Extension The Next 100 Years: Using Emerging Communication Technologies to Deliver International Extension Programs

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ABSTRACT

Since the beginning of Extension a century ago, Extension faculty have used the latest technology and research to meet clientele needs. Today, Extension Faculty have numerous tools at their fingertips to help them reach new audiences and save time. In fact, there are so many tools and the technology develops so rapidly that many faculty have a hard time identifying the best tools to meet their clientele needs and the Extension budget to deliver educational programming. To use technology successfully to deliver high-quality programming, Extension faculty need to be able to:

- Identify which web based technology that can be utilized over multiple platforms within their budget
- Develop a team to deliver distance programming and assign clear roles
- Learn how to implement technology in an engaging and interactive way creating a positive online learning environment
- Provide customer support for end users
- Effectively market opportunities for clientele to engage and learn

University of Florida Extension faculty have utilized emerging communication technologies to integrate multiple interactive video delivery platforms and web based technology tools to provide Extension education programs for clientele and professional development for peers.

Key Words: Extension, emerging communication technologies, web-based, USA

1. INTRODUCTION

Since the beginning of Extension a century ago, Extension faculty have used the latest technology and research to meet clientele needs. Today, Extension faculty have numerous tools at their fingertips to help them reach new audiences, share expertise, and save time and resources. In fact, there are so many tools and the technology develops so rapidly that may Extension faculty have a hard time identifying the best tools and the latest technology to meet their clientele needs within their current budget constraints.

Extension faculty of the Northwest Extension District at the University of Florida have developed expertise in using the latest channels of information to deliver high quality programming to their clientele. Use and experience in web based technology began in 2005 with the use of a single platform delivery of interactive video utilizing single county sites and video bridges based on the central campus in Gainesville, Florida. County faculty gained knowledge of how this technology

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allowed them to share their expertise and to bring state specialist into their county offices, by eliminating the barriers of time and distance. In addition, the Extension faculty learned the "best use" practices that have assisted them to evolve to be successful in their use of multi-platform channels of delivery for Extension programs and professional development today.

2. DELIVERING EXTENSION PROGRAMMING WITH TECNOLOGY

To use technology successfully to deliver high-quality programming, Extension faculty need to be able to understand the components of delivering Extension programming using the most advanced technology available to them. Time, money, and training remain key barriers and constraints to adopting technology (Diem et al., 2011). From years of experience Faculty categorized their success into the five areas of; 1) Assisting Extension faculty to identify which web based technology that can be utilized over multiple platforms within their budget, 2) Developing a team to deliver distance programming and assigning clear roles of the team members, 3) Learning how to implement technology in an engaging and interactive way, creating a positive online learning environment, 4) Understand the importance of providing customer support for the clientele or end users, and 5) Knowing how to effectively market opportunities for clientele to engage and learn.

2.1 Assisting Extension faculty to identify which web based technology that can be utilized over multiple platforms within their budget

The following are the types of delivery platforms, which have been used by County Extension Faculty to deliver Extension programming. As new platforms have been introduced, and as bandwidth has improved additional platforms have been utilized. Some of these platforms require proprietary equipment; this can increase the cost of use and may also minimize the use. Using a singular platform does have benefits including training time for the instructors and other Extension team members. Newer web-based platforms allow for more choices for convenient locations of educational delivery and additional convenience for participants to receive educational programs.

Budgets and available funds have been a consideration of which platform was used. Proprietary equipment usually increases the costs of program delivery and in the past was the cause for restricting the expansion of its use. Less expensive platforms including recent new software based solutions, which use a personal computer as its core component, allow for expanded use of program sites, and rapid adoption. This software solution also adds the flexibility for clientele to remain at home instead of traveling to a central location to participate in Extension programming. Information in Table 1. outline some of these differences.

