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### Original Publication Citation

Crompton, H. (2014). *Educators' self-identified mobile learning training needs: A qualitative study involving educators from 12 diverse North American states*. Paper presented at the Society for Information Technology & Teacher Education International Conference, Jacksonville, FL, March 17-21, 2014.

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# Educators' Self-Identified Mobile Learning Training Needs: A Qualitative Study Involving Educators from 12 Diverse North American States

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**Abstract:** Mobile learning (mlearning) is changing the pedagogical landscape of traditional teaching. The myriad of constantly evolving mobile devices are providing new affordances which are attracting the attention of educators around the globe. Many educators may be excited at these new affordances to learning, others are more apprehensive of this technological intrusion on traditional practices. In this paper, the researchers share the results of a self-report survey that provides evidence of what educators reported they would like to receive training on for mlearning initiatives. These data suggest current trends in mlearning and the technological abilities of educators implementing mlearning in their classrooms. This information, gathered from across 12 diverse US States, is pertinent to a broad spectrum of scholars and practitioners, but most importantly, it is relevant to teacher educators as they prepare future teachers to teach using mobile devices.

## Introduction

Mobile devices are becoming ubiquitous in today's society. What was once used in personal and business settings is now seeping into educational settings. Many educators and governments have advocated for educational reforms to utilize technologies in classroom instruction (Bereiter & Scardamalia, 2006; Greenhow & Robelia, 2009; Jonassen et al., 2008; Common Core State Standards Initiative, 2010). A number of educators are also recognizing the many affordances these devices have to offer and how pedagogical boundaries can be pushed to make way for new types of teaching and learning. Nonetheless, educators need training on how to effectively implement mobile devices into the existing curriculum. Educators face many challenges as they implement mlearning initiatives; for example, students expect learning to be "Just in time, just enough, and just for me" (Rosenberg, 2001) and instruction it expected to take place inside and outside the traditional setting of the school (Peters & Lloyd, 2003). These new ideas on teaching can often be different from what educators have become accustomed to.

For a mobile implementation to be effective, scholars and researchers have studied the core elements that are needed in a successful mlearning implementation. In June 2012, United Nations Education, Scientific and Cultural Organization (UNESCO, 2013) published a comprehensive report to highlight ways mobile technologies can be used to support learning in North America. In this report the authors list five essential conditions for mobile learning: (a) visionary leadership and commitment, (b) robust technology capacity, (c) professional development, (d) scalability, and (e) policies that promote and support the initiative.

The International Society for Technology in Education (ISTE) developed a similar list of essential conditions (2009) for effectively leveraging technology for educational purposes. ISTE's list of 14 essential conditions includes the components UNESCO listed, but breaks them down into smaller more definable targets. ISTE's essential conditions are: (a) shared vision, (b) empowered leaders, (c) implementation planning, (d) consistent and adequate funding, (e) equitable access, (f) skilled personnel, (g) ongoing professional learning, (f) technical support, (g) curriculum framework, (h) student-centered learning, (i) assessment and evaluation, (j) engaged communities, (k) support policies, and supportive external context. ISTE's essential conditions were used in this study to ensure that the support need by the educators was on training in the use of mlearning and not assistance in other core areas. Furthermore, the essential conditions were also used to distinguish the particular areas where professional development was required. For example, the educators may have indicated that they needed to focus the mlearning training on curriculum development, rather than student-centered learning.

The purpose of this study was to determine the training needs of those implementing mlearning initiatives in K-12 schools. To conducting research in schools across North America to find out what administrators and educators highlighted as their specific mlearning training needs. The schools involved in this study were implementing a mobile learning initiative and were self-identified as having adequate levels of the essential conditions for a successful implementation, including a robust technology capacity and visionary leadership. All schools highlighted their need for training in mlearning. There are a number of studies (viz., Bjerede & Dede, 2011; Crompton & Keane, 2012) where the researchers have reported the need for teacher training for the effective incorporation of these devices. However, there have been no studies thus far that have the educators reporting on what they believe are their training needs to successfully use mlearning. This portion of the study will provide some information to begin filling that gap in the scholarly understanding of this area. In addition, it has been reported that educators request training to be held using a particular methodology

## **Methods**

### **Participants**

A total of 86 participants from 12 schools were involved in the study. The participants were from 12 diverse North American states. All the participants were grantees of a Verizon Innovative Learning Schools (VILS) grant from the Verizon Foundation. This grant was awarded to schools and districts across North America who was able to provide evidence to show that they were involved in an active mlearning initiative. This included having devices on site and policies in place to ensure the use of the devices in teaching and learning.

### **Procedure**

A self-report survey was administered to gain an understanding of the professional development mlearning needs of those in a school with a robust technology capacity and visionary leadership. The names and email addresses of the participants were made available to the researchers from the providers of the grant. The participants were contacted by email and asked to complete an online survey. A total of 86 responses were collected, representing approximately a 67% response rate. Respondents were not directly compensated for completing the survey, since it is a responsibility associated with receiving grant funds. This survey had two main components of interest for the current work, (a) a Needs Assessment, and (b) an Essential Conditions survey. The Needs Assessment questions asked the participants to respond to questions about his/her goals for mlearning training and how he/she believed those goals could be achieved. In addition, the participants were asked to rate how ready their school was to take on a mlearning initiative. To support the school staff in making this determination, ISTE Essential Conditions was provided as a frame of reference.

