Symposium

Using Technology to Enhance Extension Education and Outreach

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SUMMARY. We held a technology session at the 2016 Annual Meeting of the American Society for Horticultural Science in Atlanta, GA, to provide guidance for technology choices in extension education and an opportunity to learn more about engaging new audiences, including the millennial generation (people born between 1982 and 2000). The use of technology is now an integral part of extension-client interaction. Presenters in the session gave examples of when technologies such as blogs, social media accounts, or web conferencing tools allowed extension personnel to increase engagement with online consumers and ultimately help fulfill extension's mission of extending knowledge and changing lives. Effective engagement requires both educators and learners to be satisfied with the exchange. It is critical to monitor the quality of these digitally facilitated exchanges as compared with traditional face-to-face interactions. Additionally, it is possible to quantify digital engagement with readily available metrics, such as "retweets" (a reposted or forwarded message) or "likes" (indication an item is appreciated). These allow innovative and substantive reporting to further justify continued use of digital technologies for enhancing client-extension relations.

The objectives of this paper are to discuss how to 1) guide technology choices with a priori understanding of the learners, learning objectives, and learning structures (formal, informal, and independent learning); 2) formally engage extension audiences in distance education; 3) informally engage extension audiences via social media; and 4) specifically target the millennial generation—a group notoriously difficult to reach with extension programming. Within our discussion of engagement via social media, we will cover some of the social media platforms used by the workshop speakers and provide an example of a program that engages the green industry in the use of social media,

highlighting specific strategies for as well as limitations to the use of social media in an extension context.

Guiding technology choices through learners and objectives

Technology decisions must begin with the learners: who they are, why they are learning, and how they are learning? Harris and Hofer (2009) remind us, "Learners first, technologies last." Different learner populations may have preferences about the delivery format of information, depth of information provided, and timing of information provision. Although it is challenging to make generalizations about learner populations (Rapetti and

Cantoni, 2010), extension professionals can make a concerted effort to understand their target populations through informal feedback loops and formal surveys.

Once the learner is identified and understood, learning goals, and instructional decisions (such as the desired depth of understanding or structure of the learning experience) should drive technology decisions. This strategy, grounded technology integration, comes from technology training for pre-service teachers [students learning to be teachers (Harris and Hofer, 2009)]. Chosen technology should add value to the learning experience such that learners are better able to achieve the ultimate learning goal or objective.

One instructional decision particularly relevant for extension professionals is the structure of the learning experience: formal, informal, or independent (Jones and Dexter, 2014). Jones and Dexter (2014), studying teachers learning to integrate technology, identified formal learning as initiated and planned by organizational leaders, whereas informal and independent learning are learner initiated. Informal learning occurs when learners within an organization share, building collective knowledge, and independent learning occurs when learners go beyond the organization seeking additional information. Technology selection should focus on those technologies most suited to the learning structure. For example, formal workshop learning aligns well with synchronous Internet sessions such as Zoom (Zoom Video Communications, San Jose, CA) or learning management systems such as Blackboard (Blackboard, Washington, DC). Informal learning can be facilitated with collaborative tools such as Google Docs (Google, Mountain View, CA) and NowComment (Fairness.com, Charlottesville, VA). Information aggregation tools (e.g., content-specific apps, infographics) or social media platforms [e.g., Twitter (Twitter Co., San Francisco, CA)] can facilitate independent learning and connections beyond the organization.

Organization-initiated formal learning experiences: Distance education

Distance education is an example of a technology-facilitated formal learning experience driven by the organization; it is "institution-based, formal

education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors” (Simonson et al., 2009). Extension uses distance education to reach geographically diverse learning groups throughout each state (e.g., Jeannette and Meyer, 2002; McGinnis, 2015; Stack, 1997), maximizing technological resources to save personnel and travel resources. Interactions between the learner and other learners, the instructor, and the content or resources are paramount in distance education (Moore, 1989). Extension should design experiences to accommodate these interactions and monitor the quality of the learning experience when implementing new distance education technologies (Barton et al., 2016). Media naturalness is one lens with which one can evaluate digitally mediated learner interaction between the instructor and other learners.

