Supporting Academic Integrity in a Fully-Online Degree Completion Program Through the Use of Synchronous Video Conferences

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ABSTRACT

Since 2012, we have used synchronous, web-based video conferences in our fully-online degree completion program. Students are required to participate in four live video conferences with their professor and a small group of peers in all upper division online courses as a minimum requirement for passing the class. While these synchronous video conferences create some challenges in implementation, they address concerns about academic integrity in three important ways. First, they provide a structured space for faculty to be present with students in a face-to-face manner. Second, they provide important checks to avoid impersonation schemes which are a common concern with online coursework. Third, they assist students in keeping up on the course material, which may mitigate the temptation to cheat. As distance learning courses and online programs have exploded in number, the issue of academic integrity has taken center stage for program design. In this paper, we share a case of a program built to address academic integrity issues through the regular and highly structured use of small group video conferencing as a requirement for all courses. We describe the video conferencing protocol of our online program and suggest best practices for using video conferencing to address concerns about online coursework/programs. We examine this protocol from a theoretical perspective of the Social Shaping of Technology in order to highlight the importance of viewing video conferencing as a social and technical practice.

Keywords: Academic integrity, Online education, Videoconferencing, Google Hangouts, Social shaping of technology

1. INTRODUCTION

For many years, scholars interested in university-based learning and teaching have investigated topics under the umbrella category of academic integrity (Aasheim et al., 2012; Faidhi and Robinson, 1987). More recently, research studies focused on online learning within higher education have been published (Bliemel and Ali-Hassan, 2014; Jahng, Krug, and Zhang, 2007), and since 2008, the U.S. government has required that all distance education courses/programs have methods in place for verifying that the student registered for the course is the one actually taking the course and receiving the academic credit (Higher Education Opportunity Act [HEOA]-Public Law 110-315). This context is the backdrop for the growth of software products and services designed to increase academic integrity compliance, including plagiarism detection software, remote proctoring devices, and browser lockdown

technology. Such services are sold along two lines: identity management and plagiarism detection – in other words, determining the student is who they say they are and that they are doing their own work. At the same time, approaches aimed to prevent academic dishonesty before it starts are developed internally by online programs and courses. As such, there are calls for further investigation into effective strategies for decreasing the risks of academic dishonesty that are inherent to so-called virtual environments (Grijalva, Nowell, and Kerkvliet, 2006).

In our School of Business at a large urban university, we have chosen to address academic integrity issues through an inexpensive technology approach that deploys video conferencing in an otherwise fully online and asynchronous degree program. The program was sponsored by a larger institutional initiative which called for "reThinking" the institution by designing programs that are flexible, student-centric, and that apply technology to pedagogy. The School of Business was awarded a $296,000 grant to build a fully-online degree completion program (junior and senior years of the business degree). To be as flexible as possible, the program was designed for students who may never be able to come to campus. Inspired by the work of Richard Light (2001), which showed the most powerful undergraduate experiences include small group "face time" with faculty, the new program integrated the mandatory use of regular, small-group video conferencing in all courses. While some have suggested that synchronous elements in an online course are counter-intuitive and antithetical to the distance learning ideas so often associated with MOOCs, recent commentary on highly regarded and innovative online programs shows evidence of a shift toward such synchronous, video-based elements in online courses, in large part to address issues of academic integrity and high level student engagement with course material. For example, at the University of North Texas, fully online degrees in business now play a more significant role moving forward in that they are placing a greater emphasis on video strategies (Hayes, 2016).

Additionally, Minerva, one of the most innovative and forward thinking, fully online schools in the U.S., showcases "a proprietary online platform developed to apply pedagogical practices that have been studied and vetted by one of the world's foremost psychologists, a former Harvard dean named Stephen M. Kosslyn" and also uses short (45-minute) synchronous video conferencing with faculty and small groups of students to explore topics and solicit succinct discussions and interactive pop quizzes around course content (Wood, 2014). What is the value of such sessions? Wood (2014), an author for *The Atlantic*, had the opportunity to visit Minerva and test the online platform. He describes this experience as fast-paced and intense, or not at all like what he had experienced in "an ordinary undergraduate seminar." Wood (2014) expands on his experience, saying,

> In an ordinary undergraduate seminar, this might have been an occasion for timid silence, until the class's biggest loudmouth or most caffeinated student ventured a guess. But the Minerva class extended no refuge for the timid, nor privilege for the garrulous. Within seconds, every student had to provide an answer, and (the instructor) displayed our

choices so that we could be called upon to defend them.

The ability to ensure that each student, regardless of personality type or propensity to talk or be quiet, meets the same demands by the instructor—or what Woods (2014) refers to as "a continuous period of forced engagement" where "I was forced, in effect, to learn" —is a level of rigor that produces great value in terms of authenticating and verifying that knowledge is being gained and that scholarly insights, conclusions, and connections can be made in a live environment on demand. This description illustrates the multiple roles video conferencing can play in fully online degree programs or individual courses. Students must keep up on course material, and these face-to-face video conference opportunities reveal rather quickly a student who is not familiar with the content of the course.

While such innovations command the attention of online program developers (e.g., administrators), faculty in post-secondary education are generally the front-line implementers of the online course work. He, Xu, and Kruck (2014) point to the growth of online coursework in information systems/information technology and the movement from offering courses to offering entire programs online. In their article, the authors review research on the differences between face-to-face and online coursework and point out that students expect excellent course design in online courses to compensate for the lack of face-to-face interaction. Most importantly, they highlight the role faculty play in online course delivery and articulate Tu and McIsaac's (2002) notion that the construct of "social presence" is an "important factor in improving instructional effectiveness and building a sense of community" (He, Xu, and Kruck, 2014, p. 103). Therefore, while course design, including the application of a variety of tools for online engagement, is an essential component of online course/program success, faculty training and development in the skills for online teaching will be critical to a program's or course's success as well.

Next we consider the literature on academic integrity in online courses, and we then introduce the theoretical framing of social shaping of technology as the lens through which we explain how the video conferences help to address problems in this domain. After an overview of the online program and its required conferencing protocol, we present findings related to the effectiveness of this technology for preventing academic dishonesty in online courses. Next, we discuss best practices and areas to consider prior to implementing a video conferencing protocol. We conclude with challenges and opportunities, based on our four years of experience in using this technology, in our fully online courses.