The Essential Conditions framework consisted of a rubric; respondents rated their school against the rubric assessing various components such as “visionary leadership” and “adequate funding.” Ratings were assigned according to a five point scale: 0 = very weak, 1 = weak, 2 = emerging, 3 = strong, and 4 = very strong. These data for the Essential Conditions were aggregated by school to confirm the initial self-report grant application that the schools did have a robust infrastructure to support the mlearning initiative. Next, individual responses for each school were triangulated with the Essential Conditions data to determine consistency. Finally, these data from the Needs Assessment and the Essential Conditions were aggregated for all 12 schools.

Researchers coded these Needs Assessment data using grounded theory design with a constant comparative method (Strauss & Corbin, 1998). Data collection and analysis used iterative and inductive processes. Initially, open coding was used to develop the codes. The researchers then utilized an iterative process of reading and rereading the participants’ survey responses. The themes that emerged led to the initial codes that were then assigned on a line-by-line basis to the complete set of responses. This was followed by a second level of coding during which axial codes were identified to build connections within categories and subcategories. These codes were organized into the final set of codes.

In addition to open-ended items about current needs, respondents also used rating rubrics to self-assess their levels of technology use and confidence, and the degree to which they used a set of 21<sup>st</sup> century skills standards in their teaching. For these standards we used the NETS-Teachers (ISTE, 2008). These Essential Conditions data

were aggregated and a bar chart was developed. The core codes generated from the Needs Assessment were triangulated against the Essential Conditions data to look for consistency and provided a framework for analyzing the mlearning needs of the participants. The results of the Essential Conditions survey responses were aggregated and engaged communities (mean 1.96, SD 0.91) and curriculum framework (mean 2.05, SD 1) are among the lowest rated factors. Therefore, it appears that mlearning training might be a good fit for the participants as these are two of the essential conditions that can be achieved with access and participation in mlearning training.

## Findings

Data from the survey responses revealed several themes became apparent. This included what the participants wanted from the mlearning training and how they wanted to be trained themselves. Four overarching themes emerged from the coding; (a) technology integration, (b) pedagogical approach, (c) student goals, and (d) specific technology training. These four themes can be found in Table 1 with example responses and are ordered with the top response being the most frequently mentioned theme.

*Technology integration* was the most desirable training component, this general statement referred to educators desire to know how to effectively incorporate technology into their existing curriculum. Next, was the theme *pedagogical approaches*, this referred to comments where educators wanted to use technology to implement specific pedagogical approaches. For example, project-based learning was mentioned specifically seven times and flipping and blending mentioned five times. The other two themes of specific student goals and technologies are mentioned less often in the surveys but each was mentioned at least three times. The only connection made to a technology application was the mention of a desire to learn about Learning Management Systems.

Table 3.1 *Themes*

Theme		Example Responses
Technology Integration	How to integrate technology into the curriculum	“I would like to be able to incorporate technology and devices within the curriculum I teach...and make sure it is directly connected with my curriculum.”
Pedagogical Approaches	Flipped, Blended, self-directed learning, learner centered, real-world, and authentic.	“I want ideas for how to flip the classroom...I want to use the iPads for personalized learning for my students’ needs.” “I hope to learn how to make blended learning for our campus more than turning a worksheet into a digital format.”
Student Goals	Engage students. Connect students Global citizens	“Students will acquire skills to allow them to become citizens of our global society.” “I want to increase student engagement through the use of technology.”
Specific Technology Training	Learning Management Systems	“I would like to know how to effectively use a Learning Management System in my classroom.”

Questions in the survey also prompted the educators to respond to the way they wanted to be taught. Eleven of the 86 educators responded that they wanted “hands-on” learning, in that they should be actively using the devices in the training. This way they would also get a chance to see how the students feel being taught using this method. Time was referred to by twelve of the respondents with comment such as “I want to have time to explore to get me to a comfortable point. Don’t just say “on your own time,” because I probably won’t get around to it then.”

## Conclusion

As school districts across North America are implementing a number of mlearning initiatives, this study considers the educators point of view of what training they believe they require for these implementations to be successful. There are a number of studies (viz., Bjerede & Dede, 2011; Crompton & Keane, 2012) where the researchers have reported the need for teacher training for the effective incorporation of these devices. A small number of those studies have suggested what that training should involve, but none have directly asked the educators what training they believe they require.

This self-report from teachers and administrators across 12 diverse States in North America provides an informative insight into what practitioners believe mlearning training should include and the method that should be used to conduct that training. These data suggest current trends in mlearning and the technological abilities of educators implementing mlearning in their classrooms. Specifically, the findings highlight four trends of what the educators request mobile learning training to include, these are training in a) technology integration, b) pedagogical approaches, c) student goals, and d) specific technology training. In addition, it would appear that educators want to be taught using a hands-on approach and more dedicated time to explore the tools. This has often been commented on in the literature, but empirical evidence has been lacking until now. This information gathered from across 12 diverse US States is pertinent to a broad spectrum of practitioners and scholars, but most importantly, it is relevant to teacher educators as they prepare future teachers to teach using mobile devices.

## Acknowledgements

This research was supported by a grant from the Verizon Foundation and the development and implementation partners the International Society for Technology in Education (ISTE).

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