Media naturalness theory (Kock, 2005) holds that humans are biologically conditioned for face-to-face

interaction, and digitally mediated communication should try to approximate a face-to-face experience. Kock (2005) outlines five communication elements to consider: colocation (sharing the same space); speech; facial expressions; synchronicity (the real-time back-and-forth nature of communication); and body language. Consider a remote delivery session with Zoom (Fig. 1); to what extent are the learners able to read the instructor’s body language or see his facial expressions? Were learners able to hear the speech? Although logistically possible, were the distance learners actually able to capture the instructor’s attention to ask questions and be answered in real time? Although not a validated measure of interaction quality, a media naturalness lens allows extension professionals to isolate how digitally mediated communication may be weakest, informing resource allocation. Webinars or Zoom workshops that do not sufficiently integrate video of the presenter (presumably to save bandwidth) do so at the expense of communication elements that help approximate face-to-face communication.

Learner-initiated informal or independent learning experiences: Social media

Social media platforms offer an opportunity for learners to initiate their own engagement with extension-provided information or extension professionals themselves. They are user-friendly, inexpensive technologies that

can be broadly scaled to include a large number of users (Fischer and Reuber, 2011); however, social media has mixed connotations within academia. Some see social media as a waste of time and effort; some view it as a valuable network for personal interactions (Schnitzler et al., 2016); and others understand it can be a vast instrument of meaningful engagement. For example, three of the authors (J. Brosnan, J. Hoyle, and E. Stafne) had total engagements (clicks + retweets + likes + replies) for 9 months (Jan. to Sept. 2016) totaling 11,098. Most individual learners do not have access to research literature or the desire to read it. Social media can break down that barrier, providing an accessible format to share information (Schnitzler et al., 2016), and facilitate independent learning. For example, tweeting side-by-side images of a healthy and diseased lima bean (*Phaseolus lunatus*) with 140 characters of information is likely more accessible than a research article on downy mildew and its’ impact. Sharing well-made infographics, such as seasonal pruning tips and techniques, is another way to make information approachable without a lot of intensive effort. Extension professionals can curate the information but do not necessarily need to create it from scratch. However, many organizations, including universities, are not using digital platforms to their maximum potential. They fail to establish two-way communications, thus reducing overall stakeholder involvement (Lovejoy et al., 2012).

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Fig. 1. Remote delivery of instruction during Fall 2015 training. Video stream of the instructor is in a small box at the bottom right corner of the screen beside a video stream of the other cohort (obscured by participant). The small size of the instructor makes facial expression and body language difficult to see during remote delivery sessions.

Perceived credibility of the organization plays an important role in developing and sustaining engagement opportunities (Men and Tsai, 2013). Some individuals may prefer to use social media to engage with friends and family rather than organizations, which would limit their response to organization-initiated social media content (Lovejoy et al., 2012). Men and Tsai (2013) suggest an enjoyable, entertaining variety of content can bring in users but it is still crucial to develop a relationship with the audience. Substantive content might include photographs of seasonal plant problems, infographics on planting procedures, etc. Just as with distance education, any attempt at engagement should be client-centered, fulfilling their needs and sharing their passion via storytelling and other modes of interaction (Habibi et al., 2014).

