Multimedia, Social Presence, and Message Design Preferences in Online Classes: “If You Were an Online Student, Which of These Videos Would You Prefer?”

Miguel Ramlatchan, Ph.D.
Office of Distance Learning
Old Dominion University
Gornto Hall, room 304
Norfolk, VA 23529
mramlatc@odu.edu

Abstract

There are many ways instructors and instructional designers can design and develop multimedia for online courses. This research looked to define evidence-based best practices for the design of multimedia content that also enhanced social presence in distance learning and online environments. The study asked 596 participants to consider the perspective of online students and select one of five videos that they would prefer viewing during their online course. These participants included a diverse sample of students, faculty, administrators, researchers, and instructional design and support staff. The findings indicate that 91.7% of participants preferred the two variations that included video of the instructor and the instructor’s presentation slides at the same time. Among the reasons why, participants responded, “this is more like an actual classroom experience” and “I like being able to see the instructor.” These results also indicate the importance for instructors and instructional designers to consider the pre-production and post-production implications and resources required to develop content in these formats.

Introduction and Background

Instructors and instructional designers have many tools at their disposal to develop multimedia content for their online classes. This research study sought to better understand how specific combinations of video and content could help foster social presence. Social presence is the ability to use technology to create and foster interpersonal relationships in learning environments between instructors and students (Short, Williams, & Christie, 1976). Social presence in instructional message design can be used to enhance motivation, which can lead to learning effectiveness and student retention (Fleming & Levie, 1993; Ramlatchan, 2019). Multimedia is the inclusion of several means to communicate information integrated thoughtfully in the same presentation to create or enhance the learning experience (Clark & Mayer, 2016). This study combined applications of video, multimedia learning and design, and their potential impact on social presence to help inform best practices in instructional message design. The design of the modules used in this study presented multimedia to viewers using several combinations of recorded video and presentation slides with text and graphics. The goal was to determine which design combinations resonated best with students, especially in terms of enhanced social presence. This study’s specific research question sought to explore which design was preferred by students, faculty, and instructional design and support staff and why?

Research Design

This study asked viewers to compare five variations of a multimedia presentation and to select which design they preferred. Each of the five designs are currently used in the host university’s distance learning courses, online programs, and are representative of existing course content. An experienced presenter was recorded in one of
Participants viewing the “instructor-only” option were only able to see the instructor, while volume was turned down during the data collection, participants were asked to assume that the narration was the same for all five options.

Participants viewing the “slides-only” option were only able to see the instructor’s PowerPoint slides, they would not see the instructor.

Participants viewing the “video-switching” option saw the video alternate between a view of the instructor and a view of the PowerPoint slides (the slides were viewable long enough for participants to read each slide).

Participants viewing the “dual-windows” option could see the instructor in a window in the upper left and see the PowerPoint slides in a larger window on the right.

Participants viewing the “layered-video” option could see the instructor as a layer of video in the foreground and they could see the PowerPoint slides as a second layer of video behind the instructor.

Figure 1. Each participant was able to compare each multimedia design and select their preference (modified from Ramlatchan & Watson, 2019)
the university’s audio and video production studios. The instructor presented a 20-minute module on social media and social networking intended for an online “communications” or an “introduction to technology” course. Thus, the instructor, instructor video, and the content presented in the PowerPoint slides were kept consistent throughout the study.

Data was collected at Old Dominion University’s 2018 Faculty Summer Conference, from online and virtual classroom students also at Old Dominion University, from the University Reception at the 2018 AECT (Association for Educational Communications and Technology) conference, and during the 2018 SACSA (Southern Association for College Student Affairs) conference. The result was a diverse sample of 596 participants that included students, faculty, administrative staff, and instructional design and support staff across a wide range of ages, academic experience, and subject matter areas. The five multimedia designs presented to participants included an instructor-only, a slides-only, a video-switching, a dual-windows, and a layered-video variation (see Figure 1). These five multimedia designs are currently in use in some form at the host university in online classes and programs and represent examples of what online students enrolled in those programs would see. The instructor-only version only showed video of the instructor’s camera. The slides-only version only showed the instructor’s PowerPoint slides. The video-switching version showed the instructor’s PowerPoint slides long enough for a student to read a slide, then the video switched back to show the instructor until the next slide. The dual-windows version showed the instructor video as a smaller window on the screen and showed the instructor’s PowerPoint slides as a larger window. The layered-video version used a black background with the slides as a second layer of video over the background and the instructor as a third layer of video over both the background and slide layer.

All five designs were played as 20-minute videos on a continuous loop on five identical laptops (see Figure 2). The five laptops were numbered and setup side-by-side on a 6-foot table with a ballot box paired with each laptop, this arrangement allowed participants to simultaneously view and compare all five designs. When potential research participants approached the table they were given a pen, a clipboard, a 3-inch x 5-inch card to write why they made their selection, and asked “if you were an online student which of these videos would you prefer?” The

Figure 2. Each of the five options were played on a loop on five identical laptops, participants wrote their reasoning for selecting their preference on a 3x5-inch card and dropped the card in the appropriate ballot box (the “video-switching” option was played on the center laptop in this example, and was showing the slides when this picture was taken, it would periodically alternate between showing the slides and video of the instructor during data collection).
contributing students, faculty, administrators, and staff indicated the design they preferred, wrote a short reason why they made that selection, and dropped their card into the appropriate ballot box. Participants received either a t-shirt or a plush mascot keychain for their feedback. The data collection process took approximately 30 to 60 seconds to complete.

