Calling an Audible: The Use of Interactive Video Lectures and Adjusting Course During the Pandemic-Affected Spring 2020 and Fall 2020 Semesters

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ABSTRACT. The COVID-19 pandemic brought monumental changes to life around the world, including drastic changes to how traditional face-to-face (F2F) American university courses have been conducted. In Spring 2020, institutions of higher education had to move courses fully online (if they were mid-term) or in some cases end a term of F2F only to return from break fully online in a span of a week. This brought major adjustments for those teaching on campus, particularly in thinking about how to provide active learning opportunities for students in what was for many a new teaching modality. This study focuses on changes I made to my three F2F courses during the Spring 2020 semester to preserve active learning for students while providing flexibility of course completion. It also focuses on four courses adjusted from a planned F2F offering to online during the Fall 2020 semester. It particularly focuses on use of interactive video lectures (IVLs) as a replacement for traditional in-class sessions in the spring semester and the use of IVLs as part of a flipped classroom model during the four synchronous online classes during the Fall 2020 semester. Below, I outline a summary of research on active learning in college classes and the emerging, yet small, body of research on the use of IVLs in classes.

Keywords: *Higher education, pandemic, online learning, interactive video lectures*

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The COVID-19 pandemic brought monumental changes to life around the world, including drastic changes to how traditional face-to-face (F2F) American university courses have been conducted. In Spring 2020, institutions of higher education had to move courses fully online (if they were mid-term) or in some cases end an F2F term only to return from break fully online in a span of a week. This brought major adjustments for those teaching on-campus, particularly in thinking about how to provide active learning opportunities for students in what was for many a new teaching modality. This study focuses on changes I made to my three F2F courses during the Spring 2020 semester to preserve active learning for my students while providing flexibility of course completion. It also focuses on four courses adjusted from a planned F2F offering to online during the Fall 2020 semester. It particularly focuses on use of interactive video lectures (IVLs) as a replacement for the traditional in-class sessions in the spring semester and the use of IVLs as part of a flipped classroom model during the four synchronous online classes during the Fall 2020 semester. Below, I outline a summary of research on active learning in college classes and the emerging, yet small, research on the use of IVLs in classes.

Active Learning and On-campus Classes

A vast amount of research in the past two decades has investigated benefits of students' active learning in higher education courses (Hunsu et al., 2016; Keough, 2012; Mayer et al., 2009; Rambocas & Sastry, 2017; Shapiro & Gordon, 2012). Active learning can be defined as the use of strategies to engage students where they are actively participating and doing something in the course, such as answering poll questions, individual and small groups activities, and reflection, among many other strategies (Brame, 2016; University of Minnesota, 2021). Hunsu et al. (2016), in a meta-analysis of audience response systems (ARS; I.e., systems where students respond to questions during the lectures, such as clickers), found their use is associated with cognitive gains and with non-cognitive gains in areas such as engagement and self-efficacy. Keough (2012), in a review of 66 articles that used ARS, found that students perform better in classes that use them. For example, Mayer et al. (2009) found in a study of 385 educational psychology students who used questions in course sections where students responded, via ARS, performed better on exams compared to the section that did not use them.

More subjectively, students note that the use of questions and other active learning strategies is beneficial for their learning and keeps them more engaged during class sessions (FitzPatrick et al., 2011; Gauci et al., 2009; Johnson, 2005; Keough, 2012; Koenig, 2010; Molgaard, 2005; Moredich & Moore, 2007; Patry, 2009; Poirier & Feldman, 2007). Gauci et al. (2009) found in a study of 135 physiology students that the use of clicker questions during class sessions had them more intellectually stimulated, more engaged, and that it helped their understanding of the content. FitzPatrick et al. (2011) found in a study of 229 anatomy and physiology students that they noted clicker questions in the lectures as being helpful to their learning, particularly in their ability to check for understanding.

Students appear to appreciate the instant feedback that answering questions in-class provides them on how well they are understanding the content (Koenig, 2010; Milner-Bolotin et al., 2010). Studies consistently report students also feel more engaged in class sessions (Patry,

2009; Porter & Tousman, 2010). They also report being less annoyed or bored during class sessions (Uhari et al., 2003). It is less known, however, how students perceive the use of active learning in online lecture videos, particularly when lecture videos replace on-campus lectures or are used in flipped online courses.

Other research has found that just the act of having students pause to write notes, reflect, and/or talk with students around them has been found beneficial (Richards et al., 2017; Ruhl et al.,1987). Bachhel and Thaman (2014) found in a study of 150 medical students, that when they were asked to pause three times for 2-3 minutes during class sessions to talk with those around them and make changes to their notes, they scored significantly higher than students who did not have pauses built into class sessions. Students also reported this helped with their understanding of the content and their recall of the material (Bachhel & Thaman, 2014). Chowdhury (2016) found similar results in a study with an accounting class. The treatment group, which featured built-in pauses throughout the lectures, scored significantly better and noted enjoying the course more than the non-pause control group did (Chowdhury, 2016). Less is known, however, about how students view pauses and other interactive features in online video lectures in supporting their engagement and learning.

Active Learning and Online Lecture Videos

Some research and commentary on active learning with online video lectures has also been done. Zhang (2020) argued that interactive video lectures help retain students' attention better than regular video lectures because students typically must answer questions to advance the lecture slides. This also helps tell students, via their responses to the questions, how well they are retaining information (Zhang, 2020). Mischel (2019) made a similar case using interactive video lectures in her undergraduate and graduate business classes.

Empirically, Carney (2017) compared standard video lectures on YouTube to two types of interactive video lectures in a flipped high school AP chemistry class. She found that students performed better in units that used the IVLs compared to the standard video lectures. Students also reported being more engaged during the video and during class sessions following reviews of those videos. At the college level, Suhonen and Tiili (2016) used IVLs in an engineering physics class. Students watched the IVLs before coming to the laboratory sessions. They found videos were related to quicker completion of the labs; students reported that the labs were easier to complete because of the IVLs (Suhonen & Tiili, 2016).

In addition, Ottusch and Jordan (2019) implemented IVLs in four online psychology and family science courses and found that students noted paying more attention to the IVLs compared to if they were watching a standard video. They also found students reported feeling it supported their learning better than non-IVLs. Cummins et al. (2015) implemented IVLs in a flipped computer programming class; four out of five students found the IVLs useful. It is not known, however, how students perceive the use of IVLs in replacing standard in-class sessions or flipped online courses. The current study addresses this gap.