Engaging extension audiences

DEFINING ENGAGEMENT. To examine strategies for improving engagement, one must define engagement within an extension context. Seger (2016a) defines engagement as meaningful conversations, interactions between people, and active listening. In marketing literature, engagement is defined as the experiences people have within a media platform—specifically, “a collection of experiences” that relate to “a consumer’s beliefs about how a site fits into his/her life” (Calder et al., 2009). Hollebeek (2014) concludes that the consumer engagement process is highly interactive, experiential, and based on a number of sub processes, including learning, sharing, advocating, socializing, and codeveloping. Several authors (King and Boehlje, 2013; LaBelle et al., 2011; Smith, 2004) state that engagement is critically important to the land-grant university system and that attracting nontraditional extension audiences is key to a successful extension future. Successful engagement can lead to social and economic change; extension can and should be a major player in these efforts (Reed et al., 2015). Engagement is a form of leadership (Seger, 2016b) where initiation and cultivation of interaction develops new opportunities for extension. Rosenblatt (2010) describes engagement as a pyramid involving six layers: observing, following, endorsing, contributing, owning, and leading. Not all engagement is equal in depth, but all engagement is valuable.

Fig. 2. This tweet (Twitter Co., San Francisco, CA) from Jim Brosnan on armyworm (*Spodoptera frugiperda*) damage in bermudagrass (*Cynodon dactylon*) had high engagement (3540 impressions, 399 engagements, 11.3% engagement rate). All parties received value with a high number of “likes” and “retweets.”

KEYS TO SUCCESSFUL ENGAGEMENT. In the Cooperative Extension Service, social media interaction can vary from minimal, such as a “like” on a Facebook (Facebook Corp., Menlo Park, CA) post, to crucial, such as advice that saves a farm. Although the former does not fit the Seger (2016a) definition of engagement, it could be the first step in developing significant engagement. One role of extension is to provide

accurate information, which can be accomplished with social media. By posting less serious material, such as a pun inspired by a photograph, one can entertain and attract an audience, then deliver posts that embody the extension mission; e.g., an infographic with seasonal lawn care information. Social media can also aide in the development of relationships and establishment of two-way communication, leading to greater

Fig. 3. Not all tweets (Twitter Co., San Francisco, CA) engage viewers, such as this tweet from Jared Hoyle that resulted in low engagement (five total engagements). Low engagement may be due to the lack of a photo.

engagement (Seger, 2016c). In all types of engagement, it is important that both parties receive value from the relationship (Figs. 2 and 3). People generally want four things from engagement: 1) to be part of something larger than themselves, 2) to feel a sense of belonging, 3) to experience a meaningful journey, and 4) to know that their contributions made a difference (Haudan, 2008; Zhao and Rosson, 2009). Engagement can be contagious, so a peer-to-peer mentoring program, similar to informal learning, can proliferate enthusiasm and create more highly engaged individuals. To maximize engagement value there are important characteristics that drive the process including individual freedom, feedback on performance, importance of the task, identifying with the task, and varying tasks (Ivala and Gachago, 2012; Weyhrauch et al., 2010).

The service extension provides can be considered a type of "product" marketed to an audience of consumers. Paek et al. (2013) suggest that desire for a product, attentiveness to it, recommending it to others, and disappointment when the product disappears are all key drivers of the engagement experience. These same drivers are present when clientele interact with extension professionals. Extension professionals fill a utilitarian role when they provide

information. This utilitarian function is important but the desire to engage with utilitarian organizations is low (Hollebeek et al., 2014). The Cooperative Extension Service has the trust of stakeholders, which is an important part of engagement (Dudo and Besley, 2016; Habibi et al., 2014), so there is the opportunity for deeper interactions, benefitting both parties. Establishing clear objectives when using digital technologies is paramount to achieving maximum potential engagement from stakeholders (Ivala and Gachago, 2012). Important objectives for science communicators are to inform the public on topics of scientific interest, generate excitement, strengthen public trust in science, work on creating specific tailored messages that the public can easily consume, and defend science against the large amount of misinformation that exists online (Dudo and Besley, 2016). For example, when Kansas State University Agricultural Research Twitter (@KStateAgRsch) picked up a turf field day post from the turf extension specialist (@KSUTurf) and tweeted research publications to the public, it delivered the science of turf management to a wide variety of people (Fig. 4).

