

5-10-2024

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Recommended Citation

Zobrist, K. W., & Whyte, B. J. (2024). Audience Preferences for Extension Forestry Zoom Webinars. *The Journal of Extension*, 61(4), Article 10. <https://doi.org/10.34068/joe.61.04.10>

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Audience Preferences for Forestry Zoom Webinars

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Abstract. The Washington State University Extension Forestry program switched to all online programming in 2020 in response to the COVID-19 pandemic. Over 2,000 people participated in our webinars, providing an opportunity to survey a large audience about their webinar preferences. We found that people prefer webinars that are approximately an hour long and offered in the evening or late morning. Participants placed high importance on having a recording available, but they had mixed views on including video of the instructor speaking. Participants found online delivery to be successful and had a strong preference for online programming in the future.

In response to the COVID-19 pandemic that emerged in early 2020, many states issued stay-at-home orders (Moreland et al., 2020), forcing Extension programs to quickly pivot and offer educational content online (e.g., Bamka et al., 2020; Comito et al., 2020; Fawcett et al., 2020). The Washington State University (WSU) Extension Forestry program was no exception. As we canceled our in-person events in the spring of 2020, one of the first distance-learning programs we implemented was a series of webinars for family forest owners and others interested in learning more about forestry from the comfort and safety of their homes. The number of people registering for these webinars far exceeded our expectations, and we took advantage of this large audience to conduct a brief survey on general preferences concerning delivery of Extension forestry webinars. The purpose of this study was to identify any strong audience preferences surrounding webinar delivery strategies that could help us and other Extension professionals grow our online audiences by making webinars as convenient and attractive as possible to potential participants.

METHODS

We used the Zoom platform (<https://zoom.us/>) to offer live webinars on twelve different forest stewardship topics in the spring and summer of 2020. The webinar series comprised 50-minute presentations followed by a question and answer (Q&A) period. We offered each webinar twice on the same day—once at 12:05 p.m. and again at 7:05 p.m.—which is similar to what other universities have done (e.g., Allred & Smallidge, 2010). We encouraged people to register for webinars they were interested in even if they could not participate

live, as all registrants would later receive links to recordings of the webinar. There were 5,424 total registrations—representing 2,222 unique individuals, as some participants registered for multiple webinars—from 1,747 distinct families or groups.

Table 1 summarizes the webinars we offered, how many people registered for each webinar, and how many people attended each webinar live. Those who registered but did not attend live received a YouTube link to the recording afterward. The recorded webinars on YouTube have hundreds of views, but such views are anonymous; we do not know how many of those views represent people who registered but did not attend live. Those who attended live also received links, and we made the links available to the public.

We asked registrants to self-report demographic information and information about their forest ownership characteristics as part of the webinar registration process. Of the 1,785 individuals who provided this information, the majority identified as female and white (Table 2). Registrants represented a mix of private landowners, public land managers, and a surprisingly high number of interested members of the public who did not own or manage forestland (Table 3). Registrants represented 939,095 acres of private forestland and 16,495,992 acres of public forestland. Participants were residents of 33 of Washington's 39 counties, 24 other states, and three other countries. For 73.9% of registrants, this webinar series was the first Extension Forestry program they had ever participated in.

Of the 1,747 families or groups, we received 1,733 valid email addresses. At the end of the webinar series, we sent email invitations to participants to complete an online questionnaire created using Qualtrics (<https://www.qualtrics>

Table 1. Dates, Titles, and Attendance for the Afternoon and Evening Sessions of the 2020 WSU Extension Forestry Spring and Summer Webinar Series

Date	Webinar Title	Total Registration	Live Attendance
5/13/2020	Moving the target: Managing your forest in a changing climate	482	353
5/18/2020	Mushrooms you can eat more than once—Growing your own edibles	854	522
5/21/2020	Lions and squirrels and bears (oh my!)—Critters in the forest	470	325
5/27/2020	A dead tree's excellent adventure—There's nothing bogus about dead wood	517	329
6/4/2020	Another one bites the dust—Why so many trees have been dying in western Washington	604	334
6/8/2020	Dang it—Who chewed my tree?? Controlling animal damage	291	158
6/18/2020	If you build it, they will come—Fun wildlife habitat enhancements	512	228
6/23/2020	Well begun is half done—Proper site preparation and early vegetation control	312	148
6/29/2020	Plant trees like a boss (so that you only have to do it once)	365	173
7/14/2020	Plantae non grata—Invasive species on small woodlands	429	209
8/11/2020	The four horsemen of the root disease apocalypse	416	193
8/18/2020	Princes in disguise: Frogs and other amphibians in northwest woodlands	175	111