The Flipped Classroom

Five of the courses in the current study, one in Spring 2020 and four in Fall 2020, followed a version of what is called the flipped classroom model. The flipped classroom model switches around the order typically used in educational courses. Instead of students passively reading before class and then having their first main exposure to the concepts while in class, the

flipped classroom gives the students their first interactions with the concepts before class. This can be done via reading quizzes, worksheets, interactive lectures, or other means. Then, greater application of the concepts takes place during the class session (often referred to as the group time; whether F2F or online). In Bloom's Taxonomy terms this means students do more of the higher order cognitive work (such as analysis, construction, and/or application) together in class, rather than having students work on those tasks independently out of class (Brame, 2013). The flipped class has been seen as supporting student learning and their course participation. This approach also offers more opportunities for instructors and students to gain more information on how the student's learning is progressing (The University of Texas at Austin, 2021).

Empirically, research on the flipped classroom has found evidence to support students do learn more via that approach. A meta-analysis by Chen et al. (2018) of 46 studies comparing the flipped classroom with the more traditional teaching approach found the flipped classroom was associated with better end of course grades and exam scores. Gilboy et al. (2015) found in a study on two nutrition courses that students preferred the flipped classroom approach, particularly because they preferred watching a lecture and applying it in-class rather than having the lecture in class. Students noted liking the ability to go at their own pace while watching the videos and the opportunity this brought to apply the content while together in class (i.e., the group time; Gilboy et al., 2015). For the current study, five of the seven total class sections included used the flipped classroom model. I was interested in students' perspectives on the use of IVLs as part of fully online courses using this approach, including their perspectives on their use generally, how students felt they compared to synchronous sessions, and how it possibly supported the group time.

Summary and The Current Study

Given the importance of active learning for student learning, coupled with the importance of allowing students to actively construct their knowledge in a supported environment, the current study sought to gain student feedback from seven total Family Science courses across the Spring 2020 and Fall 2020 pandemic-affected semesters.

For Spring 2020, the aim of the current study was to understand students' perspectives on the use of interactive video lectures through the program PlayPosit instead of synchronous in-person group meetings. A secondary aim for the Spring 2020 semester was to understand student's perspectives on discussion boards, which the IVLs supported. For Fall 2020, the aim was to understand the use of IVLs as part of a flipped classroom in four fully synchronous Family Science courses where students completed readings and watched IVLs before coming to a synchronous session where concepts were available. A secondary goal for the Fall 2020 semester was to understand how the IVLs supported the synchronous online sessions.

Methods

Participants

Participants consisted of 190 total students, 141 in Spring 2020 and 49 in Fall 2020, from seven total Family Science undergraduate classes at a large southwestern university in the United States. Two courses were part of a Family Studies and Human Development (FSHD) major and minor: Adolescence and Issues of Aging. Both were offered in Spring 2020 and Fall 2020 and surveyed general topics on that part of the life course. The third course was a research methods

course serving all majors (FSHD, Personal and Family Financial Planning (PFFP), and Retail and Consumer Sciences (RCSC)) for the Family and Consumer Science school. The instructor taught one section of the course in Spring 2020 and two sections of the course in Fall 2020. At the time of the courses being offered, students completed the research methods class as a pre-major for the school majors. The FSHD majors could take the aging and adolescence courses in any order once they became FSHD majors.

In sum, three courses were taught during the Spring 2020 semester, with one following a flipped course model. The other four courses taught during the Fall 2020 semester were fully online, with all four featuring a flipped course model.

In Spring 2020, for the respondents from the adolescence course (N= 97), the majority were female (97%), juniors or seniors (83%), Latinx[1] (48%) or White (35%), and were an average age of 21.5 years (See Table 1). Half the students in adolescence were FSHD majors, with an additional 17% majoring in psychology (Table 1). The aging course (N= 52) was also primarily female (83%), juniors or seniors (87.8%), Latinx (39%) or White (39%), and averaged 21 years of age (Table 1). The students were majority FSHD majors (51%), and a large minority were psychology (24%; Table 1). Respondents from the research methods class (N= 43) were majority female (86%), with most being sophomores (47%) or juniors (51%). The respondents were mostly Latinx (47%) or White (47%), with an average age of 21.5 years (Table 1). For major in the methods class, 51% were FSHD, 37% were RCSS, and 9% were PFFP (Table 1).

For the Fall 2020 semester, given the smaller sample, size data are summarized across all four classes. The participants in the Fall 2020 courses were primarily again female (95%), juniors (71%), White (66%) or Latinx (18%), FSHD majors (62%), and had an average age of 21 years (Table 2).

Materials and Procedures

Spring 2020 Course Descriptions

Data for the current study were collected from the three courses at the end of the Spring 2020 semester and the four courses at the end of the Fall 2020 semester. At the beginning of the Spring 2020 semester, pre-COVID-19 Pandemic, the research methods class was set up as a hybrid. The class watched interactive video lectures through the program PlayPosit[2] and did standard course readings before the class met for their only 75-minute class session of the week. The adolescence and aging courses were traditional face-to-face classes, both meeting for 75 minutes twice a week. All three classes completed in-class activity (ICA) sheets during the synchronous group sessions, which included several active learning components. They turned these in for a small percentage of their grade.

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[1] The survey's race/ethnicity question included Hispanic/Latino/a/x as an option. This language has shortcomings because there are overlapping and yet different meanings to Hispanic and Latinx. Participants were also not allowed to check more then one race/ethnicity option, although they could select the "other" option, which presents problematic issues in the accuracy of their race/ethnicity.
[2] The university has a PlayPosit subscription for all faculty. The faculty member and students in the study did not pay for it. A free version is available of PlayPosit with more limited options for those without subscriptions. Other forms of IVLs exist, such as Kaltura offers interactive features.

Table 1

Sample demographics from Spring 2020 courses

Class Measure	*Research Methods* *M or %*	*Adolescence* *M or %*	*Aging* *M or %*
Gender			
Female	86.0	96.7	82.9
Male	14.0	4.4	17.1
Age	20.5 [a]	21.5 [b]	21.0 [c]
Class			
Freshman	0.0	0.0	2.4
Sophomore	46.5	17.4	9.8
Junior	51.2	58.7	51.2
Senior	2.3	23.9	36.6
Race/Ethnicity			
White	46.5	34.8	39.0
African American	2.3	13.0	2.4
American Indian or Alaska Native	0.0	0.0	2.4
Asian or Asian American	4.7	4.4	14.6
Hispanic/Latino/a/x	46.5	47.8	39.0
Other	0.0	0.0	2.4
Major			
Family Studies and Human	51.2	50.0	51.2
Psychology	0.0 [d]	17.4	24.4
Retail and Consumer Sciences	37.2	0.0 [d]	0.0 [d]
Personal and Family Financial	9.3	0.0 [d]	0.0 [d]
Other	2.3	32.6	24.4

Note. a= Range 19-25; *SD* = 1.3; b= Range 19-29; *SD* = 2.1; c= Range 19-24; *SD* = 1.1; d= The research methods class serves FSHD, RCS, and PFFP students, thus Psychology was not asked as an option for that class. The adolescence and aging courses typically serve FSHD and Psychology students. RCS and PFFP were not options given for those surveys.

