Best Practices for Engaging Users in a Web Conferencing Environment

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Abstract

This paper reports on best practices for engaging individuals and groups in a web conferencing environment, and translating active learning techniques and exercises to synchronous online learning. The best practices are arranged into: 1) introducing and orienting; 2) informing; 3) active learning and feedback; 4) humanizing the environment; and 5) closing and follow-up. The authors describe the development and delivery of information literacy webinars on impact measurements that attempt to create and maintain an engaging environment using Adobe Connect, rather than relying solely on lectures and discussions. This paper examines additional ways in which web conferencing software is being used to offer library services, such as connecting people with experts, providing spaces for social interactions, virtual office hours, information skills sessions, research assistance, and professional development for librarians.

Introduction

As library resources and clients move to the virtual environment, the goal is to imagine new services as well as make services available that are analogous to what would be encountered in person. Web conferencing is an area that is being explored by librarians to deliver personalized reference, information skills sessions, and continuing professional development. It offers the ability to provide real-time help to people with a number of features that support social interactions and learning, such as live chat, whiteboards, and video conferencing. Interactions may also be recorded for review or self-directed learning.

The literature focuses on best practices for using the various web conferencing software options and describes pilot projects and experiences in the use of web conferencing to provide information literacy skills webinars and other library services. There are also examples from fields outside of library and information studies that offer advice on engaging participants in the virtual environment. One study collected data on the pedagogical practices of nursing instructors delivering synchronous class sessions.[1] They offer strategies for orienting students to the online technology and involving students with practice questions and virtual breakout rooms that are described in the best practices section of this paper. Another example from early childhood education addresses the need for instructional design in the online classroom to be centered on the learner and the improvement of learning outcomes.[2] Many of the suggested practices to increase students' active learning are relevant for libraries and have also been incorporated below.

This paper will report on best practices for engaging individuals and groups in a web conferencing environment, and translating active learning techniques and exercises to synchronous online learning. It will describe the development and delivery of information literacy webinars that attempt to create and maintain an engaging environment using Adobe Connect rather than relying on lectures and discussions, components of webinars transferred over from the traditional classroom. This paper will also examine additional ways in which web

conferencing software can be used to offer library services and professional development opportunities for librarians.

Background

The authors first used the web conferencing software, Adobe Connect, to provide office hours for undergraduate students completing research assignments in large science and engineering courses at McGill University. The online office hours occurred at the same time as the in-person office hours to reach more students, including those less likely to visit the science and engineering library in person.

The authors also investigated the use of Adobe Connect to design webinars. They created a three-part series on impact measurements, which covered how to: (1) identify highly cited journals within a discipline using Journal Citation Reports, and compare journals using Scopus Analytics; (2) search Web of Science, Scopus, and Google Scholar for an author's publications and articles that have cited their work, as well as determine an author's *h*-index; and (3) use Essential Science Indicators to find highly cited papers, researchers, organizations, and journals.

The "Impact measurements demystified" series was offered three times during 2012, with 55 individuals attending at least one part. Webinars were limited to 30 minutes in order to increase attendance from faculty and graduate students, who are known to have busy schedules and other professional development opportunities competing for their time.

Building on advice from the literature, on experience providing information literacy sessions face-to-face, and producing online instruction videos for asynchronous learning, the authors experimented with different ways to keep participants engaged in the web conferencing environment. Webinars contained mini-lectures, followed by hands-on exercises. The mini-lectures were under ten minutes long and were limited to one or two presentation slides with the focus on live demonstrations in a web browser. Instructions and links were provided on a presentation slide for practice time in a particular resource. Feedback was collected from participants and the lessons learned are included in this paper. The authors also turned to colleagues for their best practices on integrating active learning techniques in the web conferencing environment, in order to strengthen the best practices outlined in the results section of this paper.

Methods

Email surveys were used to obtain feedback from students, faculty, and librarians about their experiences using Adobe Connect or other web conferencing software. The authors also searched the published literature and the Internet to identify best practices for engaging participants during web conferencing and to list the ways in which the technology can be used to provide library services.