2. LITERATURE REVIEW

Why do members of organizations engage in unethical behavior? Lawrence Kohlberg's classic work considers stages of moral judgement (Kohlberg and Hersh, 1977) as a key individual variable in ethical behavior. According to Kohlberg's long-standing model, organizational members are at varying stages of their own moral judgement when facing an ethical decision, such as whether or not to cheat in

a course. The three stages are: a preconventional stage characterized by a focus on the likelihood of being punished and the instrumentality of the action for one's own interest, a conventional stage that focuses on being perceived as "good" and abiding by laws, and the postconventional, or most mature, stage. In the postconventional stage, the individual may be considering the larger social contract or the value of adhering to universal principles of ethics.

Another internal characteristic in ethical decision-making includes attitudes about fairness. In the field of information systems and, specifically, on the ethical issue of software piracy, Douglas, Cronan, and Behel (2007) considered internal perceptions of fairness (equity theory) as a deterrent to software piracy with the following results. Where equity is defined as judgments about reciprocal fairness, procedural fairness, and distributive fairness, reciprocal and procedural fairness significantly influenced software piracy behavior. When it comes to deciding whether or not to steal software, conversations about fairness make a difference. The authors maintain "efforts should be concentrated to promote fairness via pricing and advertisements" about the software (p. 509).

Other research investigates external influences on ethical behavior that serve as a psychological "prime," such as observing someone else cheat or simply mentioning the notion of cheating prior to an opportunity for cheating (Gino, Ayal, and Ariely, 2009). Both conditions result in a higher likelihood of the observer engaging in cheating behavior, demonstrating that "unethicality does not depend on the simple calculations of cost-benefit analysis, but rather depends on the social norms implied by the dishonesty of others and also on the saliency of dishonesty" (p. 393). Similar external conditions are central to many models of ethical behavior, or research on intentions to engage in unethical behavior, and often demonstrate that strong structural or organizational deterrents against unethical behavior are key in promoting ethical behavior. Banerjee, Cronan, and Jones (1996) specifically studied IT professionals using organizational scenarios common to that profession (e.g., overdrawn account) and found that ethical behavior intentions varied by scenario, leading them to a model of situational ethics and a call for stronger ethics policies or conduct codes in organizations.

This brief overview points to the value of considering external or situational conditions for promoting ethical behavior as well as offering opportunities for individual students to perform with integrity and develop their moral identity. In particular, it leads researchers in academic integrity to consider the value of creating structures that promote social norms about academic integrity, model academic integrity, offer conditions where cheating is very difficult to accomplish, and perhaps even assist students in developing their own moral identity through honest academic activity (in this case, engage the students in video conferences in which they actively represent their own work as a mandatory component of an online course).

More specific to the context of this study, existing literature on academic integrity in higher education contexts has, as expected, focused on traditional classroom environments until recently when online courses have been the focus of a subset of this focal area. Next, we highlight a number of studies that draw on traditional and online contexts that are particularly helpful for understanding our field and upon which we hope to extend the contribution.

In a frequently cited article, McCabe, Trevino, and Butterfield (2001) reviewed a decade of research on undergraduate student cheating in academic institutions of higher learning, both large and small. They found that cheating is prevalent and that some forms of cheating have increased dramatically in the last 30 years. Of particular interest to this study, they posit that cheating is more likely in large classes or where there is no "personal relationship" between the instructor and student. According to McCabe, Trevino, and Butterfield (2001), cheating is less likely under conditions where faculty and students have a personal connection. Creating such connections can be a challenge in online course environments.

In a later study, Brent and Atkisson (2011) examine student responses to the question, ''what circumstances, if any, could make cheating justified?'' Students offered justifications for cheating that fall into two categories: rational decision-making and post-hoc rationalization. Their paper maintains that policies designed to promote academic integrity must address both of these. The rational decision-making view suggests an implicit contract between instructor and student that offers opportunities for reducing cheating by clarifying expectations for students and by designing courses that live up to the instructor's side of that contract. The rationalizing view reinforces the need for consistent enforcement of clear standards. Their article makes the point that course designers and faculty have responsibility for structuring courses to mitigate cheating and imply the value of a consistent application of such methods.

In the area of academic integrity and online coursework specifically, Palloff and Pratt (2009) recommend the following strategies to deal with issues of plagiarism and cheating in online coursework: multiple assignments and personal, reflective assignments. They maintain a student may hire another person to impersonate them for one exam or assignment, but they suggest it is less likely that a student would use such a strategy for an entire course. Therefore, they recommend having many small assignments throughout a term. Palloff and Pratt maintain that when assignments require personal reflection and experience, plagiarism is less likely. This strategy relies on an assumption that students will not systematically engage an impersonator for all their assignments throughout an entire term. Olt (2002) offers four similar strategies for addressing cheating in online course assessment: 1) Utilize a log-in system offered to students at the point of the assessment and change these credentials for each assessment; 2) Ask "mastery-type" questions in the assessments that may also require students to reference personal experience and that focus on process more than final product; 3) Rotate the curriculum and use project-based assessments that require creativity; and 4) Address academic integrity directly with students, including use of a "letter to students" emphasizing positive aspects of integrity rather than just focusing on cheating. These recommendations may work in many courses but may not always be possible.

Academic dishonesty is an issue of concern for teachers, students, and institutions of higher education. Because students and faculty do not interact directly in most online

coursework, it is often perceived that cheating will be more abundant in these classes. However, in a survey administered to students who had experience with online coursework Grijalva et al. (2006) found that academic dishonesty in online classes is no more pervasive than in traditional classrooms. Nevertheless, Tsai (2016) proposes that the notion that online environments offer "easier opportunities for academic misconduct" (p. 387) still exists and begs the question, how do we mitigate cheating in online courses?

3. RESEARCH DESIGN & THEORETICAL FRAMING

We conducted a qualitative case study underpinned by an interpretive epistemology (Klein and Myers, 1999; Walsham, 1993) that seeks to understand the role of synchronous video conferences from the perspectives of those taking part in an online course (students and faculty), with the objective of contributing to the IS education literature, by extending our understanding of whether and how academic integrity may be enhanced through video conferences. The research is designed to seek "validity…not [from] the representativeness of the case in a statistical sense, but on the plausibility and cogency of the logical reasoning used in describing the results and in drawing conclusions from them" (Walsham, 1993, p. 15). Collecting diverse forms of data helped us to seek multiple interpretations to improve the "plausibility and cogency of our interpretive accounts" (Klein and Myers, 1999). To this end, primary data came from surveys and interviews with students and instructors who have participated in at least one online course.