CENTER FOR RURAL ENTERPRISE ENGAGEMENT: A GREEN INDUSTRY EXAMPLE. Use of new media technologies is an emerging and important

component of extension outreach but many educators struggle to successfully incorporate this method of engagement into their current efforts. Many horticulture businesses experience the same struggle. Green industry stakeholders generally start their business because they enjoy working with plants and are often disinclined to spend significant amounts of time on the computer. The mission of the Center for Rural Enterprise Engagement (CREE) is to focus on helping small businesses succeed through new-media marketing research. The center is a generator and source of knowledge about new-media technologies and enables rural businesses to flourish in this ever-changing environment. The center offers hands-on research experiences for graduate and undergraduate students in an effort to serve as a source for local, regional, and national rural enterprises and others involved in improving rural life. The goal of CREE is to make research-based knowledge discoverable and accessible to individuals, businesses, and communities to foster positive changes to rural livelihood.

Many large horticultural businesses are able to outsource or hire an employee with responsibility for digital engagement. Often smaller rural businesses and most extension offices lack the funds and resources to approach the challenges of new-media engagement in the same way. To equip these stakeholders, CREE created a learning resource (CREE, 2016) to help navigate, simplify, and focus content for agribusinesses engaging online. These resources include short-form blog articles, webinars, videos, resources for independent learning, and a "boot camp" conference designed to fill the learning gap and provide time to plan and implement an integrated engagement approach, a formal learning opportunity. Content generated by CREE is focused on agribusinesses, specifically green industry businesses, but extension educators can benefit from the same information, which focuses on incorporating digital engagement efficiently and easily.

SPECIFIC DIGITAL ENGAGEMENT TECHNOLOGIES. One example of technology used for digital engagement is the weblog (often abbreviated as blog). A blog is "a webpage with new entries placed at the top, updated frequently" (Blood 2002), allowing engaged individuals to learn about a specific topic or interrelated topics

Fig. 4. Kansas State Agriculture Research Twitter (Twitter Co., San Francisco, CA) picked up a turf field day and tweeted out research publications to the public providing information to increase the strength of the public's trust in science.

(Ivala and Gachago, 2012). Blogs build an archive of knowledge and can bridge scholarly university research and the public (LaBelle et al., 2011). While traditional academic publication is a relatively slow process, blogs allow researchers to rapidly share new information, and commenting features allow for a new form of peer discourse within the academic community (Powell et al., 2012). At the same time, content is made available to

the general public and often written in clear language with limited jargon.

A microblog is a social media site to which a user makes short, frequent posts. Twitter is a popular microblogging social network that has gained acceptance among many extension professionals. Twitter can be seen in different ways—as an information network, a newsfeed, a communication tool, and even as a distraction. Twitter posts, called tweets, are limited to

140 characters and can contain various media and links. One can follow and interact with other Twitter users. Twitter usage can generate dynamic interaction without being extremely time consuming (Fischer and Reuber, 2011), particularly when professionals use a social media management tool such as Hootsuite (Hootsuite Media, Vancouver, BC, Canada) to compose and time the release of numerous future posts. Twitter lists are another way to streamline Twitter content. Individual accounts are added to a list with a unifying theme (e.g., North Carolina Cooperative Extension). Then, Twitter users can follow the list and see posts only from those on the list (e.g., county agents with specific expertise), focusing the content to a particular interest.

Tools to quantify Twitter success through metrics and analytics are available and can help establish the value of using the social network (Fig. 5). Different styles of tweets can be used to deliver information to a varied audience. When used prudently as a way to both convey and learn information, Twitter can be a vital tool for extension professionals. It provides a technology that maintains relevance with an ever-changing client base plus gives extension professionals a methodology for their own independent learning, keeping up-to-date on the latest news in agriculture. Twitter also has internal benefits within an institution—users stay aware of current projects and establish a sense of camaraderie (Zhao and Rosson, 2009).