      The university's decision to move classes fully online because of COVID-19, at first temporarily and then for the rest of the semester, came during spring break. The first eight weeks of the class were traditional semester and the final eight weeks and exam week were online. In adjusting to the pandemic-affected move to online, the research methods synchronous section was replaced with an additional IVL. This IVL was created each week to mirror what would have been discussed during the synchronous session. Questions in the video were often the same as or very similar to questions that would have been asked during the synchronous session. Students received their ICA point for completing the video. Videos ranged in length from 6-33 minutes, with all but one being more than 15 minutes and five being 25 minutes or longer.

      For the Spring 2020 semester adolescence and aging courses, the two synchronous sessions (Tuesday/Thursday) were replaced with IVLs and a once-a-week discussion board. The IVLs featured the same slides that would have been covered in class and many of the same questions and activities that would have been included in their ICA sheets. The role of pauses and questions in the IVLs was a mix of promoting critical thinking, prediction of concepts to come, retention of concepts, and review of materials covered in the videos. Students received their ICA point for watching the IVLs on the related topic (for instance, watching both IVLs on bullying in the adolescence course would have earned them their ICA point, similar to if they attended a synchronous session on bullying before the pandemic). The range of videos for adolescence each week was 2-5 and for the issues of aging course 2-6. The range of time for the videos were 9-36 minutes for adolescence and 7-54 minutes for aging. Longer videos were recorded guest lecture sessions that were not easily made into smaller videos. No standard lecture video created solely by the first author lasted more than 19 minutes between either class.

The newly created discussion boards for the adolescence and aging courses included activities, such as reviewing a movie clip or reading a *New York Times* article, that was not deemed a good fit to be embedded into lecture videos. Students completed an initial post and two follow-up posts for their participation point.

Table 2
Sample demographics from Fall 2020 courses

Measure	M or %
Gender	
Female	94.5
Male	5.5
Age	21.0[a]
Class	
Freshman	0.0
Sophomore	7.3
Junior	70.9
Senior	2.3
Race/Ethnicity	
White	65.5
African American	3.6
American Indian or Alaska	3.6
Asian or Asian American	7.3
Hispanic/Latino/a/x	18.2
Other	1.3
Major	
Family Studies and Human	61.8
Psychology	5.5
Retail and Consumer Sciences	12.7
Personal and Family Financial	3.6
Other	16.4
Course Enrollment[b]	
Research Methods (Monday	12.7
Research Methods	18.2
Adolescence	47.3
Issues of Aging	32.7

Note. a= Range 19-33; *SD* = 2.5; b= Four students were in adolescence and aging, two were in methods and adolescence

The decision to replace synchronous sessions during the Spring 2020 semester with asynchronous components was made because of the instructor's knowledge that some students in the courses did not have internet, reliable internet, and/or reliable devices (i.e., computers, tablets) at their residences. This made online learning in difficult in general. Such incidents were not isolated and lack of internet access became a well-reported issue in higher education during the pandemic (Levin, 2020; Wong, 2020). Asynchronous components were also implemented for flexibility for students who were, aside from technology issues, no longer available to make it to normally scheduled class sessions due to work, family, health, or other demands. Overall, asynchronous components were made to allow students flexibility in engaging with the content without being too disadvantaged.

Fall 2020 Course Descriptions

For the Fall 2020 semester, two sections of the research methods course and one section of adolescence and issues of aging, respectively, were included. Similar to Spring 2020 classes,

under normal circumstances the methods sections were set up as hybrid, meeting for one 75-minute session per week while the adolescence and aging courses met for two 75-minute sessions. All four sections were moved from their regularly scheduled modalities to "flex in-person," as the general hope for the university was to move to in-person instruction at some point during the Fall 2020 semester. However, the courses ended up being fully online the entire semester.

In contrast to the Spring 2020 semester changes, each Fall 2020 class met synchronously online each week for one 75-minute session. This was done to include more opportunities for live interaction, particularly with students having more time to find workable options for remote learning. In addition, even if the university had moves to on-campus instruction, social distancing would have allowed for the students to attend only once per week. The once-a-week online session was structured to be similar for students if they returned to campus for just one weekly session. For the two research methods sections the course met on Zoom during their regularly scheduled 75-minute time slot. For adolescence and aging courses, one of the 75-minute sessions was converted into IVLs, as I did in Spring 2020. Students in all four courses completed course readings and PlayPosit IVLs before coming to the one synchronous session of the week. This 75-minute synchronous online session was held on Tuesdays, with the Thursday 75-minute session set aside as drop-in hours (additional office hours) for students to meet about anything they needed. Completion of IVLs accounted for 8-10% of the student's final grades and were based on completion, not accuracy of responses.

For all four Fall 2020 courses, synchronous sessions were structured based on key concepts students were exposed to via readings and PlayPosit IVLs, with additional materials included to supplement their learning, such as videos, podcasts, or additional brief readings. For the two research method sections there were 1-4 IVLs per week with video time ranging from 5-18 minutes. The adolescence course featured 1-6 videos per week with a 4-17 minute range of video time and the aging course was 2-7 videos with a range of 4-16 minutes in video length. The flipped class model meant students were exposed via course readings and IVLs before the 75-minute synchronous session and then applied and actively engaged with the course concepts during the session. Data from the IVLs were reviewed before class, including a final question in all the IVLs that asked about any "muddy" points they had (i.e., most confusing points), and changes were made to the synchronous session lesson plan to address any of these major muddy points. During synchronous sessions students completed an in-class activity (ICA) and submitted it by the following Sunday. Students unable to attend the synchronous session were able to watch the posted recording and could also complete the ICA by Sunday. ICAs made up about 5% of the final grades for all four courses.

Data Collection

During the last weeks of the Spring and Fall 2020 courses, anonymous surveys were distributed. For Spring 2020 two surveys were constructed, one specifically given to the research methods class and one given to adolescence and aging students (see the full interview guides in the Appendices A and B). The research methods course was given a different survey because the course used PlayPosit IVLs before the pandemic as part of the flipped hybrid style in place, and the focus of the current survey was on use of the PlayPosit IVLs created during the pandemic as a replacement for synchronous sessions. The current study focuses on feedback from students from the research methods courses on the on-campus replacement IVLs. The focus from

adolescent and aging courses was on the use of IVLs as a replacement for twice weekly on-campus sessions, and to a lesser extent the discussion board, instead of those sessions.

