

## Background

Peer mentoring is often suggested to be an efficient way to support faculty productivity and retention (Benson, Morahan, Sachdeva, & Richman, 2002; Fountain & Newcomer, 2016) but studies on the actual implementation of peer-mentoring professional development programs are scarce (Colón-Emeric, Bowlby, & Svetkey, 2012). Even though there have been many studies documenting the role of peer mentoring across semester or year-long programs, the researchers 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 (IDEA) 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 was to document faculty perceptions of a professional development model, which was delivered through faculty peer instruction and supported by instructional design professionals. The goal was 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, were 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?
2. How does an instructional designer supported, faculty peer instruction model of professional development, impact assessment strategies?
3. How does an instructional designer supported, faculty peer instruction model of professional development, impact integration of mobile learning in faculty teaching and learning?

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 knowledge of improved:

1. ways to integrate mobile learning in their course design.
2. strategies for assessment of student learning.
3. 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 Summer 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 of summer 2016. 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.

The study used two data gathering instruments. An anonymous pre and post MLSI completion survey and a post-MLSI focus group meeting question protocol. Two instructional designers from the IDEA shop, who are subject matter experts, determined the face validity of the survey and focus group question instruments.

Faculty participating in the MLSI, were informed about the study on the first day of the Institute and were verbally recruited to participate. While all participants of the MLSI were sent the pre and post MLSI surveys, data from only those that consented to participate in this research study are being reported here. Faculty received emails (containing links to the surveys) asking them to complete the online pre and post training surveys (qualtrics.com based). Each online survey took approximately 10 minutes to complete. The post MLSI focus group meeting took approximately 30 minutes to complete. Participants of the focus group met face-to-face in a campus location with one of the researchers. Responses were audio recorded and transcribed for further analysis. The survey and focus group instruments were created with the aim of gathering supporting information to answer the research questions of this study.

The pre-MLSI survey instrument had 22 multiple-choice questions (See Appendix A) while the post-MLSI had 28 multiple-choice questions (See Appendix B). The focus group question protocol contained 5 open-ended questions (See Appendix C). Both the pre and post MLSI surveys contained questions which can be broadly grouped into the following categories: 1) knowledge of mobile application and device use, 2) knowledge of pedagogical applications of mobile learning and devices, 3) knowledge of assessment strategies using mobile learning and devices, 4) self-perception of level of digital fluency. The pre-MLSI survey contained demographic questions, while the post-MLSI survey had questions seeking information regarding faculty plans for sharing information learned at the MLSI, and perceptions regarding impact of the training on student learning. The post-MLSI focus group meeting contained questions regarding the impact of: 1) instructional designer supported faculty peer mentoring, 2) learning gained at MLSI on course design and assessment strategy, 3) perceived impact on student learning, 4) plans for integrating mobile learning and devices in the classroom. As needed, clarifying questions were asked to enable complete data collection. While the pre and post-MLSI surveys contained similar questions, the post-MLSI survey contained 6 additional questions, which were deemed to be more appropriate towards gathering data in the post MLSI stage. 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.

## 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?

When asked about how the instructional designer supported, faculty peer instructor model of professional development, impacted course design, ten themes organically emerged from the responses made by participants and aligned most closely to answering the research questions of this study. Each of these themes are summarized below and reflect responses from both the survey and focus group:

**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 an introduction trailer for her course. The custom trailer was designed to engage students by introducing the course content and instructor, thus increasing 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 in courses taught by MLSI attendees. 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?

When asked how an instructional designer supported, faculty peer instruction model of professional development, impacted assessment strategies, four themes organically emerged from the responses made by participants and aligned most closely to answering the research questions of this study. Each of these themes are summarized below and reflect responses from both the survey and focus group:

**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 facilitate class interaction and student feedback.

**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?

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 organically emerged from the responses made by participants and aligned most closely to answering the research questions of this study. Each of these themes are summarized below and reflect responses from both the survey and focus group:

**Theme 1: Peer Faculty and Instructional Designer Facilitated Learning.** A 100% of the post-MLSI survey respondents reported having higher levels of knowledge pertaining to how their peer faculty use mobile devices in their classrooms. 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 of 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 a 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 for 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, felt that they benefited positively from their experience. This was not a surprise since though the benefits of peer mentoring are well known, not all faculty have access to or participate in peer mentoring (Gessous et al., 2015). The results of this study were also in keeping with earlier studies, where the long-term impact of facilitated peer mentoring brought about positive benefits like increase in

discipline related academic publications among mentored faculty (Mayer, Blair, Ko, Patel, & Files, 2014). Knowledge of how exactly 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. Thus, less experienced faculty gained by being mentored by more experienced peers (Dabl, 2005). 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 teaching. Situational barriers often exist between knowledge of research-based instructional practices and actual implementation of that knowledge in the classroom (Henderson & Dancy, 2007).

