An Evaluation of Selected Technology Tools for Extension Work: Use, Satisfaction, and Practice Change

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Abstract

Increased access and use of technology is changing the way Extension professionals connect with each other and with clientele. To learn more about e-learning tools that could be used in training for Extension professionals or teaching, we conducted an evaluation of technology tools used during a training program. Technology tools for communication, project management, course management, creating podcasts, and others were deployed with 40 Extension professionals. Both immediate and follow-up evaluations were used to measure usefulness, use, and how tools were being used. Participants also provided written responses addressing how they were applying technology tools to other areas or their life and work. Tools that facilitated communication, project collaboration, and course management were highly rated. Overall, many (83%) participants appear to have adopted use of at least one of the technology tools and can share specifically how they are using them in Extension work.

Keywords: distance education tools, e-learning, evaluation
Introduction

Like many Extension systems, ours has relatively recently begun to feel the effects of reductions in budget, personnel, and other resources. At the same time, we are also seeing large increases in online and e-learning in organizations with shifting demographics contributing as a more tech-savvy generation enters the workforce (Kranz, 2008). Extension organizations in the U.S. and other countries have begun to develop e-learning tools and are using the Internet for teaching and learning with numerous barriers and advantages reported (Williamson & Smoak, 2005). In addition to organizational pressures to do more with less and general increases in online and e-learning (Weatherly, 2005), anecdotal evidence suggests that our organization’s employees and clientele have begun to express interest in receiving more information at their convenience in synchronous and asynchronous electronic formats. According to Jackson, Hopper, and Clatterbuck (2004) Extension systems have struggled in adapting to these changes and in determining how to use and develop distance learning tools and information technologies to meet the evolving needs of our organization and the clientele we serve.

Blended learning and blended e-learning are terms used to describe teaching using a variety of delivery methods that might include traditional face-to-face teaching and/or various e-learning approaches. In making the case for combining a variety of delivery methodologies, Weatherly (2005) said that blended learning “combines the power and effectiveness of the classroom with the efficacy and versatility of e-learning” (p. 1). The use of blended learning accommodates different learning styles, can save time and reduce costs, and offers convenience and flexibility to provide learning opportunities to meet the needs of 21st century learners.

In the past five years interest in distance learning has increased and use of e-learning tools has become more widely accepted by academics (Lee, Cho, Gay, Davidson, & Ingraffea, 2003). While there may be increasing interest, using such teaching approaches to engage the learner still remains the primary concern (Brown, 2001). With such a wide variety of e-learning tools and e-learning approaches to choose from, what really works? How might we augment our traditional teaching methods with a blend of the new e-learning tools and approaches to better reach and engage audiences?

Purpose and Objectives

The goal of this paper is to share findings and implications of an evaluation of blended e-learning tools used in a training program for Extension professionals. Specifically, we wanted to gain a clearer perspective of how program participants used the tools; better understand the degree to which participants found the tools able to meet their needs, and; gain insights into how program participants have adopted use of the tools in teaching and learning. We discuss implications of our findings and provide recommendations for others interested in initiating or improving their educational efforts with these tools.

Data Sources and Methods

Training Program and Technology Tools

OSU Extension funded an internal pilot program to plan, produce, and evaluate a distance learning program focusing on the Knowledge Economy for Extension professionals in 2007 and 2008. The learning experience was intentionally designed to develop the participants’ capacity to use technology tools as well as promote the adoption of their use in Extension work. We believed that using the tools to solve specific problems or accomplish identified goals would be one of the most effective means of teaching participants about the tools and promoting their use.
Furthermore, we intended for the technology tools to engage the users and instructors in a ‘community’ of learning as well as to deliver information.

We delivered the program to three separate cohorts. A total of 40 Extension professionals completed the program. In identifying program participants, we targeted Extension colleagues with a sense of curiosity, a desire to implement new skills and ideas, and a high level of patience and cooperation. We sought participants who would not be discouraged by ambiguity but rather able to envision and be excited about possibilities. We purposively recruited cohort groups who represented a wide range of program area expertise, job locations, and demographic characteristics.

