A COMPARISON STUDY ON THE UTILIZATION OF INSTRUCTIONAL VIDEOS IN A HEALTH PROFESSIONS ONLINE GRADUATE PROGRAM

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ABSTRACT

The purpose of this research was to review how the Boyer Model of teaching impacts video instruction and course satisfaction in the online learning format. Instructional videos were implemented in the first two courses of an online graduate public health program. Four courses received the intervention, and three courses served as the control. Results from the student’s end of course surveys showed no statistically significant difference between the intervention and control groups. However, the students did mention positive comments about the videos in the feedback section of their end of course surveys. Future research should investigate confounding variables such as GPA, work commitments, and family life and how they may impact student learning through enhancing the online course with video instruction.

Keywords: graduate program, distance education, online learning, technology, end of course surveys, public health, video intervention, higher learning, sotl, Boyer model, video instruction

INTRODUCTION

There are multiple modalities a student can choose from for their higher learning, including fully online, blended courses, or the traditional face-to-face class. Students should not expect that one modality would be more rigorous than another; all modalities should offer the same level of education experience and integrity.

Distance learning allows students to take courses online from their homes. Students who chose distance learning may experience barriers to learning at any point in their program. Dell et al. (2015) addressed these barriers as different student learning styles, accessibility issues, and challenges adapting to different formats. Distance learning is distinct from online learning, but students often use the terms interchangeably. Distance learning provides online learning access to course materials and is the modality of submitting their work. According to Park and Shea (2020) online learning is “a form of distance education where technology mediates the learning process, teaching is delivered completely using the Internet” (p. 226).

Online public health programs allow more students to become professionals in the field, as the classroom can be accessed from anywhere in the world. Online classes typically consist of assignments, discussion boards, weekly participation, and course materials that involve extensive reading. In this format, students control their learning, and the instructor offers support as needed. There are asynchronous and synchronous online learning platforms. Asynchronous learning is at the student’s pace and does not require real time interaction, while synchronous learning happens in real time between instructor and students.

Web 2.0 tools can enhance online student learning and help improve the connection between students and their instructors. Web 2.0 tools are designated methods that are utilized to complement teaching, such as videos. There are a variety of Web 2.0 tools, which include videos, online lectures, and
presentations that offer an instructional foundation to the student (Reese, 2018). Web 2.0 tools work well with both asynchronous and synchronous learning platforms. Reese (2018) described how Web 2.0 tools provide an opportunity for promoting communication in the online classroom.

LITERATURE REVIEW

Online learning platforms facilitate the inclusion of technology (Kearns, 2016). Hew & Lo (2018) have shown that video usage in the online classroom is effective and preferred among students in the health professions. Instructors can further communicate with students and help them meet course objectives by using tools such as videos.

The use of additional teaching methods in the online environment can provide the enhanced stimulation students desire (Davis et al., 2018). While some students may be new to the learning environment, the use of videos can increase their motivation to learn and take in information (Altemueller & Lindquist, 2017). Tools like videos that are embedded in the online platform engage students and instructors alike. These videos may enhance an individual’s online experience (Wang & Antomenko, 2017). The learning experience of the student is bound up with the benefits the student gains from these enhancements. Additionally, using video increases an instructor’s presence in their online classroom learning and the perceived satisfaction of the students (Toven-Lindsey et al., 2015). Further, Toven-Lindsey et al., demonstrated that the use of videos is a practical teaching approach comparable to traditional teaching methods (2015).

Student satisfaction is also linked to the student’s success in a course, especially in health professions programs (Hew & Lo, 2018). With the inclusion of videos, students can refer to the material as needed, and they can react emotionally in a similar fashion to a traditional, in-person setting. Holbeck and Hartman (2018) discussed the need to bridge the disconnection a student may feel in an online learning environment. The disconnection can be overcome by using videos, which mimic the in-person, traditional classroom.

PURPOSE OF STUDY

This study examined online instructional videos but did not review PowerPoints with voice over, YouTube videos, or TED talks. Instead, we created prerecorded instructor lead specific videos for this study utilizing Loom, a communication tool for using videos (Holbeck & Hartman, 2018) call. Loom (https://www.loom.com/) is a Web 2.0 tool for recording a virtual lesson using the computer screen and a camera. Loom also allows the instructor to annotate their screen with the use of a drawing tool. The instructor can choose whatever recording type they want to use.

Instructors who engage with the scholarship of teaching and learning (SoTL) are always working on their pedagogical skills (Kern et al., 2015). Boyer (1990) discussed four approaches to teaching: teaching and learning, discovery, application, and integration. All four elements of the Boyer Model can be grouped under SoTL. The Boyer Model involves using methods for best practices to help develop skills and disseminate knowledge, which includes the use of videos for instruction. Practicing these applicable forms of engagement and communication supports teaching and learning for both the student and instructor.