Specifically for the Spring 2020 semester, the research methods course focuses on three closed-ended questions and four open-ended questions from the survey. The closed-ended questions focused on how students felt the IVLs mirroring the synchronous sessions did in comparison to synchronous sessions and if they felt this was a good alternative in the future if a class session were to be cancelled. Open-ended questions focused on what elements of the videos they felt supported their learning and what they would change (See Appendix A for full interview guide). For adolescence and aging courses, the current study focuses on seven closed-ended questions on the use of IVLs and two on use of discussion boards, along with seven open-ended questions. The closed-ended questions included asking students to compare how IVLs did in comparison to synchronous sessions and to non-interactive video lectures. Open-ended questions focused on what elements of the videos they felt supported their learning and changes they would have made (See Appendix B for full interview guide).

For the Fall 2020 semester, one survey was given to students in all four courses. The focus of the current study across the four courses was to understand if and how students perceived IVLs supporting their learning and their perceptions of synchronous online sessions. Eight multiple choice questions and two short answer questions were asked of all participants related to the IVLs, including how they felt IVLs compared to if the material was offered via synchronous online lectures. An additional nine closed-ended questions were included on student's perceptions of synchronous online sessions, including one regarding coverage of muddy points from the IVLs (see Appendix C for the full survey).

Students in the Spring 2020 semester received a small number of extra credit points if 80% of the class participated. All three classes achieved the 80% threshold. The Fall 2020 semester courses were not offered for extra credit, possibly relating to lower survey engagement in Fall 2020 classes compared to Spring 2020 semesters. The Spring 2020 study was deemed non-human subjects research by the university institutional review board (IRB) and was exempt from a full review. The Fall 2020 course study was deemed human subjects research and was approved by the IRB.

Analyses

Descriptive statistics were obtained on sample demographics across the three surveys. The demographics obtained, which are summarized above and in Tables 1 and 2, included gender, age, class standing, race/ethnicity, and major. For Spring 2020 courses, frequencies were then obtained on the three closed-ended questions in the research methods survey and nine total closed-ended questions from the adolescence and aging course survey. Data from adolescence and aging survey are presented together, given the similar nature to the changes and how 11 students that completed the survey were enrolled in both sections. Finally, open-ended responses were reviewed from both surveys, including questions asking if the IVLs supported their learning and their suggested changes. Three additional open-ended questions were reviewed from the aging and adolescence survey related to student perceptions on use of discussion boards. These comments were first open-coded based on exact words used by participants (e.g., interactive, rewind) and by concepts asked in the closed-ended questions (e.g., support, engaged). Codes were then organized and collapsed based on similarities of code name (such as "active" and "engaged"). Findings from this analysis are used below to complement the quantitative data.

For the Fall 2020 semester courses, given that there were fewer responses and the similarity of course structure, information on the IVLs and synchronous sessions were analyzed together. Frequencies were obtained for eight closed-ended IVL and nine closed-ended synchronous online session questions. In addition, two open-ended questions about how the IVLs possibly supported their learning and what they would change were analyzed. The 88 total comments were initially open-ended, based on exact word or word phases used by students (kept me focused, own pace, focus on the content), as well as general codes from survey questions. These codes were then collapsed into smaller categories based on similarity of code (i.e., engaged, pacing) and were used, like the Spring 2020 data, to complement closed-ended quantitative findings.

Results

Research Methods Spring 2020

Students reported overall positive feedback on adjustments made to the research methods class. There was a reminder that this involved moving the on-campus sessions to a replacement interactive video that mirrored what would have been discussed during the synchronous session. Students still watched the already developed IVLs before the date of the previously held synchronous sessions. A "replacement" IVL was created partially from their data from the normal IVLs to create a "replacement" IVL for the synchronous session that mirrored what would have occurred had the class met in-person. Overall, 46.9% somewhat to strongly agreed that IVLs were very to more effective than in-person sessions, with an additional 37.2% noting that IVLs were moderately effective in comparison to in-person sessions (Table 2). In addition, 76.7% somewhat to strongly agreed that IVLs supported their learning similar to the pre-pandemic in-class activities. Finally, 81.4% of students somewhat to strongly agreed with the suggestion of using an IVL as a replacement in the future if a faculty member could not attend a synchronous session (Table 2).

Open-ended comments supplemented and aligned with many of the quantitative findings. When asked "Of the changes I made to the class, what would you keep if we had to do the changes in this semester over again?" the most frequently cited aspect of the class was the PlayPosit replacement videos (14 comments; 11% of comments). In terms of aspects of the IVLs they felt most supported their learning, students most frequently cited the videos' interactive nature, which they felt kept them engaged (Nine comments: 7% of comments). One student noted, "They would require questions to be answered throughout the video to ensure that one was paying attention."

Students also noted the ability to refer to the videos when needed for review of content (Five comments; 4% of comments), as well as the ability to pause and rewind them (Four comments; 3% of comments), were particularly helpful to their learning. One student noted, "The way it supported my learning is that I was able to go back and re-watch it if I had a doubt." Given that the videos were created after they watched the standard IVLs (such as videos on inferential analysis or interviews), each video reviewed those topics via activities and coverage of "muddy points." Students also noted that the second overview of the topics and the muddy points coverage were particularly helpful to their learning as well (Five comments; 4% of comments). One student noted, "I enjoyed how you always went over the muddy points and it helped support any confusing aspects of the week's material. I also got a refresher from the

PVLs [The course used PVLs as a shorthand for PlayPosit video lectures sometimes, hence the student's use of PVL] to help for the research assignment."

Students also did mention some drawbacks to the videos. The main drawback they noted was the length of the videos. As noted earlier, most videos were at least 15 minutes long and often longer than 25 minutes. One student noted, "I would break the ICA [In-class activity] makeup videos into two parts. I struggle with focusing on videos if they are too long." Another noted, given that the nature of asking the questions throughout the video further added to the length of engaging with the video, "I would change how long the Sunday ones were. Sometimes they would take me over an hour to complete." A few students suggested having an in-class activity sheet to complete alongside the video for their own records. Despite these constructive comments, overall, the students viewed the videos positively and the most frequently occurring comment on what they would change about the videos was "nothing."

Adolescence and Issues of Aging Spring 2020

For adolescence and aging courses, student feedback was again largely positive in the use of IVLs instead of synchronous sessions. Overall, 86.6% somewhat to strongly agreed that the IVLs supported their learning. In comparing in-class lectures to IVLs, 86.6% of students viewed the IVLs as moderately to very effective compared to in-class sessions. An additional 5.2% noted it being more effective than in-person sessions. In addition, 81.4% somewhat to strongly agreed that the questions within the IVLs supported their learning, similar to the in-class activity sheets they completed before the pandemic. Students also reported preferring IVLs instead of having a synchronous online session. Overall, 79.3% of students somewhat to strongly disagreed with the prompt "I would have rather done a live Zoom class session during the course time period rather than the PlayPosit video lectures" (Table 3).