Each of the three sessions involved content delivery using a variety of e-learning tools over a seven to twelve week time period. Each session was begun with an initial face-to-face instructional event, followed by a combination of instructional modules taught using a variety of e-learning tools, and concluded with group project presentations and reflections on learning via web-based ‘virtual’ meetings or face-to-face events. The various instructional modules focused on specific knowledge economy-related subject matter content such as: entrepreneurship, regionalism, workforce skills and the skills gap, for example.

We issued program participants the various information technology tools and a complement of computer applications at the initial face-to-face event. We then devoted approximately 4-5 hours to hands-on instruction in order to learn their basic use. The information technology tools included: a headset, mp3 player, and a computer camera. The computer applications shared which served as the communication platform included: Skype, a free online Voice over Internet Protocol messaging and video service; Wordpress, a blogging application; WebEx, a multi-point document collaboration software which provides for interactive video and screen sharing; Blogbridge, an internet news aggregator; Basecamp, collaborative project management software; Moodle, a free open-source e-learning course management system; and Camtasia, a screen recording and video capture application for podcast development.

Participants used Skype instant text, audio and video messaging for convenient real-time communication and file sharing. This application also enabled us to easily maintain contact with participants as well as served as a platform for “virtual classroom sessions” with participants. Blogbridge was used to monitor and receive blog postings in the topical areas that we had identified and selected. Audacity and Camtasia were used to create audio and enhanced podcasts focused on topics chosen by the groups formed around specific areas of interest. We used WebEx and Skype to collaborate in ‘real time’ in completing course assignments from remote locations. We used Basecamp and Moodle to distribute assignments and curriculum, to share documents, and to stimulate discussion among participants about specific topics. However, Basecamp and Moodle were able to facilitate such activities in an asynchronous manner only. The creation of new and use of existing topical blogs using Wordpress was also encouraged.

The final presentation of the output also required participants to apply the knowledge gained from experimenting with the various teaching and learning information technologies. In addition to the group projects, weekly assigned learning activities and virtual classroom sessions enabled participants to apply their knowledge and build on their experiences with the various technology tools issued from week to week.

Evaluation

To collect program evaluation data from participants we relied on Zoomerang, an online survey tool that allows users to create questionnaires and analyze survey data on demand.
Evaluation results collected on paper were also entered and tabulated using MS Excel. At the conclusion of the program, participants were surveyed via a written questionnaire using a Likert-type 5-point scale to determine usefulness of the tools, the frequency of tool usage, anticipated future use, and overall satisfaction with each of the tools. Open-ended questions were asked to gather qualitative data on how participants were already using the technology tools from the program and how they planned to use the tools in the future.

We also surveyed each cohort after six months of completing the program, and have continued to survey every six months, to better understand the impact of this program on participants’ Extension work and practice change. The questionnaire for follow-up surveys included questions using a Likert-type 5-point scale to measure adopted use and frequency of use. Another question asked about how participants have used the tools (e.g. individual use/personal use, organizational development, teaching, program/curriculum development, and/or research).

Results and Conclusions

Skype and WebEx were the two tools used that enabled ‘real time’ synchronous collaboration among participants. Participants ranked WebEx higher, most likely due to its audio, interactive video, and screen sharing capabilities which enabled participants to collaborate in completing course assignments from remote locations. Both tools received similar ratings from participants with respect to frequency of use; however, participants were most satisfied with WebEx and indicated that they intended to use WebEx more frequently in the future than Skype.

Two highly rated tools that enabled collaboration in an ‘asynchronous’ format were Basecamp and Moodle. Moodle is free, while Basecamp comes at a cost. Nevertheless, participants favorably rated these tools for their ability to facilitate the distribution of assignments and curriculum and document sharing, as well as to stimulate discussion. These tools were used with the greatest frequency by program participants as well. Furthermore, participants indicated that they intended to continue using these tools in the future for project collaboration and program delivery.

Participants learned how to create audio and enhanced podcasts with Audacity and Camtasia, respectively. These tools were also highly rated for usefulness by participants. Camtasia was rated higher than Audacity for usefulness, frequency of use, anticipated future use, and overall satisfaction (most likely due to Camtasia’s ability to enhance audio podcasts with visuals.) Interestingly, even though they weren’t used with a frequency similar to that of other tools, participants indicated that they very much planned to use Camtasia and Audacity for podcast creation in the future, relative to most of the other tools.

