EXTENSION
College of Agriculture, Biotechnology & Natural Resources

PEER REVIEWED FS-20-29

Navigating Online Program Delivery With Zoom Amid the COVID-19 Pandemic

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University of Nevada, Reno Extension educators have a long history of using distance education to reach constituents in remote parts of the state. Interactive video has been used successfully for decades to teach a variety of topics of interest to Nevadans, who would come into their local county Extension office to participate in educational programs. Many Extension professionals were comfortable delivering programming to clientele in traditional face-to-face methods. Then the unexpected global pandemic COVID-19 occurred, and traditional in-person delivery of educational programs became obsolete. No longer were Extension professionals able to meet face-to-face or work in groups, which meant we needed to explore new modes of information delivery. This publication will explore how four faculty moved their programming online to meet both programmatic and clientele needs.

According to PEW Research Center (2019), 52% of American adults were using the internet in 2000, and by 2019, 90% of adults were using the internet. In 2019, 100% of 18- to 29-year-olds were using the internet, 97% of 30- to 40-year-olds, 88% of 50- to 64-year-olds, and 74% of those 65 years and older. One of the challenges in Nevada, specifically in rural communities, is limited and/or slower broadband or internet reliability. According to PEW (2019), broadband service in American homes has increased from 1% in 2000 to 73% in 2019. However, this varies by race with 79% of Caucasian households having broadband in 2019, compared to 66% of black homes, and 61% of Hispanic homes. Perrin (2019) reinforces this, indicating rural Americans are less likely to have home broadband, a smart phone, and/or a phone/laptop computer than urban or suburban Americans. Additionally, lack of infrastructure in rural areas and not owning multiple devices that can connect to the internet are challenges in rural America.

The case studies below vary by program delivery type. All authors used Zoom as the base platform. Lessons learned are provided to assist others in navigating and using Zoom as a base platform.

Case Study #1: Agriculture: Living Beyond a Pandemic

Lindsay Chichester created a new online program series called Agriculture: Living Beyond a Pandemic. The goal of the series was to have agriculture industry experts from around the country share what was happening with their respective fields of expertise to provide insight during a

tumultuous time. There were eight sessions. Five of the webinars were delivered on a weekly basis, and the remaining three were delivered on a biweekly basis. The topics included: agriculture risk and law; meat packers, pricing, and availability; backyard poultry production; pork industry update; dairy: milk dumping and National Dairy Month; Doc Talk; home meat processing; and stress and mental health wellness. The target audience was the general public and consumers.

Chichester used Zoom Meeting as the primary platform for the speakers, but then created a live stream to the Douglas County Extension Facebook Page for general viewing. Chichester hosted the webinar and managed the Zoom platform, and one of her staff managed the Facebook Page, where she would then copy questions from participants into Zoom for the speakers to answer. Each webinar was 45 to 90 minutes long, depending on engagement from the audience. The Facebook audience reach varied from 88 (ag risk and law) to 931 persons (meat packers, pricing, and availability), with minutes of view time ranging from 91 minutes for home meat processing (technical difficulties resulted in having to upload this content afterward) to 2435 total minutes of view time (41 hours) for the backyard poultry production.

Since these webinars were livestreamed to a public Facebook Page, end users did not need a Facebook profile to view any of the information or to access it after the fact. There were several advantages to using Facebook, which included: the ability to pull the analytics from each of the sessions to determine the reach and engagement of users; Facebook acts as a repository for the recordings for as long as needed, upon which time they can be removed; Facebook has a closed-captioning feature for videos, which meets the ADA accessibility requirement; people can watch and listen to the recordings after the presentations if it better fits their schedules; and Facebook allowed for an event to be created, which could be boosted (paid advertisement) to reach larger audiences.

Lessons learned:

- Zoom Meeting was the platform used for this. However, Zoom Webinar would have been a better choice, as only the speakers and/or their presentations would have been seen in the middle of the screen, instead of speakers and attendees all sharing a piece of the screen, as is the case with Zoom Meeting.
- Test, test, and test again prior to the event. Recreating a mock event will help work through any kinks and challenges that may come up and make everyone more comfortable with the entire process.
- Have multiple staff assist with the behind the scenes work on the platforms and handle calls or requests of how to get online.
- Have a list of questions or talking points ready in case the audience engagement is minimal. This will not only make your speakers feel more engaged, but it also gives participants time to think and submit questions or comments.
- If you do not require registration, you will not be able to track participants to obtain evaluations.