After the first and the third time that the "Impact measurements demystified" series was offered at McGill Library, an email was sent to each of the participants to collect informal feedback. A total of 31 participants were contacted and 12 responses (39%) were received. Another three

participants provided unsolicited written comments on the series. The email contained the following questions: 1) Do you have any comments about the pace or length of the webinar(s)? 2) Did you have enough time to complete the exercise(s)? 3) Any suggestions for improvement or topics for future webinars?

While the feedback received from webinar participants supplied their perspective on using web conferencing software, the authors also collected the perspective of instructors from other institutions to form a complete picture. To gather the instructor viewpoint, an email survey was sent to relevant division listservs of the Association of College and Research Libraries (ACRL), the American Library Association (ALA), the American Society for Engineering Education (ASEE), the Canadian Library Association (CLA), the Quebec Library Association (ABQLA), and the Special Libraries Association (SLA). Email was also sent to the Off-Campus Library Services Conference listserv and the Academic Librarians Forum listserv. The questions included in the email were: 1) Have you used web conferencing software to offer webinars, office hours, reference assistance, or other services? 2) If you have delivered synchronous (live) webinars for information literacy, have you included any active learning exercises (e.g., polling, hands-on practice exercises, etc.)? 3) What are your best practices/successful techniques for using web conferencing software to offer library services? 4) Have you provided training to library staff on how to use web conferencing software? Twenty-eight responses were received from individuals working in academic, corporate, government, and public libraries.

Additionally, the authors searched ERIC, Library and Information Science Abstracts (LISA), Library, Information Science & Technology Abstracts (LISTA), Scopus, and Web of Science for published literature on web conferencing. A Google search was also conducted to identify more examples of its use for library services.

Results

Feedback was received from students, faculty, librarians, and administrative support staff members who attended the "Impact measurements demystified" webinar series. These individuals appreciated the 30-minute length of each webinar and the vast majority (14 out of 15) thought the webinars were well paced. All felt that they had enough time to complete the hands-on practice exercises, which ranged between three and five minutes. However, two respondents would have liked some more time to run different database searches and two respondents commented that some of the exercises could have been broken up into smaller parts and interspersed within the lecture to increase their retention of the content presented. Other suggestions for improvements included using arrows to point to what was being discussed on the screen and speaking during the exercises to let participants know that the librarians were still there. Some participants found the silence during the exercises a bit disconcerting. Technical problems were also reported, e.g., the audio breaking up for a few seconds and having to disable the firewall on Windows 7 computers to be able to access Adobe Connect. A few respondents submitted topics for future webinars, which were: Web of Science vs. Scopus, discussing how to cite and what to cite, and providing an overview of open access resources that students can use after graduation. Lastly, two participants commented favorably on the webinar recordings. They appreciated being able to view the recordings later on to refresh their memories.

Responses to an email survey sent to various library listservs were received from academic, corporate, government, and public library staff. Web conferencing software was mostly used in these libraries to provide instruction, orientation to library resources, and reference assistance. While 11 out of the 28 respondents (39%) reported that they included active learning exercises during their webinars, 10 (36%) admitted that they did not. Polling, breakout rooms, chat, hand raising, and emoticons were the features of web conferencing software being used for these activities. Their best practices and successful techniques for using web conferencing software to offer library services are incorporated in the best practices section of this paper. Finally, only 5 individuals (18%) stated that library staff taught their colleagues how to use web conferencing software.

Uses of web conferencing software to offer library services

The listserv responses, literature review, and Internet search revealed various uses of web conferencing software to offer library services, such as providing instruction, reference assistance and office hours, research consultations, cultural and educational programming, social learning opportunities, and continuing education for library staff.

- Instruction – Teaching information literacy skills is the most frequently reported use of webinar technology in libraries (for examples, see [3-8]). Presenting an overview of electronic resources in a subject area, database searching, and using citation management software are examples of webinar content that were given by librarians.