Table 2. Percent of Registered Participants by Race and Gender (N=1,785)

Race	Male	Female	Total
American Indian or Alaska Native	0.3	0.7	1.0
Asian	1.0	2.6	3.6
Black or African American	0.2	0.5	0.7
Hispanic or Latino/a	0.7	1.6	2.3
Native Hawaiian or Pacific Islander	0.3	0.3	0.6
White	30.7	56.0	86.7
Two or more races	1.3	2.5	3.8
Some other race	0.8	0.6	1.4
Total	35.3	64.8	100

Table 3. Registered Participants by Landowner Type (N=2,222)

Landowner Type	Number of Registrants	Percent of Registrants
Small forest landowner	1,065	47.9
Manager of someone else's private forestland	90	4.1
Public forestland manager	73	3.3
Does not own or manage forestland	994	44.7

.com/). We then sent a reminder email six days after the initial invitation. In the questionnaire, we asked multiple-choice questions regarding the length of the webinar, the time of day it was offered, the importance of recordings, the effectiveness of online learning, and individual preferences for online vs. in-person delivery. We also asked whether people preferred to

think of these programs as *webinars* or *online classes*, hypothesizing that participants might perceive an online class as a more robust or valuable program. Finally, we asked whether people preferred to have video of the instructor speaking or PowerPoint slides and instructor audio only. Including video may help people feel more connected to the instructor; it could

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also be distracting or cause bandwidth issues. In addition to the multiple-choice questions, the questionnaire included space to provide written comments. We received 453 questionnaire responses, which is 26.1% of the families/groups surveyed and 25.9% of the total families/groups registered.

RESULTS AND DISCUSSION

WEBINAR LENGTH

Ninety-four percent of respondents said 50 minutes plus a Q&A session was “just right” in terms of length (Table 4). This is consistent with Rich et al. (2011), who found a strong preference for a length of 45 to 60 minutes when presenting Extension webinars to farmers. Dettenmaier & Locklear (2018), however, recommend limiting the presentation to 40 minutes to allow for a longer Q&A. Respondents in our study expressed differing opinions in the written comments about the length of the Q&A. The instructors for our programs stayed on for varying lengths of time in an attempt to answer every posed question (within reason) and often fostering conversation among the participants. Most written comments regarding the Q&A expressed support for this approach, but there were some who wanted the Q&A limited to ten minutes because they did not want to stay longer than an hour, miss any questions, or have to watch the recording to catch the remaining Q&A.

It is often not possible to address all questions in ten minutes or even 20 minutes. The number of questions is unpredictable, and in some cases we had over 30 minutes’ worth of questions. In subsequent events, we cut off questions after ten minutes but took note of any remaining questions and asked the instructor to provide written answers; we emailed these written answers to participants after the event. This approach seems to work well, but we do not have the data necessary to draw any conclusions. Asking respondents specifically about Q&A preferences would be a useful addition to a future study.

WEBINAR TIME OF DAY

In relation to the time of day in which the webinar was held, more people preferred evening to any other time of day by a wide margin, followed by late morning and early afternoon (Table 5). A couple of respondents indicated in the written comments that their preferences were seasonal, preferring evening in the summer and daytime in the winter. Overall, our results suggest that our strategy of offering each webinar twice—one midday and the other in the evening—meets the needs of most participants. Said one respondent, “I liked that two classes were available—one around noon, the other at 7 p.m.—very effective and flexible towards me being able to attend.” We offered our midday webinars around noon, but given the slightly higher preference for before noon, we may schedule future sessions for 11 a.m. to see if we get better participation.

Table 4. Participants’ Opinions on a Webinar Length of 50 Minutes (Plus Q&A) (N=448)

Opinion	Number of respondents	Percent of respondents
Too long	13	2.9
Too short	14	3.1
Just right	421	94.0

Table 5. Preferred Time of Day for an Extension Webinar (N=450)

Preferred Time of Day	Number of Respondents	Percent of Respondents
Early morning (6:00—9:00 a.m.)	22	4.9
Late morning (9:00 a.m.—12:00 p.m.)	95	21.1
Early afternoon (12:00—3:00 p.m.)	82	18.2
Late afternoon (3:00—6:00 p.m.)	63	14.0
Evening (6:00—9:00 p.m.)	188	41.8

Table 6. Importance of Having a Recording of a Webinar Available After the Fact (N=453)

Importance	Number of Respondents	Percent of Respondents
Very important	255	56.3
Somewhat important	141	31.1
Neither important nor unimportant	33	7.3
Somewhat unimportant	10	2.2
Not at all important	14	3.1