Case Study #2: Nevada Agriculture Outlook

University of Nevada, Reno Extension has implemented agricultural risk management education for over 10 years. This education was traditionally provided across the state in personal one-on-one workshops to reach the five areas of risk, which are: production, price and market, financial, institutional, and human resources. The team supports Nevada agriculture in a pro-active approach that increases the industry's capacity to sustain operations. The Nevada Ag Outlook team, led by Staci Emm, decided that the role of this project would be to disseminate information on and discuss the areas of risk associated with agricultural production. All stakeholders would be encouraged to participate, including political representatives and staff, agricultural producers, agency leaders, state and county officials, and interested business owners or business startups. The driving force of this Extension program is to strengthen communication between stakeholder needs and the government.

The Nevada Ag Outlook Program is set up to discuss markets, prices and unemployment impacting Nevada. Each agenda for every meeting also provided the opportunity for agencies to discuss COVID-19 programs and assistance available from the United States Department of Agriculture (USDA), Small Business Administration (SBA), Nevada Department of Agriculture (NDA) and the Nevada Governor's Office of Economic Development (NVGOED).

Emm used Zoom as a mechanism to hold this face-to-face interactive meeting. Zoom provided an effective platform to hold discussions, and then email was used to disseminate information. The Zoom plug-ins that schedule straight to Outlook were used, which made it easy to reach participants. Meeting notes were provided with the next scheduled meeting invite, so that there was at least four-weeks' notice of the next scheduled meeting. In addition, the meeting notes allowed others that were not able to attend to access to the information. The group participation was around 50 individuals and has grown as others have asked to be added the invite list.

Lessons learned:

- The host can mute or kick individuals out of the meeting if they are being noisy and/or disruptive.
- PowerPoint sharing provides an easy way for different people to present at a distance. PowerPoints should be shared with the host before the meeting, instead of relying on screen sharing in real-time, in case of technical difficulties.
- There should always be an alternative host named.
- The host should make sure they have enough internet bandwidth to host the meeting. If bandwidth is limited, turn off video.
- Make sure you can turn off the video in case someone is doing something unprofessional.

Case Study #3: Consumer Horticulture Education: *Grow Your Own, Nevada!*

The Extension horticulture team in northern Nevada responded to this crisis by offering the popular *Grow Your Own, Nevada!* Program by Zoom Meeting, rather than by the usual methods of in-person and face-to-face. Usually offered at $15 per class, the program was provided free of charge in April 2020 due to COVID-19, which caused an increase in food insecurity in Nevada and intensified the desire to learn more about growing your own food.