Students particularly noted that IVLs supported their learning, more so than if non-interactive lecture videos were used. Nearly four in five students (78.3%) somewhat to strongly agreed that the IVLs supported their engagement with the material more than if a video was posted without questions, while 82.5% somewhat to strongly agreed that using IVLs instead of a normal lecture video was a good choice (Table 3). Similar to the research methods class, 91.8% of students somewhat to strongly agreed that an IVL would serve as a good replacement if a faculty member misses in an in-class session (Table 3).

Open-ended questions documented why students might have positively viewed use of IVLs. The most frequently cited comment was how questions within the videos provided space for reflection and a check on their learning (17 comments; 13% of comments). One student noted, "I enjoyed the questions because they actually made me think about the material." A fellow student also mentioned, "I liked how the questions made you think more about the material. So, it was closer aligned to what we did in regular class sessions." Another 11 (8% of comments) students noted that embedded questions helped them pay attention, more so than if they were absent. One student noted, "Having the questions come up and knowing they were graded made me pay attention more to the videos than I would have otherwise." Another noted, "Honestly it was good to be accountable in watching because of the questions, I probably wouldn't have paid attention without the questions."

Students also appreciated the ability to watch videos at their own pace, rewind them if needed, and complete them on their own schedules (four comments each; 3% of comments). One

student noted, "I feel like it allowed me to take my time and go at my own pace. The questions allowed me to check my understanding."

Finally, students had positive feedback on inclusion of discussion boards to supplement IVLs. About two-third of students (65.6%) somewhat to strongly agreed that discussion boards were a good replacement for in-class activities and 67.7% somewhat to strongly agreed that discussion boards supported their learning (Table 3). Open-ended questions, including "Please fill in this sentence: I wish instead of discussion boards you _____" and "Please add any additional questions on the discussion boards," largely aligned with quantitative findings. Feedback was positive overall, but there was dislike of completing discussion boards in addition to IVLs. One student noted, "At this point, I am okay with doing my own discussion board but I strongly dislike (in any class) having to reply to someone else." Some suggestions for replacing these were small quizzes or adding questions in the discussion board to the end of the IVLs.

Table 3
Spring 2020 research Method student perspectives on the use of interactive video lectures instead of the once a week in-person group meeting (N= 43)

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Compared to in-class sessions, the in-class PlayPosit makeup video was….	7.0*	7.0*	37.2*	44.2*	4.7*
The PLV makeup video supported my learning similar to the in-class activities in the face-to-face Wednesday class sessions we had before spring break	2.3	11.6	9.3	48.8	27.9
I would suggest using the in-class activity makeup PlayPosit videos in the future if a faculty member is sick or traveling when they can't be "in-class."	9.3	0.0	9.3	16.3	65.1

Note. * Response options were 1= Not effective at all compared to the in-person session 2= Slightly effective compared to the in-person session; 3= Moderately effective compared to the in-person session; 4= Very effective compared to the in-person session; 5= More effective compared to the in-person session.

Spring 2020 Results Summary

Overall, students across the three Spring 2020 courses reported that use of IVLS supported their learning. Research methods students reported that replacement of the sole synchronous session with IVLs was comparable to the once per week on-campus session held previously. Adolescence and aging students felt that IVLs also supported their learning, similar to on-campus sessions. Interactive features were mentioned as important for maintaining attention and supporting learning more broadly. Drawbacks to the changes included length of videos (at times) and less favorable reviews of using discussion boards.

Table 4. *Spring 2020 adolescence and Aging student perspectives on the inclusion of interactive video lectures and discussion boards instead of face-to-face lectures* (N= 97)

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Compared to in-class lectures, PlayPosit videos were….	2.1*	6.2*	40.2*	46.4*	5.2*
The PlayPosit lecture video questions supported my learning similar to the in-class activities in a face-to-face class session before spring break	4.1	6.2	8.3	40.2	41.2
The PlayPosit lecture videos supported helped me engage with the material more so then if the video was just posted without questions.	6.2	11.3	4.1	17.5	60.8
The PlayPosit lecture videos supported my learning in general.	5.2	4.1	4.1	34.0	52.6
Using PlayPosit instead of a traditional lecture video was a good choice.	8.3	3.1	6.2	16.5	66.0
I would suggest using PlayPosit videos in the future if a faculty member is sick or traveling when they can't be "in-class."	4.1	1.0	3.1	22.7	69.1
I would have rather done a live Zoom class session during the courses time period rather than the PlayPosit video lectures.	54.6	24.7	10.3	6.2	4.1
The discussion boards were a good replacement for in-class activities	6.3	15.6	12.5	47.9	17.7
The discussion boards supported my learning	4.2	12.5	15.6	42.7	25.0

Note. Percentages are shown. * Response options were 1= Not effective at all compared to in-class lectures; 2= Slightly effective compared to in-class lectures; 3= Moderately effective compared to in-class lectures; 4= Very effective compared to in-class lectures; 5= More effective compared to in-class lectures

Fall 2020 Courses

The Fall 2020 feedback on the use of IVLs was similar in positivity to the Spring 2020 data. According to Table 5, 96% of study participants somewhat to strongly agreed that the videos supported their learning, while 100% somewhat to strongly agreed (hereafter agreed) the videos helped their understanding of the course content. Students also felt it solidified what they needed to study, kept them engaged, and felt they were a better alternative than non-IVLs, with 94%, 92%, and 84% agreeing with those statements respectively. When asked if instructors could use IVLs as an alternative to a synchronous session if they are sick or traveling, 98% agreed and no student disagreed (Table 5). Students were more split on if they preferred IVLs to lecture via video conferencing (i.e., Zoom), with 44% disagreeing and 40% agreeing (Table 5). In contrast to the Spring 2020 results, 75% agreed they preferred the use of synchronous online sessions versus discussion boards or other supplemental activities (Table 6). When asked about online synchronous sessions, 85.7% of students agreed that coverage of the muddy points from

the IVL data supported their learning (Table 6). Finally, although synchronous online sessions were not as large of a focus for the current study, students noted that synchronous sessions supported their learning, found having an in-class activity sheet and other active learning components as supporting their learning, and found the use of guest speakers brought in remotely to be supportive as well (Table 6).