Table 1. Types of platforms which have been used by county Extension faculty

Interactive Video (PolyCom)	**Webinar (Adobe Connect)**	**Multi-Platform Webinar (Blue Jeans)**	**Uberconference.com**	**Additional Platforms such as ON24, Go-To Meeting**
Participants travel to a central site	Participants join where they are (must have access to internet and strong bandwidth)	Participants join where they are (must have access to internet and a web cam)	Participants join where they are (must have access to phone)	Participants join where they are (must have access to internet)
Interaction with multiple locations/ speakers	Multiple sites more difficult, use activities/ discussion to keep participants engaged	Multiple sites more difficult, use activities/ discussion to keep participants engaged	Only provides audio (compatible with Adobe Connect when using toll-free service)	Multiple sites easy- can accommodate several hundred to 1000+ Offers many options for interaction- avatars, backpacks,
May be recordable	Easy to record	May be recordable	May be recordable	Easy to record and archive
1 unit and monitor costs approximatel y $1K	Site license costs ~$500.00/year for 25 attendees	Max. 25 endpoints, costs ~$1K per account	$20.00/month for up to 100 participants	Most expensive, annual contract ($1K+)

2.2 Developing a team to deliver distance programming and assigning clear roles of the team members

There are many roles and activities that contribute to a successful Extension program while using distance delivery methods and platforms. With a large team each type could be a different person giving each Extension team member ownership beyond presenting of the content of the material being deliver or hosting of the program at the local site. The Extension faculty have found over time that each function or task is important. In a smaller delivery group these roles may be combined, however each function or task must be accomplished to some extent. Information in Table 2. outlines the team member roles and a summary of the functions and tasks of those roles.

Table 2. Roles of Extension Team members and their functions and tasks

Role	**Function/Task**
Team Leader	The keeper of the schedule; master coordinator and develops deadlines for materials, use SharePoint, drop box, or one box to share/edit documents internally
Moderator	Shares responsibilities with clientele and manages the script, handles questions
Speaker	Presents materials
Site Host	Downloads all handout materials in advance and manages local clientele needs, manages local questions
Evaluation	Uploads all tools and analyze data for the team members
Attendance	Record attendance and register in Subscription Management System
Marketing	Develop and distribute resources for all team members
Information Technology Support	Set up "platform" rooms, bridge and call in number/or webinar site, troubleshoot audio/video issues at remote sites, troubleshoot at clientele sites if utilizing webinar software, test bandwidth at host and remote sites

2.3 Know how to implement technology in an engaging and interactive way for a positive online learning environment

Extension Faculty have discovered that just "presenting" in traditional ways may not keep the audience engaged with the presenter especially if the presenter has not developed their skills for today's technology. Clientele that are not in the same room or location as the presenter may have additional distractions which need to be overcome in order to ensure a positive learning environment. In so cases, private companies may have exposed clientele to "info-education" type delivery that use similar formats in their attempts to educate about a new product this adds confusing to the learner as to what is truly education and what is someone trying to "sell" a product. To compete and increase success of engagement of interactive collaboration the materials Extension Faculty have employed a variety of materials, which assist in helping with this success. These materials and a description are listed in Table 3. Each have a place to help enhance the presentations that assist in overcoming the "distance" of the presenter to the audience and compete with the professionally funded private product education from industry.

Table 3. Materials and their description for engaging Extension audiences while using online learning platforms

Materials	**Description**
Slide templates	Consistent format (relates to marketing)
Downloadable handouts	Materials for clientele consistent with a theme (template also provided)
Poll questions	To keep the audience engaged during presentations
Chat box	Allows for interaction between team members and clientele if warranted
Video & Pictures	Increase interaction and localize issues
Incentives	Engages audience and increases attendance

2.4 Understand the importance of providing customer support for the clientele or end users

Each Extension team needs to be aware of all of the tools available to them, how the technology works and how to get help if a problem arises during a teaching or training session. Keeping current on new software and hardware available are important for members of the Extension team. In addition to providing hands-on training for Extension faculty, we use on-line tutorials provided by main campus to help train Extension faculty on how to use software. Just like a professional sports team, practice is important. Using the materials and how the technology works and what to do in case something does not work.