THE IMPORTANCE OF A WEBINAR RECORDING

Most respondents (87.4%) ranked having a recording of the webinar available after the fact as somewhat or very important (Table 6). Respondents left numerous written comments stressing the importance of having recordings available. Some cited internet bandwidth issues, such as one respondent who said, “Having the option to view again later is vital for me, both for review and because my web setup often has glitches that cause short interruptions in transmission.” Others indicated that a recording better fit their learning style; one respondent stated, “Having these online and recorded allowed me to attend/view more details . . .” Most of the comments about the recordings, though, were related to having scheduling conflicts with the live sessions. “When I wasn’t able to watch an online class live, the flexibility to watch a

recorded version when it fit my schedule was very helpful,” said one respondent. “I liked being able to watch later, especially since I often wasn’t able to watch at the scheduled time,” said another.

VIDEO OF INSTRUCTOR

Regarding whether to include video of the instructor speaking or just the audio with the instructor’s presentation slides, the results were relatively evenly split, with 53.6% of respondents preferring audio only and 46.4% preferring audio plus a video of the instructor (Table 7). On the surface, this suggests that whether the instructor’s camera is on or off is not going to make a major difference in the audience’s overall enjoyment of the webinar. However, it could be interesting for a future study to gauge the strength of these preferences by asking if respondents strongly or somewhat prefer one or the other (and also providing a “no preference” option). One respondent stated, “Having a video of the presenter’s face helps attendees who are lip readers.” This consideration may have implications for accessibility. However, Zoom now offers real-time automatic closed captioning (Larkin, 2021), which may better meet accessibility needs. Subsequent webinars that we offered using the closed-captioning feature resulted in positive feedback from several attendees with hearing difficulties.

User preferences aside, including video of the instructor speaking may aid in learning and retention. For instance, Church et al. (2007) found that people who watched a video of a speech were better able to recall points that were accompanied by gestures. The contribution of gestures to learning is even more pronounced for video presentations than it is for those done in person (Koumoutsakis et al., 2016). Thus, including video of the instructor speaking—especially if it shows the instructor’s hands—may be important in Extension webinars regardless of stated user preferences.

“WEBINAR” VS. “ONLINE CLASS”

Almost half of respondents had no preference between the terms “online class” and “webinar” (Table 8). For those that did prefer one or the other, more than five times as many people preferred “webinar.” There were a few interesting comments about peoples’ perceptions of these terms. For instance, one respondent said, “I like the term online classes because these do feel more like classes vs. webinars, but for me, it also carries the assumption that they are paid vs. free . . .” Another said, “Webinar sounds amateur/hobby-ish, and online class sounds more academic.” Overall, though, our results suggest that the term “webinar” resonates with the most people.

PARTICIPANT PERCEPTIONS OF ONLINE LEARNING EFFECTIVENESS

When asked how effective the online format was for their learning, an overwhelming 99.1% of respondents indicated that it was very or somewhat effective (Table 9). Other

Table 7. Preference for Including a Video of the Instructor Speaking (N=442)

Video Preference	Number of Respondents	Percent of Respondents
Audio only	237	53.6
Audio plus video	205	46.4

Table 8. Preferred Term for the Program (N=451)

Preferred term	Number of Respondents	Percent of Respondents
Webinar	198	43.9
Online class	35	7.8
No preference	218	48.3

Table 9. Participant Perceptions of the Effectiveness of Online Delivery (N=446)

Perceived Effectiveness	Number of Respondents	Percent of Respondents
Very effective	323	72.4
Somewhat effective	119	26.7
Somewhat ineffective	2	0.4
Not at all effective	2	0.4

Extension programs have also found online delivery to be highly effective—both before and during the pandemic (e.g., Bamka et al., 2020; Comito et al., 2020; Loblely & Ouellette, 2017; Rich et al., 2011; Robinson & Poling, 2017).

Our sample may be biased, since it comprises people who self-selected to register for an online learning program. However, this bias may be mitigated by the fact that online learning was the only option at that time (due to the pandemic); this constraint likely steered people to our webinars who would not otherwise have chosen online learning. Furthermore, a much greater portion of the public was familiar with using Zoom than had been before the pandemic. By April 2020, Zoom usage had skyrocketed to 30 times what it had been pre-pandemic (Sherman, 2020). This broader familiarity may have made people more willing to try webinars than they would have been a few months earlier. Thus, our sample of online participants may be more representative of the broader population than it would have been before the pandemic.

