Using Mobile Technology in an Extension Leadership Development Program

Hannah Carter
Assistant Professor
University of Florida
PO Box 110126
Gainesville, FL 32611
Phone: 352-392-1038
Fax: 352-392-0589
hscarter@ufl.edu

Lisa Hightower
University of Florida

Abstract

Mobile learning is changing the way education is viewed worldwide. This new style of learning, which has already been applied by a number of corporations, may offer similar benefits to adult education programs offered through Extension. Mobile learning may offer Extension a way to extend their educational reach to adults outside traditional classrooms or lecture halls. One statewide Extension program explored mobile learning within an agricultural leadership program. The program is geared toward opinion leaders in agricultural and natural resources industries in the state, and focuses on 11 face-to-face seminars that occur within the state, around the country, and culminates in an 18-day international seminar. Mobile learning was utilized in this program to increase the participants’ educational experiences between these seminars, as well as offer continuing education to those who had graduated from the program. The purpose of the study was to explore the relationship between mobile technology, in the form of iPods, and the professional development experience of participants in this program. The study took a mixed-methods approach. Results of the study found that participants had a “great deal” of comfort with the iPods and listened to podcasts on a variety of topics. The most popular benefits of using the devices were the ability to share information, the mobility of the device, and access to educational content. The value of mobile learning in Extension programming is the ability to take advantage of “learning episodes” and extend Extension programs to individuals who might not otherwise have had the opportunity.

Keywords: Mobile Learning, Technology, Leadership Development, Extension Teaching Methods, Adult Learning
Introduction

Mobile learning is changing the way education is viewed worldwide. With the proliferation of mobile devices, such as cell phones, iPods, and PDAs (personal data assistants), learning no longer needs to take place within the confines of a classroom or seated in front of a computer (Sharples, 2000). This concept of taking education “on the road” is appealing to corporations with a mobile workforce (Gayeski, 2002; Lundin & Magnusson, 2003). Mobile learning has also been used by corporations as a way to train employees who are too busy for traditional forms of training (Shekhar, 2007).

This new style of learning, which has already been applied by a number of corporations, may offer similar benefits to adult education programs offered through Extension. Extension is facing a new kind of adult learner, one who tends to learn in environments other than traditional classrooms or lecture halls (Sharples, Taylor & Vavoula, 2005). Mobile learning may offer Extension a way to extend their educational reach to these adults.

In addition to being faced with a new kind of adult learner, Extension agents using face-to-face methods to deliver information are limited to the number of people they can serve because traditional Extension activities involve direct contact between Extension associates and clients (Xie & Gu, 2007). This direct contact requires the agent and the client to be available at the same time. Another issue facing Extension is that agents often need to deal with the same problems repeatedly with different clients (Xie & Gu, 2007). This results in the agents offering the same presentation of information to clients over and over again (Xie and Gu, 2007). Finally, Extension relies on individual associates’ expertise to address problems facing their clients (Xie & Gu, 2007). When associates retire the knowledge and expertise retires with them (Xie & Gu, 2007).

Many Extension systems provide leadership programming to clients within the agricultural and natural resource industries within their state or province. These agricultural leadership programs are delivered much in the same way as the majority of Extension programs are delivered, through face-to-face seminars. The content of agricultural leadership programs are tied inextricably to dynamic markets at the national and global levels. It can be difficult to deliver the information necessary to understand these complex markets in the limited time reserved for live seminars. In addition, because there are so many topics to cover, programs can only go “an inch deep”, there is not enough time to thoroughly cover every topic to gain an understanding.

Another difficulty facing those individuals delivering Extension leadership programs is connecting current participants with the program’s alumni. The majority of the alumni in leadership programs request continuing education options, which are all but impossible with the content delivered through face-to-face seminars. The biggest obstacle facing leadership programs is funding. With funding for Extension research and programming programs decreasing nationally and internationally, those involved in leadership programs need to teach more individuals with fewer resources. A way to do this is through mobile technology.