The study was conducted at our business school, which has been offering fully online courses since 2012, including degree completion pathways for two majors: Management and Leadership and Supply and Logistics. Between 2012 and Spring 2016, enrollment in online courses totaled 2,957 undergraduate students, including a mix of students who are fully online and those who take a mix of formats from campus-based, hybrid, and fully online courses. Fifty-three percent of our students identify as male, and two percent do not identify as either male or female. Most of our students transfer in at the junior year and are residents of the state. The average age of the student population is 27, and more than 70% work while attending school. International students compose 10.5% of business undergraduates.

A purposive sample was created from the population of all student course evaluations in the School of Business at our university that are collected regularly in our normal operations. From this population of surveys, those from online courses were selected. Then, we narrowed the surveys to those having qualitative comments related to the video conferencing feature of the course. The sample was collected through a search on the course section field which can be limited for online; we transcribed all qualitative comments from these course evaluations. Of those students enrolled in an online course, 41% completed an anonymous evaluation (1,201) and this formed our initial sample. However, only 65% of those evaluations included qualitative comments and 420 were later excluded from the sample because of a lack of comments. This comprised the student input for this study. For faculty input, 40 faculty taught at least one course online

in the School of Business, and 87.5% responded to a short survey that included Likert-scale questions and open-ended responses. Both the faculty survey and the student course evaluations were sent via email with a link to a Qualtrics survey followed by multiple email reminders.

The qualitative comments from faculty and students were converted into two separate text files and imported into a web-based qualitative data analysis application (Dedoose) that we used to code and organize the data. In the student file, segments of text were coded with the word "video" in order to collect content related to the synchronous conference component of the course. All text segments with this code were then saved in a text file as the final qualitative data sample of 88 student comments. All 35 faculty made comments on video-conferencing and so our text file was set for preliminary analysis. We read these data files in their entirety to understand the themes that were present for 1) faculty, 2) students, and 3) both combined. We devised a number of categories and coded the segments with these themes. This list of inductively generated themes informed our review of academic integrity and video conference in online education. Our analysis is aimed at being faithful to the participants' explanations and understandings, while remaining aware of the influence of previous studies on the themes generated. This analysis was also supplemented with the semi-structured interviews with faculty (9) and students (30). Our interpretation of the issues in the literature, coupled with our data-generated themes and interview data, resulted in three deductive analytical codes around which our findings are organized, as shown in Table 1.

Qualitative Data Categories	Analytical Code
Relationship building	Rapport
Face-to-face interactions	
Exchange of ideas	
Clear-up misunderstanding	
Student understanding	Capacity
Engagement	
Grading	
Scheduling–flexibility or difficulty	Authentication
Technical issues	
Authentication	

Table 1: Deductive Analytical Codes

Given the importance of looking at how the video conferences are actually employed in courses over time, we elected to analyze our data using the Social Shaping of Technology (SST) framework. The scholarly literature on academic integrity in higher education courses demonstrates that all course modalities (classroom-based, hybrid, online) suffer from issues of academic integrity and that behavioral and structural/technological components must be considered if an environment of authentic learning and academic honesty is to exist. As such, we draw on theoretical ideas from SST writings that emphasize the feedback loop between technology design and use (Bijker, Hughes, and

Pinch., 1987; Bijker and Law, 1994; SØrensen, 2002). From this theoretical perspective, technology as an artifact is useless. Rather, it is in the implementation and use of that technology, by humans, that its usefulness is evaluated. For example, in our study the video conferencing technology itself being added to a class provides no benefit to course design and student learning. Rather, it is the effective application of video conferencing technology through systematic deployment of a conferencing protocol that is useful. SST is most interested in the mutually constitutive nature of social beings and technological design over time.

In contrast, the mindset of technological determinism interprets the mere presence of technology as leading to the achievement of intended social goals, and only those goals. In our case, video conferencing technology in the form of Google Hangouts decreases academic dishonesty in online courses regardless of how it is implemented. Common sense tells us that this is a simplistic view of technology use, but IT fads persist and software applications are seen as a silver bullet for a variety of behavioral challenges (e.g., ERP, CRM).

Our SST focus means that we emphasize the protocol and practices undertaken by the students and instructors who utilize video conferences in the online program. We are then able to see the ways in which social and technical aspects of a system (in this case a course) must work together and reflexively shape each other if the goal of increased academic honesty is to be achieved. In the next section, we provide an overview of the online program and then describe the required conferencing protocol and several adaptations that enable particular types of student learning.

4. SYNCHRONOUS VIDEO CONFERENCES

The video conference protocol we describe here is motivated by the issues raised in the literature and also by the program designers' aspirations to create a consistent approach to academic integrity and student satisfaction with the new fully online program. Since each faculty member is a free agent to perform as an instructor based on their own experience and expertise, identifying shared pedagogical techniques that can create meaningful connections and such dialogue has been a top pursuit of the program. Although each instructor may approach the video conferences with a somewhat idiosyncratic format, the overarching goals of authenticating and demonstrating knowledge in a way that promotes interest and engagement on the part of the students are key to the success and satisfaction of the scholars who participate. The role of faculty training and development is essential to help onboard and acclimate faculty to the video conference processes and can create some baseline strategies across the program that help both students and faculty to feel connected, empowered, and prepared for the pace and rigor of these online conferences.

A specific strategy currently being employed in the program's undergraduate video conferences is a unique application of the Cloze Procedure (Cloze Procedure, n.d.).

The cloze procedure is an informal tool for assessing students' comprehension. Teachers use the cloze procedure to gather information about readers'

abilities to deal with the content and structure of texts they are reading. Teachers construct a cloze passage by taking an excerpt from a book – a story, an informational book, or a content-area textbook – that students have read

and then deleting sections of the passage. In this case, faculty are using the student's own work. By reviewing what the student has submitted prior to the video conference session, the instructor can restate a portion of the students writing or ideas, yet the faculty statement is missing important pieces, words, phrases, or points from the scholar's submitted work. The student is then called upon to showcase their work in the video conference with their professor and peers, and is requested to 'fill in the blanks' of the statements offered by faculty. Students use their knowledge of their own work to successfully predict the missing ideas or phrases in the text passage, and they are welcome to expand their ideas and discuss the material with their peers.