Other popular social media platforms include Facebook, Pinterest (Pinterest, San Francisco, CA), Snapchat (Snapchat, Venice, CA), Periscope (Twitter Co.), and Instagram (Facebook Corp.). Facebook is perhaps the most widely known social network service that allows users to share photos, videos, links, and text to friends. Within Facebook, friends are individuals who mutually consent to share content; users can create subgroups of friends based on affiliation or interest. The interface also allows the creation of group or interest pages. Organizations such as individual county extension offices or university departments can create Facebook pages. Users can “like” an organizational page, adding the organization’s posts and updates, such as events or links to relevant information, to their Facebook news feed. In addition, by liking an organization,

Fig. 5. Analytics available through Twitter (Twitter Co., San Francisco, CA) show a large number of impressions over this period, helping demonstrate the value of using social networks to reach clientele.

Facebook users communicate to other users their interest in the organization, potentially increasing the organization's network and connecting users with mutual interests.

Instagram is a photo-driven social media platform created in 2010 and acquired by Facebook in 2012. Users post photos with captions, which may include hashtags, a word or phrase preceded by a pound sign (#), and map locations. Using an image-based platform such as Instagram, an organization or individual can shape the public's perception of their organization and expertise, their "image power" (Faber, 2002; McNely, 2012). Although not studied in the context of extension, the image-based nature of horticulture lends itself to this medium, as opposed to a more text-based medium. Accounts can be private, requiring permission from the owner for access, or public. The platform is largely driven by individuals without interest groups or themed pages, although organizations can register their own account. Instagram users follow other accounts of interest and like photos. A newsfeed of non-followed posts is populated based on this data. Recently, Instagram has added direct messaging capability and Instagram Stories. An Instagram

Story combines photos and videos from 1 d into a slideshow format, which disappears after 24 h, similar to Snapchat. The feature provides the opportunity to provide information without adding it permanently to the account. Many organizations, including university extension programs, have already begun using this feature. Recent changes to the Instagram platform allow live streaming and direct video messaging.

Pinterest is a content sharing service that allows members to "pin" images, videos, and other objects to their pinboard (Madrigal, 2014). Pinboards serve as catalogs of objects and concepts. Pinterest is a place where people get ideas for any project or interest and other people get inspiration from those pinned ideas. This idea generation and sharing concept could be useful in extension programming. When people are seeking ideas for new landscape or garden projects, extension has an opportunity to share content with an environmental or sustainable focus that meets extension's mission. A project such as building a rain barrel would lend itself to a Pinterest pin. Pinterest users engage in four possession rituals: claiming (individual pins that lead users to the organization's website, blog or social media site), personalizing (accounts with profile

pictures, descriptions or links to website, blog or social media site), storing and hoarding (individual pins lead users to sites not associated with the organization's website, blog or social media site) and sharing (individual pins are repinned by others) (Topp et al., 2014). By implementing these possession rituals, businesses and organizations can transfer information to the intended audience (Topp et al., 2014).

Learning where your audience is when they are online will help determine where efforts are best spent. For example, the most recent data about adult Internet user's platform preferences indicates that the majority (71%) consider Facebook to be their primary social media platform (Duggan et al., 2015) (Fig. 6). Pinterest (28%), Instagram (26%), and Twitter (23%) lag behind in platform priority, however, the uses of these social media sites are often quite different and each platform engages a distinct audience. For example, consumers of green industry products will likely be found on Facebook and professional social media conversations are more often facilitated on Twitter. Audiences vary with purpose of contact so it is essential to understand the goals of online digital engagement before selecting a platform.

Fig. 6. Demographics of key social networking platforms (Duggan et al., 2015). Percentage of adult Internet users using the following platforms: Facebook (Facebook Corp., Menlo Park, CA), Pinterest (Pinterest, San Francisco, CA), Instagram (Facebook Corp., Menlo Park, CA), and Twitter (Twitter Co., San Francisco, CA).

BARRIERS AND LIMITATIONS.