**Results and Discussion**

The results of this experiment were surprisingly consistent, especially given the four diverse samples used in data collection. The 2018 Faculty Summer Conference group consisted of students but was mostly a group of instructional design staff, administrators, and faculty at the host university (n = 158). Of this group, 79.1% preferred the layered-video, 14.6% preferred the dual-windows, 5% preferred the video switching, 1.3% preferred the slides-only, and 0% preferred the instructor-only.

The virtual classroom and online student group consisted of approximately 85% students and 15% faculty and staff enrolled in, or teaching, or supporting classes at the host university (n = 176). Of this group, 60.2% preferred the layered-video, 31.3% preferred the dual-windows, 5.1% preferred the video switching, 2.3% preferred the slides-only, and 1.1% preferred the instructor-only.

The 2018 AECT conference group was a very diverse range of students, instructional designers, administrators, teaching faculty, and researchers from a wide range of private, public, large, small, regional, national, international, online, and traditional on-campus colleges and universities (n = 138). Of this group, 70.3% preferred the layered-video, 18.1% preferred the dual-windows, 6.5% preferred the video switching, 2.9% preferred the slides-only, and 2.2% preferred the instructor-only.

The 2018 SACSA conference group also represented a diverse number of students, faculty, and staff in a wide range of student support disciplines from a number of colleges and universities in the southeast region of the United States (n = 124). Of this group, 75% preferred the layered-video, 18.5% preferred the dual-windows, 5.6% preferred the video switching, 0.8% preferred the slides-only, and 0% preferred the instructor-only.

In total, there were 596 participants, 70.6% preferred the layered-video, 21.1% preferred the dual-windows, 5.5% preferred the video switching, 1.8% preferred the slides-only, and 0.8% preferred the instructor-only (see Table 1 and Figure 3). Based on observations during data collection it is estimated that 50% of the total participants were active students, while the other half were faculty, staff, and administrators. However, the perspective of faculty, staff, and administrators are important to consider as not only were these participants likely former college students at one time, they also fall into the adult learning demographic for prospective future graduate students. Additionally, the researcher has found no significance difference when comparing pilot data collected from confirmed students and pilot data collected from faculty, staff, and administrators in terms of similar social presence and multimedia studies (Ramlatchan & Whitehurst, 2019).

*Table 1.* The number and percentage of participants who selected each option

<table>
<thead>
<tr>
<th>Multimedia Design Option</th>
<th># of participants who selected that option</th>
<th>% of participants who selected that option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor Only</td>
<td>5</td>
<td>0.8%</td>
</tr>
<tr>
<td>Slides Only</td>
<td>11</td>
<td>1.8%</td>
</tr>
<tr>
<td>Video Switching</td>
<td>33</td>
<td>5.5%</td>
</tr>
<tr>
<td>Dual Windows</td>
<td>126</td>
<td>21.1%</td>
</tr>
<tr>
<td>Layered Video</td>
<td>421</td>
<td>70.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>596</strong></td>
<td><strong>213</strong></td>
</tr>
</tbody>
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The layered-video option was the most preferred multimedia design, followed by the dual-windows variations (for a combined 91.7%), this result would appear to indicate the overall preference for the ability to see both the instructor and the instructor’s slides during online courses that include video.

The preference for seeing both the instructor and the instructor’s slides is consistent with other social presence research that found similar results (Ramlatchan & Watson, 2019). Qualitative feedback for these two options often included a variation of “this is more like an actual classroom experience” and “I like being able to see the instructor.” Both the quantitative data and the qualitative feedback on their 3x5 cards indicated the importance of social presence or the ability to see an authentic instructor.

The most preferred options (the overall preference for layered-video and the dual-windows options for a combined 91.7%) were also the most resource intensive to produce. Interestingly, the options that likely require the least amount of time and effort to produce, were also the options least preferred by participants. The slides-only version is a very common online presentation technique as there are many programs that can add instructor audio voiceover to screenshots, screen grabs, or other means of slide capture. The ‘talking head’ of the instructor-only version is also very ubiquitous, easy to create, and was also among the least preferred by participants in this study. The dual-windows option is created by a telepresence recording platform from Cisco Systems that while automating the recording of web conferencing classes, also requires a significant infrastructure investment. The layered-video variation was by far the most preferred, but also requires the most overall time and effort to produce. A post-production time and effort investment must be made as a video editor or producer has to create this presentation by making a new video that is a composite of the virtual background, the slides, and the audio and video recording of the instructor. However, the result of this production effort is a presentation format that retains as much as possible the social presence aspects of the face-to-face classroom environment for online students.

**Figure 3.** The layered-video option was the most preferred multimedia design, followed by the dual-windows variations (for a combined 91.7%), this result would appear to indicate the overall preference for the ability to see both the instructor and the instructor’s slides during online courses that include video.
Conclusion

The purpose of this study was to better understand the impact of multimedia message design on social presence based on the preferences of a large diverse sample of students, faculty, and staff among several colleges and universities. Participants viewing the five options were simply asked “if you were an online student which of these videos would you prefer?” The results indicate that participants consistently selected the multimedia designs that allowed them to see both the video of the instructor and the PowerPoint slides for the full duration of the presentation. This consistency was present when traditional students (approximately 50% of the total 596 participants) provided feedback, as well as when instructional design staff, instructors, and administrators (who also fall within the host university’s adult learner demographic) provided feedback. The layered-video version was by far the most popular for several reasons which include the design’s approximation of the face-to-face classroom experience and the maximization of social presence. These results can also likely be generalized and applied to a diverse set of learning environments, across many fields of study, at many colleges and universities. Online students prefer multimedia designs that enhance social presence, such as multimedia designs that allow them to see both their instructor and their instructors’ presentation at the same time. This instructional message design best practice can be used to enhance motivation, retention, and overall learning effectiveness in online courses and programs.

References