This method is often applied in the first round of questions in a conference, and where there is academic integrity, this approach can increase the student's comfort level, and help to build the confidence of the students as they discuss their own work. Where the student is unable to speak to their own work, the faculty are able to take the concerns out of the group video conferencing arena at a later time and meet with the student one-on-one to assess comprehension and content. By employing specific techniques that focus on comprehension, this retrofitted cloze procedure can reinforce whether or not students are crafting their own materials and the depth to which they understand and can speak about them. We required student participation in at least four synchronous video conferences over the course of the term as a minimum requirement for passing any fully online course (see Table 2). These conferences include the instructor and a small group of student peers ranging from two to six students

While synchronous video conferences create some challenges in implementation, we have found they address concerns about academic integrity in three important ways. First, they assist students in keeping up on the course material which may mitigate the temptation to cheat. Second, they provide important checks to avoid impersonation schemes that are a common concern with online coursework. Third, these video conferences can help establish a personal connection between professors, students, and student peers (rapport) which may reduce the desire to cheat in a course. In the first week of the term, students are required to complete a technology test with a program administrator to ensure their hardware is sufficient for the video conferences that follow. The video conferences with faculty begin in weeks two and three of the term. Faculty time is a concern, and the rationale for group size and number of conferences per term is that faculty: 1) have no more time in video conferences than they would otherwise spend in classroom lecture in a ground campus course (e.g., four hours/week) and 2) have the opportunity to offer "make up conferences" in week ten within the four-hour per week maximum expectation on faculty time.

Week 1	Weeks 2 & 3	Weeks 4 & 5	Weeks 6 & 7	Weeks 8 & 9	Week 10
TEST conference (administered by technology support administrator)	30-min conferences with each student group One conference per student and approximately 8 to 10 meetings for faculty over 2 weeks.	30-min conferences with each student group One conference per student and approximately 8 to 10 meetings for faculty over 2 weeks.	30-min conferences with each student group One conference per student and approximately 8 to 10 meetings for faculty over 2 weeks.	30-min conferences with each student group One conference per student and approximately 8 to 10 meetings for faculty over 2 weeks.	Makeup conferences

Table 2: Distribution of Video Conferences across the 10-week Term

In addition, the importance of spending time training students and faculty in the technology aspects of the video conferences cannot be underestimated as once they master the technology, the focus shifts to the pedagogical goals of video conferences.

4.1 Overview of Conference Protocol

This subsection describes the set of guidelines (protocol) used in our program to promote consistency and effective implementation of the conferences. Faculty training in video conference implementation has been an important factor in the success of this tool. It supports consistency for faculty and students, it helps faculty avoid inefficiencies resulting in "video conference fatigue," and this training helps ensure the video conferences result in effective use of time for students and faculty. Consistency reduces the need for continuous technological or pedagogical support after a front-end investment in training. In cases of academic misconduct, consistency in the protocol facilitates due process if students are referred to the Dean of Students Office for investigation.

Figure 1 shows an example of the video conference schedule from the student perspective for a particular course. The first step for faculty is to determine how many conferences must be scheduled during each interval (course enrollment number of 35-45 students divided by desired group size of four or five students) and then select a range of days and times that accommodates working students (lunch times, evenings, early mornings, weekends, for example). Students then self-enroll in the learning management system for the series of conferences they will attend. A prominent note in each sign-up area reminds students that they must attend as scheduled or they risk failing the course, as makeup times are not guaranteed and attendance at four video conferences is a requirement for passing the course. Also, students are not made aware of the opportunity for Week 10 makeup conferences at the beginning of the term because they need to feel urgency about showing up at the times they schedule.

Faculty prepare for the video conferences by reviewing student work submitted thus far and formulating some general questions about the course material up to the point of the conference. Conferences should not be specifically linked to any particular assignment and they should not be lectures. This is because the conferences will occur for students across a two-week period, or in some cases, a student may be making up a conference in week ten. Linking conference content to specific course assignments is not advised as it makes it complicated to perform make-up conferences later in the term.

Figure 1: Sample Sign-Up Times for Video Conferences

If students do not attend their scheduled video conference, faculty cease grading course assignments until the student makes up the video conference or attends

successfully in the next time block (and schedules a makeup for the missed conference). We find this extremely important because it alerts the student to the gravity of the situation (that we stand by the rule that they cannot pass the class without attending four conferences) and avoids the problem of getting to the end of the term with all work submitted but no video conferences completed. We are honest with students that one purpose of the video conferences is for us to see the connection between their submitted work and their performance in the video conference. We explain that we therefore only grade student work when video conferences are also up-to-date. This small detail has been very useful in motivating students to urgently join in on an existing conference, schedule a makeup, and also not miss any future scheduled conferences.

We suggest that faculty schedule conferences with 15 minutes between each so that they can quickly summarize comments and assign immediate scores for the conference at its close. Figure 2 below shows an example of a professor's notes made during the conference which are then summarized in the grading area of the online learning platform. These notes can also provide documentation in a case of academic dishonesty.
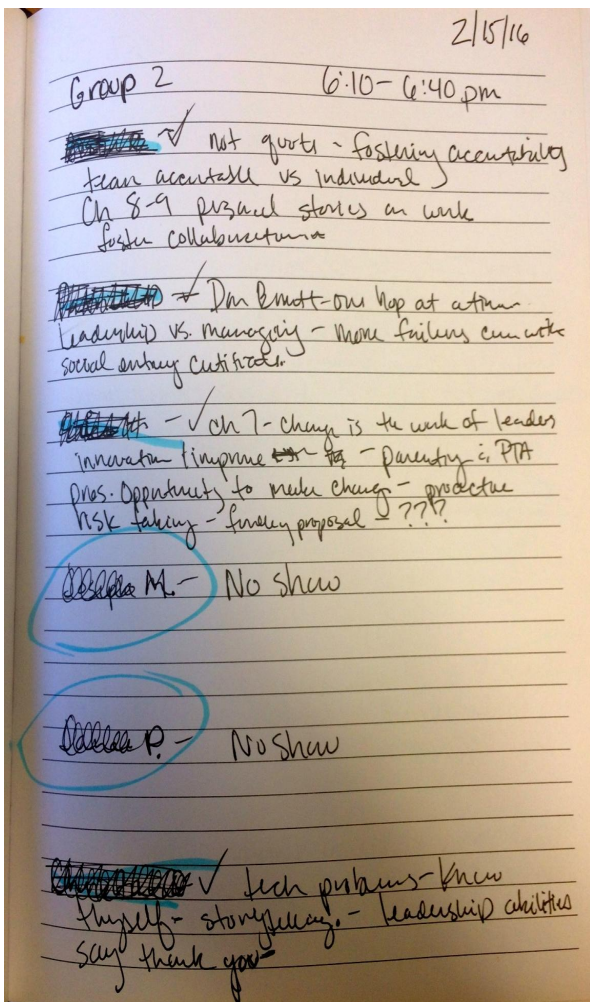

