

Usage Patterns of Course Videos by Business Students

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USAGE PATTERNS OF COURSE VIDEOS BY BUSINESS STUDENTS

Abstract

This study investigates students' impressions of the technical and pedagogical quality of lecture videos. Literature has demonstrated that this quality will influence if and how they are used (Chiu & Chiu, 2009; Dickson, Warshow, & Goebel, 2012; Gosper, 2011; McNulty, 2009; Rabe Hemp, 2009). The study also investigates students' usage patterns as a proxy for their acceptance of videos as an instructional resource.

Approximately 2,800 students in all 21 programs in the Faculty of Business at a College were surveyed. All programs are required to be delivered in a blended format which makes the use of videos the normal means of delivering content for the on-line portion of the blended course. An on-line instrument was used with a 6.1% response rate and a quantitative analysis was conducted.

The study revealed that 89% of students considered videos to be satisfactory from a technical perspective but 60% found them to be weak in pedagogy, which is consistent with the literature (Davis, 2009; Gibson, 2011; Freed, Freed, & Bertram, 2013). A high majority of students (87%) disliked videos being used as a replacement for traditional classes and prefer them to be a supplementary resource only. This finding is also consistent with the literature (Leadbeater, Leadbeater, & Shuttleworth, 2013; Johnston, Massa, & Burne, 2013; Williams, 2012; Taplin, 2011). The study also found that there were no significant difference in impressions or usage patterns between students based on seniority, GPA or program.

Videos are now used extensively in Post-Secondary Education but their teaching effectiveness is suspicious given that students in this study, and in the current literature, do not like them when they are used to replace traditional face-to-face classes.

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Chapter 1: The Problem Defined

Background Statement

Lecture videos are a relatively new activity which has been driven by improved information technology, trends towards on-line delivery, student comfort with technology and the need to find efficiencies due to government funding reductions (Euzent, Martin, Moskal, & Moskal, 2011). The intent of lecture videos are to provide the student with the same amount of learning content in the form of a video as they would have received if they had attended the class in person (Riismandel, 2011). Alternatively, the video is used as a supplemental resource that the student can use as they see fit to enhance their learning (Williams, 2012; Cooke, 2012). The use of lecture videos is also driven by pedagogy trends such as the flipped classroom which requires students to watch videos at home prior to attending a face-to-face application class (Chiu et al., 2009) – an evolution of the hybrid course.

Moreover, blended, or hybrid courses, can provide a starting point toward taking them completely on-line which can provide efficiency of labor (Sabin, Settle, & Rutherford, 2012). Regardless of the reason that lecture videos are being used, there are challenges with the production quality, the suitability of the pedagogy, academic culture and student usage patterns which can undermine the attempts to have them used effectively (Rabe Hemp, 2009).

These challenges can be divided into two main camps: Development Trends and Student Usage Patterns. Development Trends refer to the technical production of the video; the video and audio quality, length, delivery mechanism and pedagogy. Student Usage Patterns refers to how students use lecture videos in the courses where they are

offered.

However students tend to use videos only if they are well developed (McNulty, 2009) and so it is important for academics to understand what students think of as being “developed” so they can better prepare them (Silva, 2012; Brooks, Epp, & Logan, 2011). The connection between a properly developed video and how a student will use them requires attention.

Problem Statement

Lecture videos have arrived on the academic scene so quickly, the link between video availability and how students are using them, is not yet well understood. There is a tendency for faculty to prepare a lecture video with little regard to how the student might consume it (Gosper, 2011) and this can cause consumption to go down (McNulty, 2009). Indeed, pedagogy issues are also driven by deeply embedded academic cultures which often consider a face-to-face delivery as the same pedagogy as an on-line delivery, yet both mediums require different types of student cognitive participation (Freed et al., 2013; Silva, 2012; Smith, Smith, & Cavanaugh, 2011).

Participation by students, regardless of the pedagogical mastery embedded in the video, is influenced by other factors. Students that have a higher grade point average (GPA) have been reported to use videos differently than lower GPA students (Owston, Owston, & Lupshenyuk, 2011; Leadbeater et al., 2013). The research shows that freshmen students tend to use videos differently than seniors (Dickson et al., 2012). Technology students tend to use videos differently than medical or business students (Chiu et al., 2009; McNulty, 2009; Owston et al., 2011; Williams, 2012). So the character and demographic profile of the student can drive usage patterns.