Mobile technology may be a mechanism to meet many of the limitations facing Extension leadership programs. It can be quite cost effective to deliver materials through podcasts, multimedia clips that can be accessed through iPods and mp3 players (Fannin, 2006). Extension Services at universities throughout the U.S. have delivered agricultural news via podcasts, including Texas A&M, University of Nebraska, Iowa State University and Mississippi State University (Xie & Gu, 2007).
One statewide Extension program explored mobile learning within an agricultural leadership program. This program is geared toward opinion leaders in agricultural and natural resources industries in the state, and focuses on 11 face-to-face seminars that occur within the state, around the country, and culminates in an 18-day international seminar. Mobile learning was utilized in this program to increase the participants’ educational experiences between these seminars, as well as offer continuing education to those who had graduated from the program. Through the use of mobile learning, the program hopes to increase the participants’ exposure to issues at the state, national and international levels, as well as to increase the exposure of the program alumni to these issues offered in this delivery method.

Podcasts were made available online via Web sites. Once podcasts had been posted onto a Web site, they were available to a worldwide audience, including leadership programs nationally and internationally (McLoughlin & Lee, 2007). As a result, leadership programs could share content through online podcasts, cutting down on development costs.

Researchers have found that mobile technology can assist learners in enhancing their skills and remaining current on issues that impact businesses, communities, and industries (Trifonova & Ronchetti, 2003). Helskowski (2000) suggested that modern technology, such as mobile devices, may be the key to linking disconnected leadership programs and alumni throughout different regions in the U.S. and different countries. Developing an international network of leadership programs and alumni could amplify the impact made by these programs on agricultural policies and practices at multiple levels (Helstowski, 2000).

**Purpose and Objectives**

The purpose of the study was to explore the relationship between mobile technology, in the form of iPods, and the professional development experience of participants in an Extension agricultural leadership program. The purpose was investigated through the following research questions:

- **RQ 1:** How did the participants interact with the iPods in their first year of the program?
- **RQ 2:** What types of information did the participants access through their iPods?
- **RQ 3:** What were the participants’ perceptions of the iPods as educational devices in leadership programs?

**Methods**

The study took a mixed-methods approach, with both quantitative and qualitative data collection. The use of a mixed-methods approach is especially effective for researchers delving into a complex problem (Johnson & Onwuegbuzie, 2004). In this study, exploring the multifaceted issues involved in using mobile technology in an adult leadership program required data collection through a variety of methods. This study followed the participants through their first year in this statewide Extension leadership development program.

Twenty-nine leadership program participants comprised the population of this study. These individuals were men and women between the ages of 25-55, who made the two-year commitment to complete an adult leadership program sponsored by the Cooperative Extension Service. Participants represented leaders in administrative positions within major agricultural and natural resource industries. iPods were distributed to the participants during the first seminar of the program. Podcasts were created by the leadership program director and a program assistant, and posted to the program Web site. Additional podcasts were found on-line on topics relating to program content and were made available for participants to download as well. Data was
collected during three seminars in the leadership program, over the course of the first year of the program, concerning the participants’ use and perceptions of the iPods and the podcasts.

The first part of this study included a four-page questionnaire that was distributed to the participants to complete during their first leadership program seminar in November 2007. Participants completed a second questionnaire during a seminar in March 2008. The third part of the study utilized a modified nominal group assessment in July 2008. Nominal group assessments, similar to focus groups, offer the perceptions and beliefs of a group of people concerning a phenomenon of interest (Van De Ven & Delbecq, 1972). The nominal group assessment model was developed by Delbecq and Van de Ven (1972) to facilitate group decision making. The benefit of using a nominal group assessment is to generate information in response to an issue that can then be prioritized through group discussion (Potter, Gordon, & Hamer, 2004, p. 126). While focus groups are most effective with six to eight people (Morgan & Kreuger, 1998), nominal focus groups can be used with larger groups effectively (Lloyd-Jones et al., 1999). Another benefit of using nominal group assessments is that it reduces the impact of group dynamics within the sample group and encourages equal participation among the participants (Perry & Linsley, 2006).

Results and recommendations from the written questionnaires and from the small group discussions were compiled. Recommendations from these can be found in the discussion section.

**Results and Conclusions**

RQ 1: Participants interaction with iPods

Individuals were asked to check a box with 1 being “Not at All”, 2 being “A Little”, 3 being “Some”, 4 being “Much” and 5 being “A Great Deal”. Fifty-four percent indicated that “Much” knowledge could be obtained utilizing an iPod. Thirty-two percent indicated “A Great Deal” of knowledge could be obtained, while 14% indicated that “Some” knowledge could be obtained.