Table 5. *Fall 2020 student perspectives on PlayPosit Interactive Video Lectures in Research Methods, Adolescence, and Issues of Aging (N= 49)*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The PlayPosit videos supported my learning in general	0.0	2.0	2.0	22.0	74.0
The PlayPosit videos helped increase my understanding of the content	0.0	0.0	0.0	26.0	74.0
The PlayPosit videos helped solidify what I needed to study	0.0	0.0	6.0	36.0	58.0
The embedded questions helped keep me engaged in the video	0.0	6.0	2.0	28.0	64.0
Using PlayPosit video instead of a traditional lecture video was a good choice	0.0	10.0	6.0	20.0	64.0
I would keep the "muddy point" question at the end of the video	0.0	10.0	24.0	24.0	42.0
I would suggest using PlayPosit videos in the future if a faculty member is sick or	0.0	0.0	2.0	14.0	84.0
I would prefer a PlayPosit video to a session instead of a Zoom lecture (i.e., a faculty member mostly lecturing only)	10.0	34.0	16.0	14.0	26.0

Open-ended feedback from questions featured sentiments similar to Spring 2020 student feedback. Students felt that questions in the IVLs kept them engaged (5% of comments) and provided a good learning check of their understanding of concepts (8% of comments). One student noted, "The fact that I knew there was embedded questions in the lectures helped me remain engaged and I would pay thorough attention to the lectures to make sure I didn't miss information I might need." Another noted that the video pushed them to engage with questions, more so than perhaps if they were asked in class: "They forced me to think about and answer the question whereas in class I may not have raised my hand and answered." Three students (3% of comments) noted that multiple-choice questions forced them to answer questions but also helped them see the correct answers.

Regarding what students would change, the most common response was nothing (12 comments; 14% of comments), followed by experiencing technical issues with the program (3 comments; 3 comments), and those wishing for less free response and discussion questions and more forced choice type questions (3 comments; 3% of comments). Two students noted having PowerPoint slides to accompany videos would have helped.

Table 6. *Fall 2020 student perspectives on Synchronous Zoom Sessions in Research Methods, Adolescence, and Issues of Aging (N= 49)*

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Overall, I found the Live Zoom Sessions supported my learning	2.0	8.2	8.2	36.7	44.9
I found the coverage of the muddy points during the session as supporting my learning	0.0	2.0	12.2	30.6	55.1
I found the poll "check-in questions" as supporting my learning	2.0	0.0	6.1	26.5	65.3
I found the "breakout room activities" as supporting my learning	8.2	22.4	18.4	28.6	22.4
I found the large group activities and discussions as supporting my learning	0.0	8.2	12.2	28.6	51.0
I found the inclusion of an activity sheet to fill out during the live Zoom sessions as supporting my learning	0.0	2.1	2.1	18.8	77.1
I 98referred the live class sessions instead of using asynchronous (non-live) format such as discussion boards or VoiceThread activities	6.3	10.4	8.3	14.6	60.4
I found the use of video clips and/or podcast clips supportive of my learning in the Live Zoom Sessions **	0.0	5.9	14.7	32.4	47.1
I found the guest speakers supportive of my learning in the Live Zoom sessions**	0.0	5.9	11.8	17.6	64.7

Note. * Notes somewhat to strongly disagreeing or agreeing with the statement stem. ** Only asked to adolescence and aging courses

Fall 2020 Results Summary

Like the Spring 2020 courses, the students reported that IVLs kept them engaged and supported their learning. Students also felt coverage of muddy points from videos during synchronous online sessions supported their learning. Similar to the Spring 2020 sessions, students also endorsed using IVLs in future courses when synchronous sessions are not possible.

Discussion

The current study sought to understand student perspectives on changes made to three on-campus undergraduate Family Science (FS) classes and four fully online FS classes during the Spring 2020 and Fall 2020 COVID-19 pandemic-affected semesters, respectively. For the Spring 2020 research methods class, this involved moving the once per week 75-minute synchronous sessions to a IVL that mirrored what would have been discussed during the synchronous session. For the Spring 2020 adolescence and aging courses, this included replacing the twice per week 75-minute sessions with 2-6 IVLs and a discussion board each week. For the Fall 2020 courses, all four sections followed a flipped classroom model where they completed readings and watched IVLs before one 75-minute synchronous Zoom session per week. Synchronous online

sessions consisted of review of muddy points from the IVLs and higher order cognitive activities such as evaluation and application.

Overall student feedback from the Spring 2020 semester classes on use of IVLs to replace on-campus sessions was viewed as largely positive. Students in all three classes felt the videos supported their learning similarly to in-class sessions. For the Spring 2020 adolescence and aging courses, who prior to the pandemic were not using IVLs in any capacity, students found their inclusion beneficial in comparison to non-interactive video lectures or a synchronous online session.

The Fall 2020 findings largely mirrored the Spring 2020 findings, with students perceiving IVLs as supporting their learning, keeping them engaged, and allowing them to work at their own pace. In contrast to Spring 2020, Fall 2020 students were more willing to do synchronous online sessions. They also found these sessions as supporting their learning, particularly when completing an active learning sheet. Interestingly, students noted IVLs as being an acceptable alternative if a faculty member were to miss a synchronous session (F2F or online) in the future due to illness, travel, or other reasons.

In comparison with previous research, findings from the current study largely align with work showing the importance of active learning in courses, F2F or online. Aligned with previous research on the topic, students in the current study noted liking the ability to have a check on their understanding of the material and felt this kept them more engaged in class (Koenig, 2010; Milner-Bolotin et al., 2010; Ottusch & Jordan, 2019; Patry, 2009; Porter & Tousman, 2010). Regarding practicality, the current study provided evidence on how IVLs may work as a replacement for in-class sessions. This may be particularly beneficial in the case of a faculty member having to cancel synchronous sessions (F2F or online), as well as a way for faculty to move some content from a synchronous to asynchronous session, allowing greater flexibility for students and their engagement. Given the use of IVLs as part of a flipped classroom model in Fall 2020, further research on IVLs (Kaltura, PlayPosit, etc.) and other means of active learning such as annotation programs (i.e., Perusall, Hypothesis, etc.) may be particularly beneficial because of students' support for active learning in the individual space before engaging in application, evaluation, creation, and synthesis in the group space (whether F2F or synchronous online). This is particularly important to investigate in post-pandemic times and in various modes of course delivery (F2F, online, hybrid).

Findings on students' positive feedback on the use of IVLs may also be a matter of which offers more asynchronous components to all types of course modalities in future classes. These videos allow students to return to the material, going at their own pace with the added layer of interaction within them. As higher education reflects on what practices were used during the pandemic, the use of more asynchronous materials within synchronous classes and the importance of faculty-student interaction have been raised as key take-aways noted by students and instructors (Cohn, 2021; Darby, 2021). Darby (2021) suggested faculty continue to invest in more asynchronous materials to teach more inclusively and allow for flexibility of schedules for faculty and students. Students' preferences for instructor-student interaction (Cohn, 2021) suggest that the video lectures may leverage more time during synchronous group sessions for interaction between students and instructors, and less time for passive lecture. These are all important areas to be investigated.