- Reference assistance and office hours – Librarians have used Adobe Connect or other web conferencing software to answer questions from users who are working online or located at a distance from their organization. There are published case studies of academic librarians who offered reference assistance from their homes in the evenings, at specific times, to accommodate the schedules of their user groups.[5, 9, 10] Some of these librarians delivered presentations on specific topics during the webinar sessions, in addition to answering questions.[9, 10] Furthermore, the authors of this paper have also provided online office hours to support large undergraduate classes in the sciences and engineering. Using Adobe Connect to provide office hours during peak course assignment times opened up the possibility of helping students that would not normally visit the library in person.

- Research consultations – Web conferencing software has been employed by librarians to schedule individual consultations. Users may be on site, or may also be in another country and/or time zone.[11-13] These sessions are similar to meeting a librarian in person and seek to address any information concerns that are presented by the individual. A group of librarians from one American academic library showed doctoral students in Taiwan how to perform literature searches on their research topics to help them to complete a course assignment.[12] Each librarian received the student's topic ahead of time to prepare for the virtual meeting. The meeting was recorded and, as a follow-up, a link to the recording was emailed to the student.

- Cultural and educational programming – Libraries have used webinars to connect their communities to experts and broadcast cultural events to other libraries. For example, the Klintaine Public Library in Latvia links rural farmers to agricultural experts by offering live webinar presentations to about 20 rural villages.[14] Each webinar is taught by an expert on the topic. Some of the topics that have been covered so far by the webinar series are farm accounting, agricultural and environmental sustainability, and forestry issues. Farmers watch these webinars at their local libraries or from their homes, and are able to interact with the presenters and each other.

- Social learning opportunities – Similar to the comfortable social learning atmosphere of book clubs, the web conferencing environment can provide an opportunity for participants to learn while socializing with each other. An academic librarian provided a meeting room in Adobe Connect, where computer science students were encouraged to contribute to the topic of discussion and interact with each other.[15] The session would start with the librarian, or a student, presenting an overview of a topic in computer science, which was then followed by an unstructured open discussion amongst the students. The librarian served as a moderator for the session.

- Continuing education for library staff – Libraries and library associations have employed webinar technology to train library staff and keep them informed of changing technologies and trends in library services. For example, the Texas State Library and Archives Commission offers free webinars on a weekly or monthly basis to any person working in the field of library science.[16] Webinars are recorded and posted on the Commission's website.

Best practices

The best practices incorporate lessons learned and listserv responses in addition to literature references, and are arranged into: 1) introducing and orienting; 2) informing; 3) active learning and feedback; 4) humanizing the environment; and 5) closing and follow-up. Since the focus is on engagement in the web conferencing environment, general tips for using the software have not been included here, such as emphasizing rehearsal, preferably with colleagues willing to provide feedback. Technical tips that bear repeating are to arrive early to the virtual classroom to test that the environment is behaving as expected, and to have a partner to offer technical help to participants as required. Participants may be asked to test the system on their end beforehand via email or asked to log-in ahead of time.

1. Introducing and orienting

Since participants may be new to web conferencing or to the chosen software, before introducing the session it is necessary to provide an introduction and orientation to the environment.

1a. Introducing the environment

- The environment can be introduced before the start of a session by inviting participants to visit a website with an overview of the software[17] or by sending a video demonstration[8] or supporting materials[18] by email.

- The initial welcome can be accomplished with audio alone or with the use of a webcam. Librarians can orient participants by describing each of the areas, or pods, that make up the web conferencing interface. It is advisable to keep the design and arrangement of pods simple so that the software does not get in the way of learning.[2] Indicate how participants can provide feedback if they are not satisfied with the pace or have questions or comments,[19] and how they can have private conversations with the librarians or with fellow participants. Let them know that the slides and recording will be sent later for self-directed learning so that they can focus on the content and participate in activities.