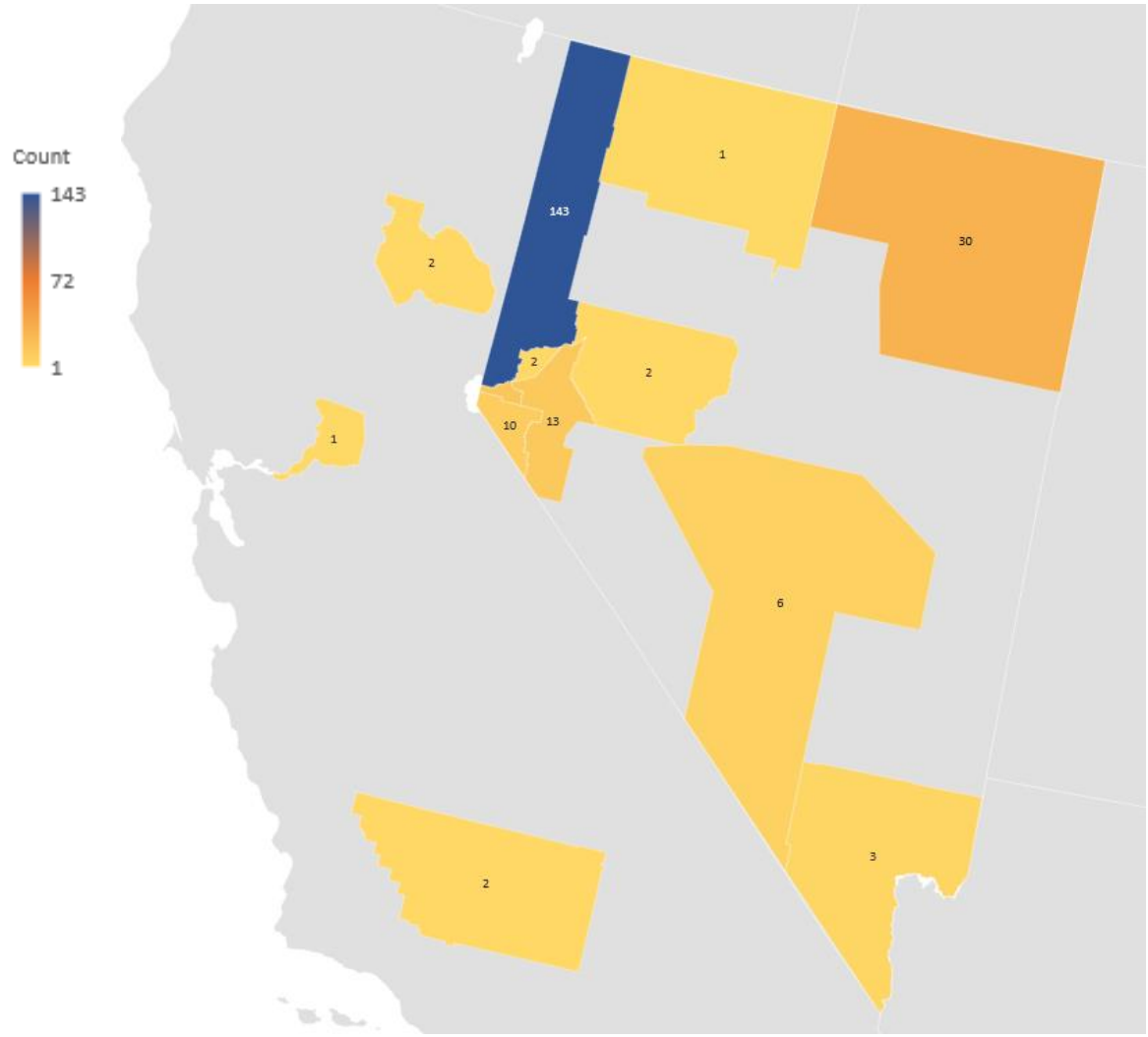
Providing *Grow Your Own, Nevada!* classes by Zoom increased the statewide participation from about 60 to 80 attendees per class using interactive video to as many as 400 attendees per class by Zoom. We reached more Nevadans with less need for physical infrastructure, thus enhancing our ability to help Nevadans live better, more successful lives.

Each member of the team had a different assignment during the webinar series. One team member handled the technology and admitted attendees from the waiting room. The second team member acted as moderator, introducing the topic and speaker and monitoring the chat box for questions. The third team member was the instructor.

Lessons learned for virtual large-size classes:

- Require attendees to register ahead of time. This is an option when you set up a Zoom link. It allows for screening of participants prior to the session and for collection of county-specific attendance data.
- Activate the waiting room function of Zoom during the session set-up to make sure all attendees are registered participants. Ask for the attendee's name and zip code during registration if you want to collect state and county reporting data. (See Figure 1)
- All class attendees should be muted upon entry, and options for unmuting and joining with video toggled off during the Zoom meeting set-up. Questions could be asked at any time during the class, but we asked participants to enter questions into the chat box, and all were answered at the end of the class.
- Allow a 15- to 20-minute pre-class waiting period before the class starts for participants to log in, admitted from the waiting room, and to resolve technical issues.
- Occasional verbal contact or "chatting" with class participants during the pre-class waiting period keeps everyone happy and engaged. An alternative is to share a "Welcome" slide so that attendees know they are in the right place. Another alternative is to use a royalty-free music service to play relaxing tunes during the waiting period.
- Allow a half hour before class for your team to get organized, do sound-checks, and test that the instructor knows how to use the "share" function of Zoom.
- Know upfront that the number of people who register for a free program will be larger than the number who actually attend. About two-thirds of our registrants actually attended the Zoom presentations.
- Keep the lecture part of Zoom classes to no more than an hour to prevent screen fatigue.
- Allow at least a half hour at the end of the class for questions by chat. The Q&A sessions after each class lasted about 30 to 45 minutes.
- Since most attendees registered to attend all eight sessions of the program, they learned quickly to email some of their questions ahead of the class to make sure they were addressed. Our speakers found this useful, and often incorporated answers to the questions into their presentations.
- We recommend one host and two co-hosts for classes larger than 100 attendees.