Figure 2: Sample Notetaking

Figure 3 shows a typical grading rubric that may be customized somewhat by individual faculty. The main aspects of all video conference grading rubrics are: 1) showed up on time with technology working correctly (prepared); 2) answered questions about course content with ease (quality of comments); 3) remained present and supportive of peers (listening); and 4) spoke up regularly (participation).

We train our faculty to think of the video conferences in three stages. Stage one is an oral quiz. The professor poses a content question from recent course material to each student. Students are encouraged to bring notes from reading and watching video lectures, but should be able to answer most questions without their notes. We believe this accountability to course material in an incremental fashion over the term may mitigate the pressure students feel to cheat, as our past experience shows students who suddenly engage in the course material for the first time in week five of a 10-week term struggle to meet the course requirements successfully. The second stage usually involves discussions of students' submitted work. This is where students can inspire confidence in faculty that their work is their own. Sample questions follow:

> *Harry, you earned full credit on the quiz about [business plans]. Tell us a bit about [business plans].*
>
> *Sally, I'm holding the [paper] you submitted last week here in my hand. I really love the way you [conducted your field interviews]. Can you describe this to the other students?*

The final part of the session offers the group a chance to "release tension," a classic phase in small group process literature (Mudrack and Farrell, 1995). The faculty member can move into a conversation with students during which they may apply course material by sharing their own work or personal experience with concepts from the course. In this last stage a student may also bring up their own questions or ideas. Sometimes in the last ten minutes of conferences participants call over their family pet to the webcam or show the group their office. The idea of the final stage of the video conference is to create and enjoy the learning community, release the tension from the more intense first 20 minutes, and leave a "feel good" sense about heading into the next stage of work in the course. This supports the establishment of rapport in the group.

	Bare Minimum	Better	Excellent
Frequency Participation 10 Points	Student responds to questions but does not initiate contribution.	Student initiates contribution occasionally.	Student initiates contribution throughout the session.
Quality of comments 10 Points	Comments are uninformative and generalized, lack understanding of terms and are not relevant to the discussion. Student can't answer basic questions about the course or his/her work.	Comments are somewhat reflective and mostly use appropriate terminology. Occasionally too general or not relevant. Student is able to talk fairly confidently about course material and his/her work (turned in or pending).	Comments are insightful and relevant; use appropriate terminology and thoughtful criticisms or contributions. Student is able to converse easily about course material up to this point, and about his/her own work.
Listening Skills 10 Points	Student is often inattentive and multi-tasking during session. Occasionally makes disruptive comments when others are speaking	Student is mostly attentive when others are speaking as indicated by comments that reflect an understanding of the discussion	Student listens attentively when others present, as indicated by visual and verbal responses and comments that build on other student's remarks.
On time and prepared 5 Points	Student logs in more than 5 minutes late and is unprepared for discussion.	Student logs in within 5 minutes of start time and is somewhat prepared to discuss projects and topics.	Student logs in to chat session ahead of time and is prepared for discussion of current projects, concepts and topics.

ROUND ROBIN QUESTION AND ANSWER

Day	Time	Chat #1 Weeks 2-3
MON 1	5:00-5:30 PM	April 4
2	5:45-6:15 PM	April 4
3	6:15-7:00 PM	April 4

Figure 3: Rubric with Note Format Below

To promote professionalism and help faculty to avoid "video conference fatigue," the protocol requires faculty to stop conferences at the 30-minute mark. We recommend that faculty spend the next ten to fifteen minutes writing feedback and recording grades before launching the next conference. As such, we often recommend a conference schedule that looks like this: Mondays 6:00-6:30 pm, 6:45-7:15 pm, etc. We recommend behavioral feedback that promotes improvement, e.g., "in the next video conference, be sure to speak up at least three times." The sample feedback provided below is given to all faculty as part of the protocol.

Harry, great job showing up on time to the conference. You demonstrated deep connection to the course material and shared with the group the gist of the paper you submitted last week. Thanks for your engagement through the entire 30 minutes and also for your strong demonstration of listening to others. Sally seemed very grateful about an idea for her project. Harry, great job on this conference on 10/31 at 10:30 am. Keep up the good work!

This feedback represents what a student who earned full points for their participation in a video conference might receive. In the sample feedback below, the student is "at risk" and faculty will want to review her work carefully before the next conference as well as follow up to ensure she can be more successful in the next conference.

Sally, for full credit, be sure in future conferences to come a few minutes early so you don't risk being late. You were about 5 minutes late to today's chat (10/31). It can be challenging to be put on the spot with the course questions, but you'll want to bring notes, read ahead, and watch all lecture videos so that when asked, you can provide an answer to questions like 'What did you find most interesting in the readings for this week?' Excellent job discussing your project submission and sharing a problem you had with a research source. Be sure to come prepared to discuss concepts from this course. While the concept of flexibility is interesting, it isn't something that is in our reading for this class. For the next conference, be sure you are prepared and

can demonstrate a strong connection to the course material up to this point.

If a student misses the video conference, we recommend language like the following in the grading area where student grades and comments are available via the online learning platform:

I am sorry you missed our scheduled video conference. Since these conferences are a requirement for passing this course, I will cease grading future assignments until you have contacted [the program administrator at this email]. Please don't delay in contacting them so we can resume your course work.