Therefore, the purpose of this research was to review how the use of the Boyer Model, as it relates to the scholarship of teaching, specifically in the online format of video instruction, affects student’s overall engagement and satisfaction with the course. The Boyer Model is important for this research because instructors align their teaching to higher education learning models to enhance student comprehension. A student’s motivation also impacts their learning experience and may shape their classroom performance (Milligan & Littlejohn, 2016), which is why it is imperative to analyze the implementation of these video recordings.

METHODS

Course Context

The mixed methods study took place in the first two courses of an online graduate public health program, with the first course being four weeks long and the second course being eight weeks. The first course introduces students to the field of study, while the second course focuses on public health theoretical frameworks and applications. Four sections of the first course and four sections of the second course were included in the study. Two sections of each course received the intervention, and
two sections of each course served as the control. In the intervention courses, instructional videos were posted weekly in the discussion forum. The faculty used Loom to create video tutorials to accompany the assignments. The students in the control courses received written assignment instructions.

**Instrumentations and Tools**
Faculty created videos that ranged in length from 1 to 6 minutes. All the videos and accompanying written instructions were posted on the first day of the new topic. The same videos were used for each course. Figure 1 highlights the video implementation and video length. Students in the control courses received additional written assignment instructions. The study was terminated early because, based on preliminary data, we felt that videos should be included in all sections of the course. Therefore, only one control course was included for the second course in the program.

Participants
The study participants were those students who enrolled in one of the seven selected courses. The results were solely based on those students in these courses who completed the end of course survey (EOCS).

**Data Collection Procedures**
The university’s EOCS was used for the analysis. While the EOCS is comprised of seven questions only three of the questions were applicable to this study. The questions were:

1. My instructor was engaged in classroom discussion in a helpful and meaningful way.
2. My instructor effectively related her/his expertise in the subject matter area.
3. I would recommend this instructor.
4. The assignment directions were clear.
5. The assignments were relevant to my field of study.
6. The textbooks and additional course materials assisted in my comprehension and learning of the subject matter.
7. My instructor provided useful feedback.

The questions used for this analysis were 1–3. The rest of the questions were not applicable to the study. In addition, question 6 refers to the course materials standard to each course and not the course materials added from the instructor. Lastly, the three questions selected represent what Boyer (1990) depicts as freedom of discovery for each instructor.

For each question, the students stated their level of agreement, with options being on a Likert Scale of Strongly Disagree (1), Disagree (2), Agree nor Disagree (3), Agree (4), and Strongly Agree (5). In addition, the students’ open-ended comments were reviewed since the EOCS include an opportunity for each student to leave general comments. Faculty received end of course survey results through the university.

**Data Analysis**
We conducted t-tests to determine if there was a difference in mean response score between those who received instructional videos and those who did not. A t-test was conducted for each course separately and the two courses combined. SPSS version 25 was used for the analysis and P < 0.05 was considered statistically significant. We also conducted a thematic analysis on the students’ qualitative comments from the end of course surveys.

**RESULTS**

**Response Count**
Table 1 provides an overview of the number of students who responded to each EOCS question, for each course, based on group (intervention or control). Overall, 42 intervention and 45 control group students responded to “My instructor was engaged in the classroom in a helpful and meaningful way.” Further, 41 and 44 students responded to
“My instructor effectively related her/his expertise in the subject matter area, in the intervention and control group.” Finally, 42 intervention and 44 control group students responded to “I would recommend this instructor.”

Table 1. Student Count by Course, Group, and EOCS Question

<table>
<thead>
<tr>
<th></th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Course</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My instructor was engaged in the classroom discussion in a helpful and meaningful way.</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>My instructor effectively related her/his expertise in the subject matter area.</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>I would recommend this instructor.</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td><strong>Second Course</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My instructor was engaged in the classroom discussion in a helpful and meaningful way.</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>My instructor effectively related her/his expertise in the subject matter area.</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td>I would recommend this instructor.</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td><strong>First and Second Courses Combined</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My instructor was engaged in the classroom discussion in a helpful and meaningful way.</td>
<td>42</td>
<td>45</td>
</tr>
<tr>
<td>My instructor effectively related her/his expertise in the subject matter area.</td>
<td>41</td>
<td>44</td>
</tr>
<tr>
<td>I would recommend this instructor.</td>
<td>42</td>
<td>44</td>
</tr>
</tbody>
</table>

**Quantitative Comparison of EOCS**

The results of independent sample t-tests showed no significant difference in EOCS response for the intervention and control groups. T-tests were conducted for each course individually and for both courses combined (see Tables 2–4).