Figure 1: Map of Zoom “Grow Your Own, Nevada” class attendees by zip code



Case Study #4: Pinyon-Juniper Encroachment Education Program

Moving interactive workshops online presents a unique set of challenges, but currently we have many tools available to make these successful. In August, Christina Restaino and the Living With Fire Program team held a four-hour multistate workshop with participants from Nevada, Oregon, Idaho, Utah and Montana. The workshop focused on a new multi-state program titled “Pinyon-Juniper Encroachment Education Program.” The workshop goal was to develop a communication strategy for educating the public and key stakeholders about conifer encroachment in Western rangelands.

To try to mimic in-person interaction, breakout rooms and polling features were used in Zoom. Participants were sent instructions for breakout rooms prior to the meeting, and Restaino explained all exercises clearly to the entire group before moving into the smaller rooms. Each breakout room had both a facilitator and a notetaker. Breakout rooms were used twice for two different activities, and each room had approximately seven to eight participants. Discussion and

activity in rooms was engaging and thoughtful, and 94% of workshop participants found the breakout rooms to be a good use of time. After breakout rooms ended, time was allocated for the large group to debrief with a facilitated discussion. In full-group discussions, the "hand-raising" tool in the chat box was used to manage the larger group.

Lessons learned:

- The workshop facilitator should not facilitate a breakout room, but should instead be available for any technical issues. The facilitator would then be able to drop into all breakout rooms to engage in discussions.
- Always create a facilitator agenda that goes out to the facilitation team. Include all the tiny details (e.g. at 9:20 share screen, at 10:15 launch poll). This way, everyone has a clearly defined task.
- Always start the workshop with a "How to Use Zoom" slide, pointing out how to mute, raise hand, use reactions, etc.
- Work in short breaks every 60-90 minutes.
- Take screen captures of poll results because they have all the information you need for reporting. The poll data is archived in Zoom, but it is cumbersome to sort through.

Conclusions

Each of the case studies reached a different audience using the Zoom platform. Being forced to find alternative methods during COVID-19 for reaching Extension constituents has been eye-opening. Extension faculty have had to rethink their long-held beliefs about how best to reach their audiences, and to modify some of their teaching methods to better reach their audiences, not only in Nevada, but across the country.

The Zoom platform has many advantages to reach different audiences. Extension participants are embracing this online tool, and most have been able to access programs and interact. Many teams have already begun using the Zoom Webinar, rather than Zoom Meeting, to enhance online education and discover different techniques for reporting and program evaluation. The Zoom Webinar function is especially useful for larger groups, where potential disruption, intentional or not, is minimized by design. Lobley and Ouellette (2017) discuss additional advantages of using web-based technology (Zoom), which include avoiding some participation barriers such as travel, work schedules and childcare. Additionally, if internet is not available, Zoom offers the option to call into a Zoom event, allowing the flexibility for a wide variety of audiences. Additional benefits to Extension faculty and staff may include the opportunities to bring in highly qualified speakers and expertise without the additional expense of travel, or the opportunity to do hybrid learning or blended learning, which is a mix of face-to-face and online (Silkwood et al., 2017). The use of online technologies also allows for the opportunity to not only reach larger audiences nationally, but challenges us to think about the opportunity for international program delivery and skill development in a safe environment that is cost effective. Scanga et al. (2017) reported much success in teaching skills, sharing knowledge and building empathy with international audiences over Zoom via 18 courses.

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