### **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:

- Learning by example, has been shown to be an effective way to learn, as well as transfer learning from one context to another (Brown, 1988). 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. This is the very basis of the faculty professional development model used in the MLSI, where faculty learn from each other facilitated by instructional designers, rather than faculty being trained by instructional designers or faculty developers. The post-MLSI survey and focus group data in this study show that, faculty reported having made positive learning gains from knowing how their peers use mobile devices in their classrooms. This is similar to previous findings where instructors report positive peer learning experiences from mentors who are practitioners in the field (Forbes, 2004; Jones, 2010).
- 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. Participants of the survey and focus group in this study 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. Learning from the failure of others and of oneself, has been shown to be a positive learning experience, especially in the context of organizational learning (Sitkin, 1992; Cannon & Edmondson, 2005).
- Faculty might find it useful to hear interdisciplinary, rather than department exclusive, perspectives on technology and pedagogy integration. The effects of interdisciplinary learning have been studied in the past (Jones, 2009) and have been found to be beneficial, in that it allows learners to view multiple perspectives, work in groups, and synthesize different fields of learning. It can “foster constructive communication” and productive exchange between different disciplines (Burton, 2001, p.17). In the MLSI, faculty got to experience presentations, panel discussions, and trainings from their fellow faculty from multiple disciplines. Thus they got the opportunity to know how mobile learning and devices can be used effectively in various disciplines. They also got to meet, interact and network with colleagues from different departments, which can often be a rare occurrence outside of such training opportunities.
- Often, disciplinary doctoral degrees, especially in the sciences, prepare students to be researchers rather than teachers (Campbell, Fuller, & Patrick, 2005; Brownell & Tanner, 2012). This point was corroborated in this study when an instructor mentioned that having a subject matter doctoral degree often does not prepare instructors to be good teachers. Professional development with a focus on pedagogy may be required for faculty members to be successful instructors (Baran & Correia, 2014; Romero-Hall, 2017).

- Professional development opportunities that focus on educational technology integration may provide instructors with rich opportunities to think about different learning styles (McGovern, Luna-Nevarez, & Baruca, 2017) and how technology can facilitate multi-modal learning (Anastopoulou, Sharples, & Baber, 2011). In the MLSI, faculty got the opportunity to see how their peers used mobile learning and devices to achieve various learning outcomes, discussed ideas on effective integration of mobile learning strategies, and learned how to use various mobile apps, which can facilitate 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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## Appendix A

### Pre-MLSI Survey Questions

Unless otherwise indicated, all questions are in a five point Likert scale, ranging from “Agree” to “Strongly disagree”

1. Please indicate the nature of your appointment  
Adjunct instructor  
Lecturer  
Clinical assistant professor  
Assistant professor  
Associate professor  
Professor  
Other
2. You have basic knowledge of a mobile device based app (like: Celly) which can be used for social interaction in and outside of the classroom.
3. You have basic knowledge of an app (like Google Drive) which can be used for cloud storage of course and student created content.
4. You have basic knowledge on how to use images and videos in your courses.
5. You have basic knowledge on how to create video-based course content using an app (like: iMovie, PowToons, DoInk Green Screen, Tellagami, Explain Everything).
6. You know how to set-up your youtube channel and upload a video.
7. You have basic knowledge of how to create engaging, interactive image-based course content using an app (like: ThingLink, Skitch).
8. You have reflected on how you can use mobile devices to design unique “creation” opportunities for your students, specifically with cross-disciplinary and service learning projects.
9. You have reflected on how to incorporate active learning techniques in combination with mobile apps to achieve course objectives.
10. You have basic knowledge on how to access Blackboard and grade assignment submissions using the Blackboard Mobile and the Blackboard Grader apps.
11. You have basic knowledge about the accessibility features in an iPad.

12. You have basic knowledge of how to increase anytime, anywhere communication with your students using an app (like: Google Hangout).
13. You have basic knowledge of how to facilitate interactive note taking using an app (like: Evernote, Notability, Paperport).
14. You have basic knowledge of how to conduct formative assessment using an app (like: Socrative).
15. You have basic knowledge of an app, that can be used for student and or instructor presentations (like: Solstice Client, Haiku Deck, Keynote, Adobe Slate, Adobe Voice, Nearpod).
16. You have basic knowledge on how to enable student-instructor interaction in the classroom using an app (like: REEF, Poll Everywhere, Socrative).
17. You have reflected on how learning objectives, activities, and assessments can be completed using a mobile device /one or more mobile device based apps.
18. You have reflected on how team-based activities in your course(s) can be completed using a mobile device/apps.
19. You have reflected on how to design assignments which students can complete both manually as well as digitally, so that students who don't have access to technology can continue to learn.
20. You have basic knowledge of how the following campus resources made available by the IDEA shop, can assist you in your teaching and learning.
21. You have basic knowledge of certain emerging technologies which may be relevant to your teaching and learning (like: Wearables, Robotics, Projection/Simulation, Medical, Body Trackers, Google Cardboard, Augmented Reality).
22. You have basic knowledge about the on-campus Maker Lab (i.e., its location, what it does, how it may facilitate your teaching and learning).