In this study, “effectiveness” was not specifically defined. As such, the results represent respondents’ subjective perceptions. It is encouraging that so many of our respondents perceived online delivery as effective. However, it would be useful for future studies to evaluate the effectiveness of online Extension programs relative to defined, quantifiable measurements—for instance, a pre- and post-test to measure knowledge gain. This specificity would allow for comparisons

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between participants' perceptions and their actual achievements of the program's specific learning objectives.

DEMAND FOR FUTURE ONLINE EXTENSION FORESTRY PROGRAMS

Our results indicate that there is strong demand for online Extension forestry programs that will continue beyond the pandemic. We received numerous written comments from people who appreciated the online opportunities because they had never been able to participate in our in-person programs due to time and geographic constraints. In response to our question as to whether respondents preferred to attend online or in-person Extension education programs, 25.2% preferred to only attend online programs, 42% preferred online but would also attend in-person programs, 23.7% preferred in-person programs but would also attend online, and no participants preferred only in-person programs (Table 10).

Similarly, 49.4% of respondents said they would attend another one of our online programs in the future based on their experience with these webinars, and 50.1% said they would attend another one of our programs (either online or in-person). Fewer than 0.5% of respondents said they would either only attend one of our in-person programs or would not attend any more of our programs (Table 11).

In evaluations of other online Extension forestry programs offered during the pandemic, participants also indicated a desire to have both in-person and online options. As the pandemic lingered on, though, the enthusiasm for online delivery may have waned; researchers are studying a

phenomenon known as "Zoom fatigue" (Fauville et al., 2021). A desire for in-person events may rebound. At the same time, people may have become accustomed to the convenience of online delivery. In any case, there is likely to be significant demand for both delivery formats in the post-pandemic future.

A strong demand for dual formats could pose challenges for natural resources Extension educators. Clientele are both anxious to get back into the field or classroom and newly accustomed to a continued higher level of online offerings. These higher demands could mean that Extension has to offer more programs during the year than they did before the pandemic, that they must shift to hybrid formats (where in-person events are also live-streamed online), or both. Natural resources Extension programs will need tools and staffing resources to meet the post-pandemic demand for dual-format programs.

DATA LIMITATIONS

We collected demographic data and survey questionnaire responses separately and anonymously, so we cannot tie demographic data to questionnaire responses. Because people who identify as male and people who identify as races other than white were underrepresented in our audience, our results may not adequately reflect the preferences of these groups. Thus, one must exercise caution in extrapolating our study data to the broader population—especially if the desire is to increase audience diversity. If the groups that are underrepresented in our audience have different preferences than those reflected in our study, designing webinars based on our results may fail to attract participants from those groups. Future studies would benefit from including demographic questions in the survey questionnaire.

Another limitation of our data is that we had a 74% non-response rate, which leaves the potential for non-response bias in the data. For instance, if participants who did not like the online delivery format or find it effective are also less likely to respond to an online questionnaire, our results on the acceptance, effectiveness, and demand for online learning may be overstated.

CONCLUSIONS

While Extension education webinars are nothing new, the COVID-19 pandemic spawned a significant proliferation of webinars in Extension programs. Use of the Zoom platform has been particularly prolific since the start of the pandemic. Our study results indicate that demand for more webinar-based content will persist beyond the pandemic; at the same time, however, people are suffering from so-called Zoom fatigue. Understanding participant preferences when it comes to Zoom webinars can help Extension continue to grow and expand their online audiences. As Extension agents

Table 10. Future Preference for Online vs. In-Person Extension Programming Delivery (N=452)

Delivery preference	Number of respondents	Percent of respondents
Prefer online only	114	25.2
Prefer online but would also attend in person	190	42.0
Prefer in-person but would also attend online	107	23.7
Prefer in-person only	0	0.0
No preference	41	9.1

Table 11. Willingness to Attend Another WSU Extension Forestry Program, Either Online or In Person (N=451)

Delivery type	Number of respondents	Percent of respondents
Online only	223	49.4
In-person only	1	0.2
Either online or in-person	226	50.1
Would not attend any	1	0.2

face demands to provide more online content, in addition to returning to in-person content, understanding audience preferences can improve the efficiency of delivering online content that is both enjoyable and impactful.

Our results suggest that: (a) a webinar length of one hour, including a Q&A, is ideal; (b) providing a recording afterward is critical, and (c) the term “webinar” resonates with people more than “online class” when describing these programs. Evening, as well as late morning or early afternoon, are the most desirable times for webinars. Our approach of hosting one webinar at noon and another in the evening seems to work well for capturing the broadest possible audience. While we found a slim preference for receiving only audio from the instructor—and not a video of the instructor speaking—this preference was not large, and including video with gestures could significantly improve learning. Readers should interpret our results with some caution, as there are some potential biases in the data.

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