Utilizing the same five-point scale, participants were asked about their comfort level with mobile learning, which included downloading podcasts, blogging, etc. Thirty-two percent responded that they had “A Little” comfort with mobile learning, while 25% had “A Great Deal” of comfort. Seven percent indicated that they had no comfort at all.

Slightly less than 75% of the participants used the iPods at least once a week. More participants used the iPods to view entertainment content on the iPods (60%) at least once a week compared with educational content (50%). Approximately 70% of the participants listened to at least one to two podcasts on a regular basis. While conversely, close to 30% of the participants did not listen to a podcast on a regular basis.

RQ 2: Types of information accessed through iPods

The participants listened to podcasts on a variety of topics, but the most popular topic was leadership followed by current events and agriculture. Other podcasts that were downloaded by participants were those relating to government and current events. The podcasts were found through a variety of sources, including the extension leadership program web site.

Participants did indicate that they intended to utilize their iPods to download information and language podcasts relating to the countries that they would visit as part of their international program experience during the second year of the program.
RQ 3: Perceptions of the iPods as educational devices in leadership programs

In the nominal group assessment, the 29 participants were asked the following questions:

1. What benefits do you see with using iPods in the leadership program?

2. What challenges do you see using iPods in the leadership program?

3. How will you use iPods in the future?

From these questions, a series of responses were generated and rated by the 29 participants. The answers were weighted and given point values by the researchers. The top ten scored answers are given for each of the three questions.

The first question focused on the benefits the participants found in using the mobile devices (Table 1). The top rated answer by the participants was that the devices could be used in their car. The second place answer was that the devices helped them to multitask. The third most popular answer was that the devices allowed them to use downtime and travel time productively. The majority of the participant responses concerning the benefits of using mobile devices focused on the diverse amount of content available online. Another common theme among the participants was the way the devices aided them in making better use of their time.

Table 1

<table>
<thead>
<tr>
<th>Participants’ Response</th>
<th>Rating</th>
<th>Weighted Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can be used in the car</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>Helps with multitasking</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Can be used during downtime, travel time</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>Sharing information, pictures</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Exposure to information that previously was inaccessible</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>Coolness factor</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Ability to expand knowledge – awareness</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Receive current events in a timely manner</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Good visual communication tool</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Good learning tool</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

The second question asked of the participants focused on the challenges posed by the mobile devices (Table 2). The overwhelming favored answer among the participants was that they received limited technical training, and had poor individual technical ability. This was followed by a lack of time to use the device. The third most popular challenge was the devices were used by a variety of people on different computers. The overall theme among the challenges listed by the participants centered on technical issues with using the device and iTunes to manage the content.
Table 2
Participants’ Perceptions of Challenges of Using Mobile Devices.

<table>
<thead>
<tr>
<th>Participant Response</th>
<th>Rating</th>
<th>Weighted Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very limited technical training, poor individual technical ability</td>
<td>1</td>
<td>109</td>
</tr>
<tr>
<td>Lack of time to use device</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>Multiple users and use device on different computers</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>Dependency on iTunes</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Hard to integrate into schedule</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>Device is yet another electronic object to use</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Plug in sync takes too much time</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>Hard to post to itunes store</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>Takes time to create material to share</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>Adds another step to getting information</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>

The final question asked participants concerned how they would use the mobile devices in the future (Table 3). The most popular response was that the devices would be used to listen to language podcasts. The second most common answer was that the devices would be used to enhance cultural and travel experiences, such as listening to podcasts that offered information on museum tours. The third most popular answer was that the participants would be upgrading from their iPod to an iPhone for convenience, stating that the iPhones offer Web accessibility, a feature not available on the iPods. Reviewing the participants’ comments concerning their future use of the iPods, the majority of the responses mentioned viewing cultural materials in the future. This attention to cultural materials may be due to the fact that the leadership program was preparing for a trip to China in the coming months, and many of the participants were trying to research Chinese points of interest.

Table 3
Participants’ Perceptions of Their Future Uses of Mobile Devices.

<table>
<thead>
<tr>
<th>Participant Response</th>
<th>Rating</th>
<th>Weighted Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening to language podcasts (i.e., to learn a language)</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>Enhanced cultural/travel experience (i.e., museum podcasts)</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Switching to iPhone for technical convenience</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>Continue to learn</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Entertainment</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Educate my employees</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Posting my own podcasts</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Listen to and view music/video content</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Use as data storage for viewing on-the-go</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Continual podcast resource</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>

The participants offered benefits and challenges of using iPods. The most popular benefits of using the devices was the ability to share information, the mobility of the device, and access to educational and entertainment content. The most common challenges for participants were that they received limited technical training, and had poor individual technical ability. This was followed by a lack of time to use the device. The third most popular challenge was the
devices were used by a variety of people on different computers. The overall theme among the challenges listed by the participants centered on technical issues with using the device and iTunes to manage the content.