There are a variety of barriers that can hinder effective engagement. Within the departmental environment, these barriers include under appreciation of the effort involved, lack of time, lack of incentive, and lack of support (Fischer and Reuber, 2011; Ivala and Gachago, 2012; LaBelle et al., 2011; Zhao and Rosson, 2009). Both extension educators and green industry professionals perceive that digital engagement is time consuming with a low return on investment. These may be false assumptions, which CREE (2016), for example, seeks to alleviate with resources designed to simplify and de-mystify the digital engagement process.

Limitations can also be defined by the choice of technology or platform if it is not well aligned with the learning population and goals, as previously described. Ivala and Gachago (2012) found that although blogs enhance learning, they are generally one-way outlets with limited active engagement when compared with other digital communication technologies such as Facebook. Some groups of users prefer to use social media in a personal context without adding in professional

contacts (Ivala and Gachago, 2012). Scientists naturally focus on educating the public, but digital engagement technologies can also be used to entertain. Relying only on education can fulfill some objectives such as informing and building trust, but not others such as exciting the public or creating a tailored message (Dudo and Besley, 2016).

DEFINING THE VALUE OF ENGAGEMENT. Administrators, legislators, and the public want to know the impact of research and extension work. Establishing the value of online content allows extension professionals to justify their work. Engagement, reach, and impact are important metrics in extension reporting. Digital technologies are intermediary tools to communicate and engage with clientele, not the end product. They allow extension to measure engagement that could lead to impact. Social media can be used to condense information, making it relatable, and easy to comprehend. Social media can extend the reach of the Cooperative Extension Service; connecting with people who would not have been reached by any other method (Fig. 7). Quantifying value of these strategies can be a challenge; one method involves

using time spent and extrapolating from reported income levels to estimate the value of effort (Stafne and Fidelibus, 2014). Another strategy is to use other surrogate methods such as carbon savings from eliminating the need to travel to events (Bardon et al., 2014).

Digital engagement technologies are centered on communication, but they can do more. Experimentation with the technology and creation of opportunities could lead to new and exciting avenues of job performance and institutional image enhancement, superseding the intent of the original application (Fischer and Reuber, 2011; Harrison and Barthel, 2009). Technology users should think outside the box to design innovative use strategies.

EXAMPLES OF METHODS TO INCREASE ONLINE ENGAGEMENT. Reed and Attlee (2015) suggest multiple methods for increasing engagement for Twitter. The first step is to tweet about yourself, your work, and your institution—in essence to narrate your work. Over time, tweets should focus on building relationships instead of on the content creator. Hashtags are used to identify messages on a specific topic, allow people to search for tweets on a common topic, and join a conversation. Walfred (2014a, 2014b) suggests using hashtags and emphasizes the need to be responsive and active when using Twitter. Retweeting, reposting or forwarding a message posted by another user, is a good way to expand the reach of extension stories from colleagues. In a guide for researchers' Twitter use, Schnitzler et al. (2016) recommend engaging in professional conversations and avoiding bias. It is critical to remember the digital footprint left in online engagement and the future implications of publicly expressing a bias.

Extension professionals can create learning opportunities via Twitter chats (a group of Twitter users meeting at a predetermined time to discuss a certain topic, using a designated hashtag for each tweet contributed; #AgChat, #EdTechLN, etc.), polls, podcasts, links to blogs, and Periscope—a platform that creates live video streams, sending content directly to the user in real time. Tweets including the same hashtag can be compiled via online aggregation platforms such as Storify (Livefyre, Adobe, San Francisco, CA) to enhance the user experience. Using Storify, one can assemble a collection of tweets from conferences, field days, or other similar

Fig. 7. This tweet (Twitter Co., San Francisco, CA) from Jared Hoyle showing a video about wild violet (*Viola odorata*) control sparked interest from unknown twitter user that would not have been reached by any other method allowing technical issues to be addressed.

events and allow a reader to “attend” remotely (Fig. 8). Photos and videos provide a big boost in readership and engagement (Walfred, 2014a). Other tips to enhance digital engagement include setting benchmarks and goals followed by regular measurement and using Google Trends (Google, 2016) to understand clientele searches. Linking digital engagement technologies together allows extension professionals to reach the broadest audience and increase overall discoverability.