## **Appendix B**

### **Post-MLSI Survey Questions**

Unless otherwise indicated, all questions are in a five point Likert scale, ranging from “Agree” to “Strongly disagree”

1. You have basic knowledge of a mobile device based app (like: Celly) which can be used for social interaction in and outside of the classroom.
2. You have basic knowledge of an app (like Google Drive) which can be used for cloud storage of course and student created content.
3. You have basic knowledge on how to use images and videos in your courses.
4. You have basic knowledge on how to create video-based course content using an app (like: iMovie, PowToons, DoInk Green Screen, Tellagami, Explain Everything).
5. You know how to set-up your youtube channel and upload a video.
6. You have basic knowledge of how to create engaging, interactive image-based course content using an app (like: ThingLink, Skitch).
7. You have reflected on how you can use mobile devices to design unique “creation” opportunities for your students, specifically with cross-disciplinary and service learning projects.
8. You have reflected on how to incorporate active learning techniques in combination with mobile apps to achieve course objectives.
9. You have basic knowledge on how to access Blackboard and grade assignment submissions using the Blackboard Mobile and the Blackboard Grader apps.
10. You have basic knowledge about the accessibility features in an iPad.
11. You have basic knowledge of how to increase anytime, anywhere communication with your students using an app (like: Google Hangout).
12. You have basic knowledge of how to facilitate interactive note taking using an app (like: Evernote, Notability, Paperport).
13. You have basic knowledge of how to conduct formative assessment using an app (like: Socrative).
14. You have basic knowledge of an app, that can be used for student and or instructor presentations (like: Solstice Client, Haiku Deck, Keynote, Adobe Slate, Adobe Voice, Nearpod).
15. You have basic knowledge on how to enable student-instructor interaction in the classroom using an app (like: REEF, Poll Everywhere, Socrative).

16. You have reflected on how learning objectives, activities, and assessments can be completed using a mobile device /one or more mobile device based apps.
17. You have reflected on how team-based activities in your course(s) can be completed using a mobile device/apps.
18. You have reflected on how to design assignments which students can complete both manually as well as digitally, so that students who don't have access to technology can continue to learn.
19. You have basic knowledge of how the following campus resources made available by the IDEA shop, can assist you in your teaching and learning.
20. You have basic knowledge of certain emerging technologies, which may be relevant to your teaching and learning (like: Wearables, Robotics, Projection/Simulation, Medical, Body Trackers, Google Cardboard, Augmented Reality).
21. You have basic knowledge about the on-campus Maker Lab (i.e., its location, what it does, how it may facilitate your teaching and learning).
22. Please indicate the level of your satisfaction as a learner in the Mobile Learning Summer Institute.
  - Very satisfied
  - Satisfied
  - Neither satisfied nor dissatisfied
  - Dissatisfied
  - Very dissatisfied
23. Your understanding of how to integrate mobile learning in my course design has
  - Remained the same
  - Improved somewhat
  - Improved substantially
24. As a result of attending the Mobile Learning Summer Institute, you intend to make changes to your teaching practice.
25. As a result of changes in your teaching practice after attending the Mobile Learning Summer Institute, you believe that your students will learn more/better.
26. After attending the Mobile Learning Summer Institute, you consider yourself more digitally fluent.
27. How likely are you to share what you have learned from the Mobile Learning Summer Institute with university/department colleagues:
  - Extremely likely
  - Very likely
  - Neither likely nor unlikely
  - Unlikely
  - Very unlikely
28. When learning about the following topics from peer faculty and or Instructional Designers, indicate the effectiveness of your learning about:
  - a. The pedagogical uses of new and/ familiar apps:
    - Not effective
    - Moderately effective
    - Very effective
  - b. The basics of mobile device (iPad) use:
    - Not effective
    - Moderately effective
    - Very effective
  - c. The pedagogical application of mobile devices in course design:
    - Not effective
    - Moderately effective
    - Very effective
  - d. How peer faculty use mobile devices in their classroom/course(s):
    - Not effective
    - Moderately effective
    - Very effective

## Appendix C

### **Focus Group Questions**

1. In this Mobile Learning Institute, you learned from peer faculty as well as Instructional Designers (IDCs)/other professionals. In what ways was this combination beneficial? What were the drawbacks?
2. How will the learning from this Institute impact your course design? Provide at least one example of changes you plan to make.
3. How will the learning from this Institute impact your assessment strategy? Provide at least one example of changes you plan to make.
4. How does the learning at this Institute impact your plans of integrating mobile learning/devices in your teaching and learning? Provide at least one example of changes you plan to make.
5. How do you think, your learning from this institute impact student learning?