Participants indicated the least useful tools were Skype (for video communication and telephony) and Blogbridge. Participants struggled with Skype’s audio/video capabilities when attempts were made to integrate its use into the course; possibly due to the abilities of the user and/or insufficient Internet connection speed. As a result, relative to the other tools, Skype’s audio/video features were used infrequently, were rated at and near the bottom (respectively) for overall satisfaction, and participants indicated little interest in using these Skype features in the future.

Post-program follow up survey findings indicate a modest level of change in practice. Participants indicated using the tools to augment their research and teaching methods as well as program and curriculum development efforts. Statewide professional development efforts such
as promotion and tenure workshops and have been conducted by program participants using WebEx and Camtasia. Other participants have used Basecamp and other technology tools used in this program to coordinate youth development programming and curriculum such as 4-H Camp and Operation Ohio 4-H Military Kids.

Participants indicated in post program evaluation surveys that they very much planned to use Camtasia and Audacity for podcast creation in the future, relative to most of the other tools. Follow up evaluation surveys of participants indicate that they are following through with those intentions. Follow up evaluation data have indicated that participants have used Audacity quite frequently relative to the other tools. Not surprisingly, however, follow up evaluation data have indicated that program participants have employed Camtasia less frequently than Audacity. Similarly, participants have indicated using Basecamp and WebEx with relatively high frequency. These tools are being used for communicating with colleagues around program and curriculum development as well as with learners in a teaching environment.

More than 8 in 10 (83%) of respondents indicated that they had used at least one of the technology tools since learning about them via the program. More specifically, respondents indicated the tools were being used for individual communication (93%), organizational development (100%), Extension teaching (73%), curriculum development (40%), and research (40%).

**Recommendations, Educational Importance, Implications, and Application**

The tools used in this program are relatively easy to learn to use, and provide utility for teaching, learning, and communicating with others. The implications for professional development and the expansion of Extension’s customer base to non-traditional, technology literate audiences are far-reaching. However, regardless of whether such tools are used to deliver Extension programming or to enable Extension professionals to collaborate and communicate from geographically dispersed locations; systems that provide formal organizational support, training and guidance for their use should be considered and implemented. Moreover, the appropriate infrastructure is required to support the use of these simple and relatively inexpensive tools.

‘Real time’ synchronous collaboration tools such as WebEx provide for voice conversation, desktop sharing, chatting, polling, and the ability to share documents. Asynchronous tools such as Basecamp and Moodle serve as an effective means for project and program management and communication that provides for document distribution, sharing and group editing, communications, and project timeline monitoring. Both of these tools could play a critical role in helping address the increasing complexities of geographically distributed workplaces, team development, and synchronous and asynchronous communications among individuals in distant locations. Furthermore, both of these tools should be encouraged and explored by Extension systems in locations with the appropriate Internet infrastructure. Extension professionals are beginning to realize the potential for such tools to enhance communications, organizational development, and teaching. Of particular significance is their recognition of podcasting as an innovative and new educational delivery tool. However, to effectively address educational needs using this technology an improved understanding of Extension’s existing and potential customers would help Extension better adapt and use tools like podcasts to better meet their educational needs.

Based on formal and informal participant feedback, the program has been successful in encouraging the use and adoption of these various technology tools. Embedding use of tools in a
learning experience and project work proved to be an effective method to encourage the adoption of tools with adult learners. Future efforts to encourage use of technology tools should take into consideration the need for an instructional framework around which the technology tools play a part.

Finally, while we wondered at the outset of this endeavor whether our colleagues would think of this program’s use of technology tools as simply a novelty; as it turns out, we now believe the blended e-learning format is one whose time has come. Interest was sufficient to conduct the first session. Evaluations were favorable, and subsequently two additional sessions obtained full enrollment within 12 months of the first session. Furthermore, there is currently interest sufficient to support a fourth cohort. This blended e-learning experience proved to be an effective method to encourage the adoption of tools and approaches for educational programming with adult learners. Continued research on the use of such tools and e-learning systems by Extension professionals’ and Extension clientele will help to inform Extension’s future strategies for distance learning.

References