Finally, two topics should be discussed as important within the confines of the context of the pandemic itself. This includes the status of the students and me as a faculty member. First, one main drawback noted by research methods students in the Spring 2020 semester was the length of the videos, often coming in at 25 minutes. We know videos, both in actual attention that people can pay and preferences of students, should be in the range of 5-15 minutes (LSA Learning & Teaching Technology Consultants, 2019). However, given the nature of the Spring 2020 semester (and loss of childcare for the author), there was limited time to produce videos. Although I knew best practices for video length, it was not feasible to break the videos into smaller chunks. In the future, videos of this length could be broken up into 3-4 parts, with one possibly solely covering muddy points while the other 2-3 cover key concepts related to module or course learning outcomes. It is important for future research to investigate replacement of in-class sessions with IVLs, using best practices on video length and construction.

Second, Spring 2020 students noted being supportive of the decision to use IVLs as a replacement for in-class sessions instead of synchronous sessions on Zoom or another platform. However, some commentary on the nature of Spring 2020 and its unique circumstances warrant conversation of the results. For example, although Wifi and device access is still a problem for college students (Domingo, Karim, & West, 2020; Levin, 2020; Wong, 2020), the issue of WiFi access and devices to complete classes online (e.g., computers, tablets), was a substantial issue during the Spring 2020 semester. I knew of several students with WiFi and/or device issues. The class's asynchronous nature appeared to work well for students thrown into uncertainty, on top of any work, family, or health issues they were dealing with. However, as many faculty (including myself) experienced in the 2020-2021 school year, since the Spring 2020 semester numerous resources have been created for teaching effectively on Zoom or similar platforms, both within institutions (Carnegie Mellon University, 2021) and by publications such as *Chronicle of Higher Education* (Armstrong, 2020; Hogan & Sathy, 2020). As mentioned above, during the Fall 2020 semester all four of my classes used synchronous online sessions, once each week, as a supplement to their watching IVLs for content (using a flipped classroom model), and 75% of respondents noted preferring a synchronous Zoom session instead of discussion board or VoiceThread type activities. These students specifically signed up for an on-campus learning experience. For the Spring 2020 classes, it may have been best to host classes in the format selected given the circumstances, but for the long-term it may not have been a viable option given student preferences for on-campus synchronous sessions and greater resources for effective synchronous sessions for online learning. It is important for future research to investigate the role of schedules, learner preferences for course delivery, and student access to needed technologies to truly understand the best option for delivery of online courses. Given the use of the flipped classroom in all Fall 2020 semester courses, continued investigation into if and how that model of teaching is more effective than others is an important activity, given an expected increase in more hybrid modes of teaching in post-pandemic postsecondary education institutions. Subjective feedback from the current study would also benefit from more objective measures around student success.

Limitations

While the current study offers some data to engage with important questions on course structure and student learning preferences, it has several limitations. First, data come from only seven classes in one Family Science program, all of which the same faculty member taught. Greater diversity of courses is needed. In addition, the study did not ask specifically for students

to compare choices made in my courses to those of other courses. Third, surveys were geared towards students' perspectives on the changes. While that in itself is important, no data were analyzed on student grades or other assessments. No control group was used to compare, for example, the use of regular videos versus interactive ones (as was done by Carney, 2017) or by hosting a synchronous remote session. PlayPosit videos can also be captioned to support people with visual impairments. However, the use of the program by students with possible impairments was not included. Future studies should investigate how students with various exceptionalities experience these programs. Finally, and as mentioned earlier in the discussion, unique aspects of the Spring (which started in one modality and ended in another) and Fall 2020 semesters (regularly scheduled F2F but delivered online but structured to move in a modified fashion F2F with short notice), make it difficult to offer specific generalizations to applicability in other course terms. All these are important limitations and fodder for further research to better answer these important questions.

Conclusion

The current study sought to understand changes made in seven Family Science classes at a large public Southwestern university during the pandemic-affected Spring 2020 and Fall 2020 semesters. Specifically, it sought to understand use of IVLs to replace synchronous sessions (Spring 2020) and the use of IVLs as part of a flipped classroom approach among synchronous online courses (Fall 2020). Overall, students reported that IVLs supported their learning and they felt engaged, particularly in comparison to if I used only non-interactive video lectures and, for the Spring 2020 courses, were a good supplement to synchronous sessions. For the Spring 2020 semester, students particularly appreciated questions in the videos mirroring what they often were asked to do during on-campus sessions. Fall 2020 students noted feeling supported in their learning by using IVLs in the flipped classroom approach and felt coverage of muddy points from those videos during group synchronous sessions supported their learning. Most students reported using IVLs as a replacement in the future if a faculty member cannot attend a traditional on-campus session as an adequate idea. Future research should continue to understand objective effectiveness of IVLs, particularly in comparison to use of synchronous online sessions (such as via Zoom) or traditional on-campus sessions, once many institutions of higher education return to normal schedules.

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Appendix A
Survey for Spring 2020 adolescence and aging courses

Block 1: Consent and Demographics:

Do you consent to participate?
- Yes, I consent to participate
- No, I do not consent to participate

Are you enrolled in either the adolescence or aging course?
- Yes
- No

* If students selected "No" for either question they were moved to the end of the survey and did not complete any further questions.

What is your gender?
- Female (1)
- Male (2)
- Other (3) _____
- Prefer not to say (4)

What is your race/ethnicity?
- White (1)
- Black or African American (2)
- American Indian or Alaska Native (3)
- Asian or Asian American (4)
- Native Hawaiian or Pacific Islander (5)
- Hispanic/Latino/a/x (6)
- Other (7)

What is your age? (Please answer with a whole number)

_____

What is your class standing?
- Freshman (1)
- Sophomore (2)
- Junior (3)
- Senior (4)

What is your major?
- FSHD (1)
- Psychology (2)
- Other (3) _____

What class are you enrolled in? (Select all that apply)
- Adolescence (1)
- Aging (2)

Block 2: Questions on use of PlayPosit

Compared to in-class lectures, PlayPosit videos were....
- Not effective at all compared to in-class lectures (1)
- Slightly effective compared to in-class lectures (2)
- Moderately effective compared to in-class lectures (3)
- Very effective compared to in-class lectures (4)
- More effective compared to in-class lectures (5)

The PlayPosit lecture video questions supported my learning similar to the in-class activities in a face-to-face class session before spring break
- Strongly disagree (1)
- Somewhat disagree (2)

- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

The PlayPosit lecture videos supported helped me engage with the material more so then if the video was just posted without questions.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

The PlayPosit lecture videos supported my learning in general.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

Using PlayPosit instead of a traditional lecture video was a good choice.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I would suggest using PlayPosit videos in the future if a faculty member is sick or traveling when they can't be "in-class."