This aspect of the video conference protocol releases faculty from responsibility to follow up on student absences, but it does require a program administrator willing to reiterate policy to the student and follow up with the student's decision to remain in the course or withdraw.

We now turn to our findings related to the effectiveness of this technology for preventing academic dishonesty in online courses and discuss best practices and areas to consider prior to implementing a video conferencing protocol.

5. FINDINGS

While these synchronous video conferences involve some labor in implementation, evidence suggests they address academic integrity issues in three important ways. First, they provide a structured space for faculty to be present with students in a face-to-face manner. Second, they provide important checks to avoid impersonation schemes which are a common concern with online coursework, and third, they assist students in keeping up on the course material which may mitigate temptation to cheat. We consider each of these findings below.

5.1 Faculty Presence & Development of Personal Relationships

The first major theme that emerged from the qualitative data analysis was the importance of video conferences for helping to build rapport between the instructor and their students. Faculty cited the ability to develop personal relationships with students and being perceived as more accessible to students as the biggest benefits of the video conferences.

Overall I am a huge advocate of this type of online learning. I have taught in person, traditional online classes, as well as these video conference online classes. I always felt that there was something missing in online learning, and with the video conferences I feel as though the void has been filled. The missing component was the relationship built through interactions beyond email communication. I wholeheartedly feel that this program is a benefit to the online students at PSU. [Survey comments from online instructor]

Video conferences facilitate this personal relationship which is needed in an online course—the presence, communication, and interaction that students want and need in engaging around learning.

Faculty presence in face-to-face video conferences helps connect students to the instructor. Several faculty mentioned how the class sees one another at home, in leisure wear, for example, and also gets insight into bedroom and kitchen décor. The faculty remarked that this creates a warmth and familiarity among the group members.

I see kids run by all the time and that's kind of funny. One time a guy sat down. He was all serious [laugh] and in the background was Michael Jackson [laugh], Off the Wall poster....I saw it because it was right behind his head and I said 'Michael Jackson' and he turned red...Mostly it's just part of it and I don't care. I try to keep it informal so it's not so stressful. [Management faculty member]

While one important aspect of the video conferences is to discuss course material, students perceive video conferences to be an opportunity to develop community just as their professors reported:

I loved the Google Hangout chats. It allowed me to make a personal connection with the professor and my fellow students. [Online Course Evaluation by Student]

I liked that our video chats covered and discussed real life subjects, rather than just quizzing students. [Online Course Evaluation by Student]

My first online class that used Google Hangout to 'meet' my instructor, I really did like that addition. I wish more online classes had this option. [Online Course Evaluation by Student]

The best video chat sessions I have experienced. I have done video chats in 5 other courses, and this was by far the best. First the time slots were varied greatly which allowed everyone to find one that worked comfortably into their schedule. Second, she was very open, friendly, and constructive in the chats. She made it feel more discussional rather than like an oral test as some of my other classes had done. [Online Course Evaluation by Student]

As the student comments above illustrate, adopting a technologically deterministic approach and merely requiring video conferences in all online courses is insufficient to achieve rapport. The students are relating to the human connections that are facilitated through the feedback loop between video technology design and its use by instructors with differing commitment levels and interpretations for use (social shaping of technology). The student notes "I have done video chats in 5 other courses and this was by far the best." As noted earlier, having a protocol and suggesting best practices for running video conferences will be necessary for guiding faculty use so that all faculty can be as successful as possible. It will also be essential to generate faculty

excitement around getting to know their students through this medium.

While it is clear that faculty presence is a key characteristic of student engagement and learning, the relationship between such presence and academic integrity is less obvious. The research shows that cheating is more likely where there is no "personal relationship" between the instructor and student (McCabe et al., 2001), but the mechanisms by which this relationship occurs in online courses and programs is under-investigated. Video conferences will not eliminate cheating on online quizzes and exams, nor will it eliminate the purchasing of papers by students who turn them in as their own. However, they do provide an opportunity for faculty to engage students directly around these potential problems. The following quote from the Director of Student Conduct highlights the importance of faculty presence for starting conversations with online students about issues of academic integrity:

I love the idea of getting to know who the students are and how to support them even when it comes to issues around academic integrity. [Video conferences provide] the ability to better discern the capacity of students, the authenticity of their work, and the ease of engaging around issues that come up around academic integrity because that relationship is there and that communication is there versus a stranger emailing or doing something else that has more distance attached to it. I'm not just talking just physical but the <u>transactional distance is lessened</u> when you have video conference and you only have to do a <u>little bit</u> and it goes a <u>long</u> way.

The video conferencing through Google Hangouts provides a platform for connection and check-ins between student and teacher. Google Hangouts can be easily accessed through the enterprise email system at our institution and is used for many additional purposes such as online office hours or quick meetings with students. Using technology to create connection is one of the paradoxes of online teaching – through such visual technology we may bring some of the classroom community experience into the computers from which people take the course.

5.2 Authentication of Work
Fundamentally, instructors of online courses must be able to authenticate work if the program is to have a reputation for quality. And for students to demonstrate scholarly capacity in online courses beyond just written work, video conferences offer the opportunity for such demonstration. Online courses in the School of Business have a higher withdrawal rate than the ground campus equivalents, and the program administrators attribute this to students who, upon reviewing the syllabus, realize the course will be quite demanding and will require regular video conference sessions throughout the term. In this way, one might say that the technology itself does mitigate cheating. We argue it is a bit more nuanced. The effective protocol and its implementation by diligent faculty is likely to encourage dishonest students to drop the course. This is not a case of technological determinism where the mere presence of video

chats in a course leads to positive social outcomes. As Brent and Atkisson (2011) note, online course designers and faculty have responsibility for structuring courses to mitigate cheating. Video conferences are part of such a structure. As noted by the Student Conduct director:

For students who are outright having someone else purport to be them online, it removes some of that opportunity to engage in academic integrity and misconduct [and] in that way it is preventative. The secondary aspect of the prevention is the relationship that students are less likely, in my opinion, to engage in academic misconduct if they have a relationship with the faculty. [Interview with Director of Student Conduct]

Video conferences do not address the issue of students who pay to have another enroll and complete the entire course on their behalf. However, our faculty survey respondents overwhelmingly reported that they felt video conferencing was effective for ensuring the work students submit is completed by the actual student enrolled in the class (89%, 1 non-response, 2 undecided). This perception is an important part of the social shaping of technology perspective, which argues that it is human action and attitudes interacting with technology that impacts future use.