- Icebreakers are an easy way to allow everyone to interact with the environment. A common icebreaker is to ask participants if they can hear the presenter and have them type their response into the chat box. Participants can also be asked to introduce themselves or practice raising their hand or using emoticons that are available to them. An interesting activity for an icebreaker is described by Tagge, which asked librarians receiving training to use the drawing tools to mark their location on a map.[20]

1b. Introducing the session

- The session can also be introduced beforehand by including an outline of what will be covered in an email to participants.[12] In addition to the learning objectives established for the session, providing an agenda can help to set up expectations for those that are not familiar with the delivery method. The objectives and agenda should be provided in writing, as well as described verbally.[11]

- It is important to mention how the information that will be presented is relevant to participants to keep their attention in the environment, and also to show enthusiasm for the technology.[15, 21, 22] Smile and avoid speaking in a monotone.[20, 22]

- A background knowledge probe can be used to learn more about the audience and assess their comfort level with the content and their previous knowledge. This can be done using open discussion questions via the chat option or enabling participants' microphones, or it can be done by using the polling option.[6, 23] An example of a poll with multiple-choice answers is asking how they feel finding journal articles using the library.[8] Information on what participants would like to be included can be collected by email as well.[22]

2. Informing

- While the focus is on the content to be covered, participants are also being exposed to online learning techniques. With this in mind, it may not be possible to cover as much

content or to teach for the same length of time as a traditional face-to-face session.[20] Teaching and learning in the web conferencing environment can be fatiguing for all those involved so breaking down the content into more frequent, shorter sessions is recommended.[24] Multiple presenters can also alleviate fatigue and a change in presenter may bring participants' attention back to the environment.

- Depending on the system, there may be the option to push handouts and other materials to participants. They can also be uploaded onto a network or offered on web guides. In either case, clear instructions must be given on how to access materials.

- The recording of sessions can begin at the informing stage. There are advantages and disadvantages to maximizing the screen while displaying the content. For instance, the chat box will no longer be visible to the presenter. However, it will also mean that the names of registrants will not be seen in the resulting video. It can be a challenge to devote attention to both presenting and scanning for questions or comments, so it is advisable to have a second person, whenever possible, to monitor and respond to chats. Otherwise, there may be a need to develop strategies for multitasking,[25] such as taking frequent breaks for question and answer periods.

- Presentation slides are often used for informing in the web conferencing environment. Slides should be loaded ahead of time and can include screenshots for those who are accustomed to having a backup in case of technology glitches. Give verbal cues to bring attention to elements on slides being discussed.[22] At the same time, make use of drawing tools or turn on the option for participants to view the curser.

- Live demonstrations involve sharing the computer desktop or a particular application. Open applications beforehand and prepare browsers at websites of interest to prevent dead time. Just as with face-to-face sessions, you can present case studies or prompt students for topic suggestions if illustrating search tools. It can be distracting for participants to move back and forth from applications to the web conferencing software so it may require more planning in advance. Try to slow down when demonstrating, since there may be a delay between what the instructor shows and what participants see on their screens.

- There may be other options for informing, such as playing videos, or writing on whiteboards, but regardless of the methods chosen, be sure to describe all actions and what participants can expect to see on their end, such as, "your screen will go grey for a second while I share my browser with you." In general, participants' microphones are muted during periods of informing to achieve the best audio signal.

3. Active learning and feedback

- Keep participants active by making full use of the technology and offering various means of interaction between instructors and participants. Alternate activities with periods of informing. Instructions, descriptions, or links to resources for activities can remain on a

slide in the web conferencing environment. Set strict time limitations and bring everyone's attention back to the environment after exercises, otherwise participants will multi-task.[5]

- Use questioning as an active learning technique to involve everyone via audio, chat, or with the use of a whiteboard. Be patient and wait for responses.[2, 25] Decide how to manage discussions beforehand, with participants raising their hands or waiting for their turn to type or speak.[26] Take time to reflect on comments and ask participants to elaborate. If you feel relaxed enough, you can prompt specific individuals by name to contribute to a discussion but it has to be done sensitively since there are no visual cues to indicate whether or not someone is comfortable responding.[25] The whiteboard can be a tool for engaging participants in the design of a concept map, brainstorming ideas, and producing a list of key terms.