REACHING MILLENNIALS: AN EXAMPLE OF TARGETED ENGAGEMENT. To reach a diverse audience, extension professionals may need to use specific

strategies to target specific demographics. The example of millennials (people born between 1982 and 2000) can be used to demonstrate the concept of using research and data to create a strategy for engaging a distinct audience. Millennials as a group are under served by many cultural institutions and programs would like to reach this population (Dilenschneider, 2016). This generation is particularly suited to digital engagement technologies for extension information because millennials are a digitally native generation. Millennials also represent a larger pool of potential learners, they comprise more than one quarter of the total

population of the United States (Council of Economic Advisers, 2014). The 2015 Millennial Impact Report examines the activities of millennials “because they will soon dominate our companies, organizations, and communities” (Feldmann et al., 2015).

One can begin by looking for ways in which the target population is distinct from other groups. Millennials are defined by the role of technology in their lives. Fifty-one percent of millennials say that they are either “almost always” or “mostly” online and connected (American Press Institute, 2015). Millennials make up the largest portion of the U.S. workforce (Taylor et al., 2014) but they are generally less financially secure than previous generations. Many millennials came of age during the Great Recession (economic downturn during the late 2000s), impacting the way they both spend and save their money. Millennials are the most educated generation and, as a result, retain the highest levels of student debt (Fry et al., 2014). Within these general parameters, millennials are a highly varied generation. They are the most ethnically and racially diverse generation to date (Taylor and Keeter, 2010). The youngest millennials are in high school while older millennials have established families. It is important to consider this diversity when designing a program intended to reach the millennial generation.

Considering this background research led to the development of four tips for communicating with millennials. 1) Use platforms millennials are already using; currently, Facebook is still the number one choice but Instagram use is on the rise. 2) Keep it short; it is important to capture attention in this media-saturated environment. 3) Have a two-way conversation. This can be accomplished by soliciting engagement, asking the audience to respond or post their own images. Conversation is also created when professionals respond in a timely manner to audience posts. Hashtags (#) allow the audience to follow along with and contribute to the conversation. 4) Make it both entertaining and educational (“edutainment”); this allows information to reach and engage a wide audience. Some examples of edutainment that would be appropriate for an extension audience are: videos [YouTube (YouTube, San Bruno, CA), Vimeo (Vimeo, White Plains, NY)], podcasts,

Fig. 8. Storify (Livefyre, Adobe, San Francisco, CA) was used to assemble a collection of tweets (Twitter Co., San Francisco, CA) from the Using Technology in Extension session at the 2016 ASHS Annual Conference, allowing a reader to “attend” remotely.

and location-based games [Pokémon Go (Niantic, San Francisco, CA)].

Conclusions

Extension educators have a wealth of digital tools available to them for engaging current and potential clients in addition to traditional strategies currently in place. Web-based distance education systems increase the reach of formal learning opportunities, while online social media applications make informal engagement with a broader audience easier and possibly more impactful. However, extension professionals must keep learners in mind, “Learners first, technologies last” (Harris and Hofer, 2009), as the ultimate focus should be on the learning objective. Throughout this session at the ASHS 2016 conference, the speakers organically came to common understanding that it is critical to balance the value of in-person and digital interaction. Considering the critical elements of communication when planning digital interaction is a valuable strategy for maintaining this equilibrium. Navigating the social

media world as a professional is a new venture, but the outcomes for extension could be substantial. Finding others who have similar interests in creating a new vision for the Cooperative Extension Service will be key to establishing future opportunities and pathways for digital engagement technologies.

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