Student comments from course evaluations describe some of the academic activity in the video conferences and demonstrate how this vehicle supports a student's ability to demonstrate academic integrity, develop their scholarly identity, and work toward academic goals. These comments point in particular to the value of video conferences to tie the academic work presented via asynchronous methods (e.g., reading and video lecture) to real-world applications, an important learning goal for IS/IT professionals and Business Schools:

The video chats are also very effective, as he gives good feedback. The video conferences were also great to learn vicariously through other students about different workplace issues and actions. Prof. conducted really good conversations in those conferences through quality open-ended questions that allowed us all to contribute to the discussions. [Online Course Evaluation by Student]

It was very helpful to have a face-to-face with the instructor and a select few peers every other week. Did a great job bringing real-world examples into class discussions. [Online Course Evaluation by Student]

The students show in these illustrative quotations that they understand the protocol for participating in video conferences and are prepared to authenticate their learning.

5.3 Assessing Student Capacity at Regular Intervals
The research shows that, in online environments, it is important to assess student capacity at regular intervals by giving multiple assignments and personal, reflective assignments throughout a term, and that this makes students

less likely to plagiarize (Olt 2002; Paloff and Pratt 2009). The video conference protocol is designed in exactly this way where students are asked to reflect on recent course assignments and/or topics from readings that were most compelling to them. The majority of faculty agree that this approach is effective; 83% of survey respondents reported that video conferences effectively help students in keeping up on the course material and 78% felt these conferences effectively alerted students when they don't know the course material and are not on track.

We argue that supporting academic honesty in online courses and programs is most effective when the methods employed are primarily designed for effective student learning. Regular video conferences assess student capacity and support the reduction of academic misconduct. Further, these conferences support instructor grading:

I absolutely think the video conferences help reduce cheating. I get to know the students through the video conferences as well as their submitted work. Instead of grading assignments on robot mode one after another, I can link the student to their work as a result of having spoken with them face-to-face. This allows me to better follow their work throughout the term and spot any inconsistencies since there is a face to the name on the work. [Faculty survey response]

Video conferences ask us to be mindful of the spurious argument that "online education" and "distance learning" must be completely asynchronous to be authentically categorized as such. Instead, the same technology that enables fully-online courses and programs to exist also allows us to connect at designated times, for specific purposes that may be far more efficient and beneficial than text-based discussion boards, and email messages.

However, not all students appreciated the "oral exam" component of the video conferences and felt they could offer more evidence of their capacity in a different fashion:

The video conferences were a nice addition. My only complaint would be on the Jeopardy style questioning in the conferences. I feel like answering only one random question per chapter does not accurately show familiarity with the material. [Online Course Evaluation by Student]

As expected from the SST perspective, we found as faculty became more experienced with the video conference protocol and technology, they were able to more naturally incorporate the content questions posed to students.

5.4 A Demonstration of the Process for Using Video Conferences to Address Academic Integrity
The following story demonstrates the power and nuance of using video conferences as an authentication tool. It shows the importance of an integrated process that uses evidence from the conferences as a trigger for action, but then accesses multiple sources of information and approaches student integrity issues with sensitivity and an open mind.

The following is a transcription of an interview with one of the online faculty in our program.

*So in the Google Hangouts, his English was very broken. It was difficult for him to discuss the concepts and the topics in a way that flowed or made sense. So I had a **very** hard time discerning his level of understanding of the content. And then at the same time he was turning in work, he was turning in papers and discussions and projects that were much more fluent, their English and all that. And so I felt like there was a discrepancy. Yeah. And even in emails to me were very broken English. And so it hit some flags for me that the work I'm reading that he's turning in **does not match what I'm seeing in the Hangouts** as well as our interaction over email. And I became concerned that there was an academic integrity situation going on, that work was being turned in that wasn't wholly his work. And **so I reached out to the student**, and he got very concerned...the wonderful outcome is that he was **not** cheating, he was going to the writing center. Like **several days a week**, sitting down with someone to help him work through, and provide work that had higher quality than he felt he could do on his own with his English barriers...**There's a level of concern and caring for the students**, and thankfully we were able to support him. I was able to help adapt the Hangout sessions, he was better with writing English and speaking English. So he would provide his responses, he would write his responses in a text box in the video conference session. **And so it provided us a way to find how we could communicate together well and successfully. As well as maintain the integrity of the program, the integrity of the work.** And so he, **wasn't** cheating. That wasn't an issue, but at the same time I feel like there were a lot of wins in that situation. I also think he felt supported, by not just myself, but the program in a way that the average student might never know they're being supported.* [emphasis added]

In this scenario, had the student been cheating, the faculty member would not have known about it in the absence of video chats and regular check-points. The personal connection allowed the faculty member to open up a conversation about the academic integrity issue, and the faculty member was ultimately able to authenticate that the work handed in was being done by the enrolled student. The video conferences provided multiple opportunities for the faculty member to identify, address, and resolve issues of academic integrity.

As Grijalva, Nowell, and Kerkvliet (2006) note, the issues of academic dishonesty are just as pervasive in traditional classrooms as online courses. Similarly, the importance of instructors connecting with students face-to-face during regular video conferences reminds us that a shift to the online modality of course delivery has many more things in common with traditional ground campus courses that might be obvious at first. Keeping this at the forefront of online course and program design is our first recommended

best practice for effectively utilizing video conferences in online courses and programs.

6. BEST PRACTICES

The following set of best practices provide important markers for those embarking on online course/program development (see Table 3). Just as landmarks on a map provide touchstones for orienting oneself, these recommendations are meant to help start discussions and reflective practice. They are not meant as a list of success factors or mandatory requirements. As Walstrom (2014) states, such studies are "limited by the best practices and learning management systems available now. Better practices and improved learning management systems will change perceptions" in the future (p. 145). First, as stated above, look for the similarities rather than differences between online and classroom-based courses. Doing so will carry tried-and-tested tenets forward into online distance education contexts, rather than reinventing the wheel. In addition, be cautious when implementing academic integrity functions that do not have meaningful learning outcomes attached. As SST reminds us, people will always find a way to work around a technology if they are so motivated. Instead of relying on technology alone (like ID checking, public record entry), consider building engagement with the course content and the instructor to deter cheating.