- Offer time for participants to practice the skills covered. Examples include database searching and setting up personal accounts in a system. It is easy for participants to lose track of time practicing, but instructors can get everyone's attention periodically with an update on the amount of time remaining.

- Group work and peer-learning opportunities are possible in the web conferencing environment, although it may be easier to assign participants to a group beforehand.[1] Breakout rooms can be used to allow for problem solving or discussion on a topic.[27] The whiteboard can also be divided to provide space for the groups. After a session, the virtual space can be offered to the groups for additional time to communicate with each other and work on a project or assignment.[1]

- Assessing the level of engagement of participants in the web conferencing environment is challenging, particularly without the ability to observe body language or facial expressions. To successfully integrate assessment, using questioning, polling, or quizzes, it takes planning, practice, creativity, and a propensity for risk taking.[24, 26, 27] Stop periodically to check in with participants, request direct feedback, and probe for deeper learning.[1]

4. Humanizing the environment

- Run tests to determine whether using a headset improves the quality of the audio. Audio feedback can take away from the experience.[18]

- Chatting privately with participants can personalize the experience. Facilitators may be able to move individuals into breakout rooms for troubleshooting technical problems.[1]

- According to Molay, the presenters should be ordered based on their experience with and comfort level in the environment.[22] The presenter who closes the session may have to accommodate for lost time or spend additional time wrapping up and dealing with

questions.

- Hearing other voices may help to humanize the environment, such as allowing participants or facilitators to join in by turning on their microphones.[28]

- When instructors are silent for extended periods before the start of sessions or while practice exercises are going on, participants may experience a sense of isolation or question whether or not they have been disconnected. Playing music during these times may help to avoid prolonged silences and feelings of solitude.

- The video webcam may be enabled while introducing and closing the session and during question and answer periods but abandoned while informing and during exercises to avoid distraction. Participants may not otherwise have a chance to interact with librarians in person and see a friendly face.

- Feedback icons, such as the thumbs up and applause options, allow fellow instructors and participants to show emotion and be spontaneous.

- Referring to participants by name and addressing them often is a common best practice in the literature for humanizing the environment. You can speak to participants as individuals, using "you".[22]

5. Closing and follow-up

- Summarizing the content and activities at closing can also include revisiting the outcomes presented while introducing the session. It is easy to lose participants at the end of a session when offering time for reflection without giving clear instructions. The whiteboard can be used to allow participants to think about what they learned and write down how they will apply the knowledge.

- It is difficult to determine how the learning experience was for participants without asking directly. Ask them to complete a short survey to get feedback.

- Use the final slides to give contact information and preview any sessions in the pipeline.[2]

- Stay on afterwards to answer questions. There may be individuals who were too shy or unwilling to ask questions previously. If a sole participant remains in the web conferencing environment after everyone has said their goodbyes, address them by name and ask if they are still there and if you can help further before disconnecting.

- Edit the recording to remove personal names if possible. Participants may be asked to log-in only with their first names to avoid having full names in the recording.[8] The recording should also be edited to remove dead time when participants were working on individual activities.

- Send a link of the recording to participants, as well as those who had registered, but were unable to attend, since they showed interest in the material covered.[22] Decide in advance how long you will make the recording available. The tools used in the recording may change frequently or the session may have been tied to a particular class. Give the date after which the recording will no longer be available, but also provide any presentation slides separately.

- Use email to obtain more in-depth feedback and provide links where more information may be obtained. Solicit ideas for future offerings in the web conferencing environment, if appropriate.

Professional development of library staff

The best practices described in the previous section for engaging participants during webinars can be valuable for novice and expert instructors. Teaching information literacy skills with webinar technology requires that the instructor know how to use the software, as well as be familiar with the pedagogical principles involved when teaching and learning in a virtual environment.[29] Only eight out of the 28 responses (29%) of the email survey sent to the library association listservs indicated that their IT department or library provided training to library staff on how to use web conferencing software. Two respondents described webinar software as being "very easy" to use and stated that no or minimal training is needed.