**Qualitative EOCS Feedback**

In the first course of the program, students in both the control and intervention courses commented on the instructors’ feedback, expectations, engagement, knowledge of the field, and guidance. Three out of the eight students mentioned the word “video” in the video intervention courses in their comment. Some of the students stated, “I like the way in which she interacted with the class by posting videos and feedback regarding instructions and providing information to help the class look more into their career filed.” “She posted videos which gave further clarification,” and “Her videos regarding the assignments were really helpful as the instructions were good.”

For the second course in the program, the students had similar EOCS comments in both the intervention and control courses. The students stated that the instructor was engaged, responsive, thorough, informative, and knowledgeable. One student in an intervention course mentioned the videos in their comment, “The instructor is always engaged and prepared us each week with videos or examples that were related to the assignments for the week.”

Table 2. Comparison of EOCS Response to “My Instructor was engaged in the classroom discussion in a helpful and meaningful way.”

<table>
<thead>
<tr>
<th></th>
<th>Intervention Mean/SD</th>
<th>Control Mean/SD</th>
<th>T (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Course</td>
<td>4.26 (1.25)</td>
<td>4.45 (.912)</td>
<td>.591 (43)</td>
<td>.557</td>
</tr>
<tr>
<td>Second Course</td>
<td>4.79 (.419)</td>
<td>4.83 (.491)</td>
<td>.257 (40)</td>
<td>.799</td>
</tr>
<tr>
<td>First and Second Courses Combined</td>
<td>4.50 (.994)</td>
<td>4.64 (.743)</td>
<td>.771 (85)</td>
<td>.443</td>
</tr>
</tbody>
</table>

Table 3. Comparison of EOCS Response to “My Instructor effectively related his/her expertise in the subject matter area.”

<table>
<thead>
<tr>
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<th>T (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Course</td>
<td>4.09 (1.203)</td>
<td>4.50 (.859)</td>
<td>1.320 (43)</td>
<td>.194</td>
</tr>
<tr>
<td>Second Course</td>
<td>4.74 (.653)</td>
<td>4.77 (.429)</td>
<td>.211 (39)</td>
<td>.834</td>
</tr>
<tr>
<td>First and Second Courses Combined</td>
<td>4.38 (1.035)</td>
<td>4.64 (.685)</td>
<td>1.355 (84)</td>
<td>.179</td>
</tr>
</tbody>
</table>

Table 4. Comparison of EOCS Response to “I would recommend this instructor.”

<table>
<thead>
<tr>
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Interpretation

This study did not see an increase in student satisfaction, but it did not show that there was a decrease either. The scholarship of teaching shows it is important to continue enhancing and engaging students in their academic learning. From our perspective, interventions like video instruction are imperative to use in an online learning modality.

CONCLUSIONS

Knowledge acquisition is imperative in students’ experience learning. While our direct intent was to increase course satisfaction for the students, there was no significant difference between the video and nonvideo instruction intervention. However, the inclusion of video instruction should not be diminished because, as Boyer (1990) states, academic work takes time and recognizes its profession’s diversity.

Further research should be conducted to determine the effectiveness of the use of videos in the online platform. Even though the results showed no statistically significant difference between the intervention and control groups, one limitation to the study is that the results were solely based on end of course surveys. Researchers should develop a specific survey instrument to assess students’ perceptions of the inclusion of videos in online courses. Having this targeted feedback will further help instructors develop additional content using Web 2.0 tools.

Lastly, it is critical to point out that each instructor has different teaching styles that include speaking and describing. There were no templates from which each video was made. This purposeful aspect of video production shows the freedom of discovery and synthesis that Boyer (1990) regards as teaching scholarship. While this research did not demonstrate a significant difference in engagement and satisfaction, a subset of students commented on the use of videos in their EOCS. The EOCS are vital sources of information for instructors but may also provide vague feedback. The instructors also received calls and positive feedback via the private forum regarding the videos used in these courses, and these data were not included in the analysis.

We will continue to utilize videos in our classrooms. The lessons we learned from this intervention include having consistency and accuracy in each video, and allowing further clarification and development based on student comments. The intervention that we created for the courses impacted the students in the courses and set a level of engagement for the future of their program. Dell et al. (2015) explained that engagement and interaction are principles that are needed in an online platform. Furthermore, this glimpse into analyzing video use in these courses demonstrates a further need to continue researching interactions in online learning.

In conclusion, further research is needed to gain a perspective on the effect of video instruction on students’ comprehension. There is a need to apply video instruction in more and differing courses throughout the graduate-level program. Confounding variables, including GPA, work commitments, motivation, self-regulation, and family life, may affect students’ EOCS responses. Future research should explore the impact of these additional variables on student learning.
REFERENCES