Video conference content should be independent of assignments and teamwork to allow for ultimate flexibility in when they occur and to keep the focus on "inspiring confidence in the fact that the student work submitted is the work of that student." Further, video conferences should not be a time for the instructor to lecture. That is an inefficient use of time and students should be doing most of the speaking during a conference. Lectures should be created in thoughtful ways for asynchronous consumption. Faculty who lecture to only four students at a time in a video conference will quickly grow weary of online teaching and will also miss out on the opportunities for hearing (and developing) the student voice through active student participation in the conferences. Faculty must be trained in the technology and model best use of technology (i.e., situate themselves in optimal settings for the video conference). Additionally, adding more than five students to one video conference session diminishes the effectiveness of the conference. One student comment demonstrates frustration with a new online faculty member's lack of such optimization:

> *Her video chats are always freezing up, she usually has way more students in the chat than the chat can handle. [Online Course Evaluation by Student]*

Table 3 lists the best practices in summary form for using video conferences in fully online courses. This list is intended to serve as a catalyst for conversation about how to use video conferences at other institutions and in other contexts, rather than a comprehensive prescription for all contexts.

Look for the similarities between online and classroom-based courses when designing.
Be cautious when implementing academic integrity functions that do not have meaningful learning outcomes attached.
Although course assignments may be referred to within authentication contexts, the video conference content should be independent of the timeline of assignments and teamwork to allow for ultimate flexibility.
Keep the focus on "inspiring confidence in the fact that the student work submitted is the work of that student."
Do not use video conferences as a time for lecture; let students do the majority of the talking.
Cease grading student work when they miss a conference until the student has made up the missed conference or attended the subsequently scheduled conference.
Video conferences can be conducted in three parts: oral quiz, focus on student work, and a kind of fun "tension release" where students share their own experiences.
There must be standard practices and protocols across courses in a program.
Missed appointment policies should be consistent across the program with opportunities for faculty and student makeups within reason.
Faculty should only schedule the number of video conferences per week that would amount to the number of in-class teaching hours per week were they teaching in a ground campus course.
Student groups should not exceed 4 students per regular conference assuming conferences are about 30 minutes in length.
Program administrators and school leadership must support instructors with reasonable course caps and be invested in a high quality educational experience for the student.

Table 3: Best Practice for Effective Video Conferences

Programmatically, standard practices across courses are fundamentally important. They help support faculty and enculturate students. For example, missed appointment policies should be consistent across the program with opportunities for faculty and student makeups within reason. Faculty should only schedule the number of video conferences per week that would amount to the number of in-class teaching hours per week were they teaching in a ground campus course. Lastly, student groups should not exceed four students per regular conference; faculty can't observe for integrity when groups are too large and students find large groups "time wasters." It is important that program administrators and school leadership support instructors with reasonable course caps and are invested in a high quality educational experience for the student; otherwise, the introduction and use of video conferences will be little more than "window dressing."

7. CONCLUSIONS

In this paper we have provided an overview of the design and procedure for the video conferencing element of our fully-online degree completion program. Framed by a review of existing literature, we provide detail on the video conference protocol as implemented by online program faculty members. A survey administered to these faculty members, supplemented by semi-structured interviews, provides important insights into how video conferencing can address academic integrity issues in online programs. Our case study found that three main benefits of video conferencing provide opportunities to address academic integrity issues. These benefits include: faculty presence and development of personal relationships, authentication of work, and assessing student progress at regular intervals. Each of these elements is built into the protocol of how to use video conferencing rather than being a property of the video conferencing technology itself. As such, the implementation and use of these video conferences should be seen as situated and changing over time. So too should we view the technology design as emergent over time. The protocol provides multiple opportunities for faculty members to identify and address issues of academic integrity, and our study provides insight into how specifically they do this.

Investigating how students taking online classes and faculty teaching these courses frame their experience enables an examination of both their subjective understandings of these experiences and how a pedagogical tool such as regular video conferences addresses concerns about academic integrity. By accessing these accounts though end-of-term course evaluations and a solicited faculty survey, we are able to capture the message they are attempting to send to those with authority over the course design. Our qualitative analysis allows us to examine what the participants themselves consider to be important to communicate. A limitation, however, is that it is not possible to correlate the students' academic performance with their comments. However, our School of Business online program has been using this video conferencing practice for over four years to address concerns about the quality and integrity of our online programs, and the comments collected via the methods in this paper reflect the general success of the tool for use at this time. By providing specific descriptions of the consistent aspects of our video protocol, including grading rubrics, grading comments for various levels of performance, and contingencies for students who do not participate, we endeavor to spare the reader the failures from which we learned (e.g., continuing to grade student work when a student neglects to attend the video conference and facing an end-of-term dilemma about credit earned for submitted assignments) such that the future of many forms of online instruction might be especially successful in higher education, in particular in courses teaching information technology topics.

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APPENDIX: FACULTY SURVEY

These questions are designed to explore the perspectives of those who have taught in the online program and used video conferences — they are merely a guide to suggest the content domain of the interviews, but the researchers will probe and follow the participants' leads as additional topics related to the study arise. If the participants veer into topics unrelated to video conferencing, the researcher will gently redirect to topics relevant to the study.

Faculty Interview Protocol

Interviewee (Title and Name): _____

Interviewer: _____

A. Interviewee Background
How long have you been …
_____ teaching in the online program?
_____ how many courses do you teach in the online program?

1. Briefly describe your interest in teaching in the online program.

2. What is your understanding of why video conferencing sessions are being used in all of the online classes?
Probes: Is it working – why or why not?

3. How have these video conferences supported student learning in your course?
Probe: Is there evidence of this learning in the form of an example?

4. How have these video conferences supported academic integrity in your course?
Probe: Is there a particular example that exemplifies this?

Probe: Are there strategies you apply to help support the goal of academic integrity in your video conferences?

5. Have you or your colleagues encountered resistance from students to these conferences?
Elaborate

6. Are there challenges to these video conferences?
Probes: How do you think these can barriers be overcome?

Do you see opportunities that could be maximized? What are these and how?

7. What other thoughts can you share with us around your experiences with video conferencing.

Post Interview Comments and/or Observations:

STATEMENT OF PEER REVIEW INTEGRITY