The literature provides recommendations for successfully training the trainer, such as conveying effective strategies for teaching as well as learning in a live online setting. The trainers' future students will need to learn both the course content and how to participate in this unique environment.[20, 26] While the software may be simple to use for some, effective online teaching requires preparation. It is important to provide safe opportunities to practice as both a presenter and a participant in order to build confidence and expertise in using the software.[7, 26, 30] In one example, trainees are asked to record an introduction to a webinar and send the recording link to the instructors as a follow-up to the session.[30] Librarians have also discussed rehearsing instructional sessions in front of colleagues to obtain constructive feedback.[7, 8, 19] Lastly, encouraging enthusiasm and risk taking is recommended as "online learning is most successful when individuals are enthusiastic about teaching and learning in this medium and willing to take risks to learn to communicate effectively employing the available technology."[21]

The authors encouraged librarian colleagues to attend the "Impact measurements demystified" webinar series as a first step in the train-the-trainer process, which incorporated some of the recommendations in the literature. The authors aimed to take some of the fear of the technology away and develop enthusiasm for the medium by inviting them to participate in an information literacy webinar where the authors communicated excitement in teaching the course content online. In this real-life experience, the instructors' behavior was not altered for a librarian-only audience and, consequently, the librarians behaved like the other members of the class during the practice exercises and question period. Their interactions with the instructors via the chat box were no different than those of the rest of the class. The librarians were able to reflect on their experience of online learning and how to use it to inform the design of their own training

sessions. While colleagues joined the webinars as learners, their feedback was invaluable to the authors who themselves were experimenting with web conferencing software. The authors were able to apply colleagues' feedback to improve webinars and know-how was transferred in both directions, with no additional costs to the organization. Additionally, the authors started supporting colleagues in the use of Adobe Connect to design and deliver information literacy instruction, since the training offered by the university's IT department focuses on the technical aspects of using the software.

In order to encourage widespread adoption of webinar technology among employees, Murphrey and Coppernoll[31] suggest:

- inviting colleagues to various live webinar events and organizing training sessions after these events to demonstrate the software and explain how it can support their work activities, similar to the experience that the authors describe above;

- providing individual coaching sessions using traditional technology, such as the telephone, to decrease the level of intimidation;

- offering to help with rehearsals and/or to co-teach with instructors during their first synchronous online training sessions; and

- supporting the adoption of the software by key individuals in the organization, such as managers, new employees, and tech-savvy staff members, who can then encourage others to use the technology.

Discussion and conclusions

Libraries are adopting web conferencing in creative ways, such as connecting people with experts and setting up spaces for social interactions, in addition to providing virtual office hours, information skills sessions, research assistance, and professional development. While library staff attend webinars for their continuing education, it is unclear whether they are encouraged to exploit web conferencing software to deliver services, engage participants, and incorporate active learning techniques. The authors found that supporting colleagues can be accomplished in small or simple steps, by reaching out to those interested and inviting them to participate in information sessions as learners, giving face-to-face training, and being available for questions and coaching.

The best practices in this paper are not exhaustive but they pool together advice dispersed throughout the library and adjacent literatures on engaging people in a web conferencing environment and include feedback solicited from colleagues. The authors were surprised by negative responses to the question posed on listservs about the inclusion of active learning techniques. One of the themes throughout the best practices is the need to take advantage of the different options that are available in a given software and take risks. Trying out features in a safe environment before going live can overcome the fear of encountering technical difficulties. Some may feel that there is not enough time to dedicate to active learning during a webinar, as

expressed by one listserv respondent, but the authors learned from participant feedback that a few minutes practice time was sufficient and beneficial to learning. Participants also expressed that when they are no longer connected to an instructor, such as during extended silences for practice, they experience a sense of isolation. The best practices outlined in this paper include tips that can be easily implemented to establish and maintain a human connection.

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