From the results of the data collection, it is evident that iPods have a place as an effective information delivery method for an agricultural leadership program. Results of this study show that participants utilize this type of mobile technology more than once a week and their preferred content to download onto this device were leadership podcasts.

While this type of technology allowed for accessibility and for taking programming “on the road”, there were several drawbacks. Most notably was a lack of technological ability on behalf of the participant. When properly trained on the device, the participants felt comfortable in utilizing the device and downloading the content. The participants in this study believed that there was a definite lack in technical training which should be addressed in further studies and with additional study populations.

**Recommendations, Implications and Application**

For extension agents interested in incorporated mobile technology into adult education programs, they may want to consider offering an in-depth technical training on the devices, downloading podcasts, and accessing online technical assistance. Agents might also want to consider offering a list of web sites that offer podcasts on relevant topics to the educational program. While the majority of the participants indicated that they had a level of comfort with the devices, they also indicated that they desired further technical training in utilization of the device and also on how to download the podcasts from other sites.

Because this is a new technology, step-by-step instruction needs to be given to the learners. In addition, regular communication should be conducted so as to determine what podcasts are being downloaded and if there are any problems among the learners. While this technology is effective, educators cannot just hand-out the devices and walk away.

The real value of mobile learning in Extension programming is the ability to take advantage of “learning episodes” and extend Extension programs to individuals who might not otherwise have had the opportunity. With this technology this program is able to offer both participants and program alumni the opportunity to learn about issues from the local to international levels. This is where the real value of this type of learning can occur as the international implications are extensive. Extension agricultural leadership programs can now share content, information and build upon their own local networks of leaders. In addition, alumni of these programs will remain engaged in the leadership building process as they will have access to all this information as well.

As with any educational program, it is important to ask learners to reflect on what they expected to learn within the program, how they will use it in the future and how it will meet their own individual goals. Educators need to review this information so they can continue to provide the most interesting and educational programming (Lawler, 2000). In utilizing mobile technology, Extension educators need to be aware that participants may expand their knowledge base beyond the bonds of the programs’ objectives and their learning experiences, reflection and application of the material may be different than of those in more traditional Extension programs.

With the prevalence of information available on the internet that is produced all over the world, participants may be exposed to many different viewpoints and ideas. While Extension educators can provide the framework for learning, the adult learners will integrate this
framework in their self-directed learning in which they use iPods and podcasts (Merriam, Cafferella & Baumgartner, 2007).

Mobile devices could be extremely useful in preparing for the international components of these types of leadership programs that incorporate an international experience in their curriculum. Learners could download language podcasts, travel podcasts, news podcasts and even current literature written on individual countries to their iPods. This would allow them to be more prepared for their experiences by increasing the amount of knowledge on these countries that they will be visiting.

It is important to note that while participants indicated that they felt comfortable with their iPods and this technology, there were still participants who did not utilize this type of learning on a regular basis. There could be several reasons for their lack of use. These participants could need additional technical training on the device to become comfortable in their use. Additionally, participants may not believe that they have the time to listen to podcasts during their daily schedules.

While the expense of the iPod itself could be a drawback in incorporating this type of mobile learning in Extension programs, it is important to note that these devices were a tool in the facilitation of additional program content while on the road, at the gym and during other times that individuals are able to watch and/or listen to programming. All the podcasts are also available to be downloaded on individual computers. While not as mobile as the hand-held devices, this would allow for additional participants to take advantage of the program content that is being recommended for learners. In this study, all the current participants of this program were issued video iPods, while the program alumni were provided with the same podcasts lists and access to podcasts that they could then download to their own computers.

Further research should be conducted on utilizing this type of mobile technology in other Extension programs in addition to additional research conducted within these Extension agricultural leadership programs. The utilization of mobile technology will only continue to grow and to be implemented in Extension programs around the world. The adoption of this technology, the incorporation into Extension programs and the facilitation of bringing learners together from around the world will all be research topics that will be of great interest and extremely relevant to Extension.

**References**