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I would have rather done a live Zoom class session during the courses time period rather than the PlayPosit video lectures.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

This semester has made me want to take more online courses in the future.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

What about the PlayPosit videos did you feel supported your learning?
_____

What about the PlayPosit videos would you change?
_____

Block 3: Questions on use of Discussion Boards
The discussion boards were a good replacement for in-class activities

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)

- Somewhat agree (4)
- Strongly agree (5)

The discussion boards supported my learning
- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

Please fill in this sentence: I wish instead of discussion boards you _____?

_____

Please add any additional questions on the discussion boards.
_____

Block 4: Additional Open-Ended Questions
Of the changes I made to the class, what would you keep if we had to do the changes in this adjusted semester over again?
_____

Of the changes I made to the class, what would you change if we had to do the changes in this adjusted semester over again?
_____

Please write any additional comments you have here. Good or bad. I appreciate any and all feedback.
_____

Appendix B
Survey for Spring 2020 Research Methods Class

Block 1: Consent and Demographics:

Do you consent to participate?
- Yes, I consent to participate
- No, I do not consent to participate

Are you enrolled in the research methods course?
- Yes
- No
  * If students selected "No" for either question they were moved to the end of the survey and did not complete any further questions.

What is your gender?
- Female (1)
- Male (2)
- Other (3) _____
- Prefer not to say (4)

What is your race/ethnicity?
- White (1)
- Black or African American (2)
- American Indian or Alaska Native (3)
- Asian or Asian American (4)
- Native Hawaiian or Pacific Islander (5)
- Hispanic/Latino/a/x (6)

- Other (7)

What is your age? (Please answer with a whole number)

_____

What is your class standing?
- Freshman (1)
- Sophomore (2)
- Junior (3)
- Senior (4)

What is your major?
- PFFP (1)
- FSHD (2)
- Retail (3)
- Other (4) _____

Block 2: Use of PlayPosit In-Class Make-up videos

Compared to in-class sessions, the in-class PlayPosit makeup video was....
- Not effective at all compared to the in-class session (1)
- Slightly effective compared to the in-class session (2)
- Moderately effective compared to the in-class session (3)
- Very effective compared to the in-class session (4)
- More effective compared to the in-class session (5)

The PLV makeup video supported my learning similar to the in-class activities in the face-to-face Wednesday class sessions we had before spring break
- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I would suggest using the in-class activity makeup PlayPosit videos in the future if a faculty member is sick or traveling when they can't be "in-class."
- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

What about the PlayPosit ICA makeup videos did you feel supported your learning?

_____

What about the PlayPosit ICA makeup videos would you change?

_____

Of the changes I made to the class, what would you keep if we had to do the changes in this semester over again?

_____

Of the changes I made to the class, what would you change if we had to do the changes in this semester over again?

_____

Please write any additional comments you have here. Good or bad. I appreciate any and all feedback.

_____

Appendix C
Survey for Fall 2020 Courses

Block 1: Consent
Do you consent to participate?
- Yes, I consent to participate (1)
- No, I do not consent to participate (2)

Are you enrolled in either FCSC 202, FSHD 377 and/or FSHD 413?
- Yes
- No

* If students selected "No" for either question they were moved to the end of the survey and did not complete any further questions.

Block 2: Demographics
What is your gender?
- Female (1)
- Male (2)
- Other (3) _____
- Prefer not to say (4)

What is your race/ethnicity?
- White (1)
- Black or African American (2)
- American Indian or Alaska Native (3)
- Asian or Asian American (4)
- Native Hawaiian or Pacific Islander (5)
- Hispanic/Latino/a/x (6)
- Other (7)

What is your age? (Please answer with a whole number such as 18, 19, 20, 21, etc.)
_____

What is your class standing?
- Freshman (1)
- Sophomore (2)
- Junior (3)
- Senior (4)

What is your major?
- FSHD (1)
- Retail (2)
- PFFP (3)
- Psychology (10)
- Other (11) _____

What class are you enrolled in? (Select all that apply)
- Research Methods (Monday Section) (1)
- Research Methods (Wednesday Section) (2)
- Adolescence (4)
- Issues of Aging (5)

Block 3: Use of PlayPosit IVLs

The first few questions I want to ask are about your experiences with the PlayPosit Interactive Video Lectures (IVLs) in my classes this Fall 2020 semester.

The PlayPosit lecture videos supported my learning in general.
- Strongly disagree (1)

- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

The PlayPosit lecture videos helped increase my understanding of the content.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

The PlayPosit lecture videos helped solidify what I needed to study.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

The embedded questions helped keep me engaged during the video.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

Using PlayPosit instead of a traditional lecture video (i.e., a video without questions embedded in them) was a good choice.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I would keep the "muddy point" question at the end of each video.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I would suggest using PlayPosit videos in the future if a faculty member is sick or traveling when they can't be "in-class."

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I would prefer PlayPosit videos to a session instead of a Zoom lecture (this is different then the format I used during out Live Sessions. This would mostly be me lecturing over the slides like the IVLs did).

- Strongly disagree (20)
- Somewhat disagree (21)
- Neither agree nor disagree (22)
- Somewhat agree (23)
- Strongly agree (24)

What types of embedded question did you find most supportive of your learning?

- Multiple choice questions (1)
- Free response questions/Discussion questions (2)
- Poll questions (3)

- Reflective pauses (4)
- Other (5) _____

What about the PlayPosit videos did you feel supported your learning?
_____

What about the PlayPosit videos would you change?
_____

Block 3: Student Feedback on Live Zoom Sessions

Now I would like to ask you a few questions about our Live Zoom Sessions.

Overall, I found the Live Zoom Sessions supported my learning.
- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I found the coverage of the muddy points during the session as supporting my learning.
- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I found the poll "check-in questions" as supporting my learning.
- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I found the "breakout room activities" as supporting my learning.
- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I found the large group activities and discussions as supporting my learning.
- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

Are you in Adolescence or Issues of Aging?
- Yes (4)
- No (5)

I found the use of video clips and/or podcast clips supportive of my learning in the Live Zoom sessions.
- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I found the guest speakers supportive of my learning in the Live Zoom sessions.
- Strongly disagree (1)

- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

* Only asked to those in the adolescence of aging courses.

I found the inclusion of an activity sheet to fill out during the live Zoom sessions as supporting my learning

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

I preferred the live class sessions instead of using an asynchronous (non-live) format such as discussion boards or VoiceThread activities.

- Strongly disagree (1)
- Somewhat disagree (2)
- Neither agree nor disagree (3)
- Somewhat agree (4)
- Strongly agree (5)

What from the live Zoom sessions did you find most beneficial to your learning?

_____

What suggestions do you have for the Zoom sessions moving forward? I.e., what would you change?

_____

Please add any additional questions on the Live Zoom sessions.

_____