Unexpected issues may happen, and Extension faculty must be prepared in advance to take care of these issues. Creating alternative plans if things happen beyond one's control, like equipment failure, the electrical power or Internet connection failing at a remote site, the main presenter becoming unavailable at the last moment. Many times the workshops and seminars that are offered by Extension Faculty are "after hours" or on Saturdays. It is very important to have technical support contacts that are available while training is happening. This will ensure that interruptions when they happen will be kept to a minimum, it is easy to "take a short break" while experts fix issues.

2.5 Knowing how to effectively market opportunities for clientele to engage and learn

Just as in traditional Extension programming it is important that we effectively market and provide clientele the opportunity to engage in continued opportunities to learn. Because the age range and adoption rates of technology, many successful Extension Faculty use a blend of traditional and new marketing strategies to get information about opportunities of new Extension programs to clientele. Some of these strategies are identified in Table 4.

Table 4. Traditional and Modern Marketing Strategies used by Extension Faculty to reach clientele

Traditional Marketing Strategies	**Modern Marketing Strategies**
Post cards	Weekly email "snippets"
Save the date magnets	WordPress and other blog
Banners	Facebook and Twitter and other social media marketing
Flyers	Monthly incentives and grand prize finale
Web banners	Flash video
Press releases	Blog; Facebook and Twitter and other social media marketing

3. EXAMPLES OF SUCCESSFUL INTERNET BASED DELIVERED EXTENSION PROGRAMS

Over the past ten years, Extension faculty of the Northwest Extension District at the University of Florida have been successful in planning, implementing and evaluating a broad range of Internet delivered educational programs. Some have been single one time training programs while others

have been more extensive and offered as a series. The goal was to utilize the Extension Faculty areas of Expertise providing the best instruction possible to clientele and to eliminate barriers of quality Extension education to clientele of time and distance.

Two of the most recent and successful programs utilized a multitude of Internet platforms including Adobe Connect, Blue Jeans, and Interactive Video. In the Extension 4H youth development area the seven session program of, **Make a Difference Mondays** - **http://nwdistrict.ifas.ufl.edu/4hn/make-a-difference-mondays**, and in the Extension Environmental Horticulture area the four session program of, **Spring into Vegetable Gardening** - **http://nwdistrict.ifas.ufl.edu/hort/2013/12/17/spring-into-vegetable-gardening/ .**

4. THE FUTURE OF EXTENSION PROGRAM DELIVERY USING TECHNOLOGY

What will Extension program delivery look like in the next 100 years, and what will be the new channels of information? In the short term Extension program delivery could lose a sense of geography by become less "location based" as we increase and move to a "cloud based" location for both data storage and information. Social media to stay relevant will soon mature to allow for enhanced "interaction" allowing for teaching and learning to occur.

It is highly conceivable that Extension administrators will soon hire faculty who are "virtual faculty" to develop and deliver Extension programs and provide information to clientele as business does today on a 24-hour basis. We can envision Extension programs and have the similar "customer service" look and feel as the successful merchant companies like Amazon® and information companies like Google®.

According to the International Telecommunication Union, "by the end of 2014, the number of mobile-broadband subscriptions will reach 2.3 billion globally, almost 5 times as many as just six years earlier (in 2008)"(Sanou 2014). In most countries, mobile broadband exceeds the growth of traditional hardwired services. The average number of mobile devices per person has also increased with the introduction of tablets and smartphones with many owning multiple mobile devices. The ability to use interactive video is no longer tied to offices and homes, it's now available for remote use in the field.

All of this will allow "virtual Extension faculty" to provide Extension workshops and seminars from the cloud and making farm visits through field sensors and low flying drones within conceptual delivery today.

5. REFERENCES

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