Videos are also used differently depending on how students are expected to use them. If they are used as a *supplemental* resource then students will use them differently than if they are used as a *replacement* for a traditional face-to-face lecture (Taplin, 2011; Cooke, 2012). Thus the pedagogy of how a video is used in a course becomes an important determiner of whether a video is a useful resource or not, and so it becomes important for faculty to learn how the positioning of a video within a course will impact the effectiveness of student learning.

Purpose of the Study

The purpose of this study is to learn student video consumption patterns. It is suspected that these patterns are influenced by the technical and pedagogical features that are built into the video.

Video production by faculty, in turn, may be influenced by how students will consume them. If students are turned off by videos regardless of the quality, faculty may decide to spend less effort in their development.

If educational trends are influencing how faculty are using them (e.g. hybrid), and student usage patterns are influenced by their academic characteristics (e.g. high GPA students), it is apparent that the academic community needs to become more aware of how they are linked (McNulty, 2009). The following examples further illustrate the links:

If a student in a face-to-face classroom can listen to a lecture for 40 minutes, can they also listen to the same lecture as a video? If the lecture video is expertly produced, of a suitable length, has superb pedagogy, and offered as a supplemental resource, will the student still consume it?

Conversely, if in a hybrid course there are required to watch videos, and they are

linked to assessments, can the videos be of such poor technical quality and awful pedagogy, that the students will still consume them?

These problems inform the development of the study questions presented in the following section.

Study Questions

The study questions are divided into two main themes; trends and usage.

To help the researcher understand how students are reacting to the trends, the following study question is presented:

(1) What are students' impressions of the quality of lecture videos?

To help the researcher understand how students are using the videos, the following study question is explored:

(2) How are students consuming lecture capture videos and what are the usage patterns depending on the student's academic characteristics?

These questions were used throughout this study to inform the literature review, study methodology, analysis and conclusions.

Scope

The study is intended to investigate the general issues with use of lectures videos in a post-secondary environment. Detailed best practices for video technical production and specific pedagogical strategies are beyond the scope of this study.

Definition of Terms

Lecture video. A lecture video is the capture of a traditional face-to-face lecture that is saved as a video and can be viewed at a later date. The video can include captured PowerPoint presentations, whiteboard interaction, talking head, writing tablet interaction

or professionally prepared content.

Face-to-face classes. This is a traditional class in which an instructor is presenting content to a room of students.

Blended courses. This is a mix of traditional face-to-face and on-line delivery. A blended course is often referred to as a hybrid course.

Flipped class. This is a form of hybrid course in which the student is expected to learn foundational knowledge via on-line resources provided by the instructor. In the subsequent face-to-face class, the student applies the foundational knowledge.

The college. The college is the study setting; it is a large college in Ontario, Canada where lecture videos are widely used in almost all courses as part of the blended learning mandate.

Limitations of Study

Researcher bias. The researcher is in favor of videos as a supplemental resource for traditional lectures. Therefore there may be a bias towards wanting the results to show that videos do contribute to student learning in a course that provides them. The researcher endeavored to present findings in non-judgmental manner using language that is as objective as possible.

Sample. The study is conducted on business students at the college and cannot be generalized to all post-secondary institutions. Business students may produce results that are specific to their demographic, character and study habits that are not applicable to a different type of student.

Number of respondents. The students were asked to respond to an on-line survey about their use of videos. The researcher cannot influence the number of students that

contribute their opinions and so a low number of results may not produce statistically significant results.

Respondent context. In order to keep the number of instrument questions as low as possible in order to encourage participation, several questions asked the respondent about their impressions of the value of a video in their course(s). The instrument does not ask about the use of videos in a specific course, and so the respondent must answer in generalities. This may cause some questions to have an average rating reflecting the generality tone. The researcher encouraged the respondent to add comments which helped to clarify their opinion about a question and therefore mitigates the limitation this posed.

Chapter 2: Review of the Literature

The researcher has divided the literature review into two main themes which coincide with the main study questions as follows:

First, the researcher will review the trends towards more lecture videos in post-secondary education to discover why it is happening and learn the positives and negative aspects of this trend. This review will help the researcher discover how the literature relates to study question (1): What are students' impressions of the quality of lecture videos?

Second, the researcher will review literature that is focused on how students are receiving and using lecture videos. This information will relate to study question (2): How are students consuming lecture capture videos and what are the usage patterns depending on the student's academic characteristics?

These two research themes set the stage to help identify gaps in the research which can help to identify the relationship between how videos are being produced and how they are being consumed by the student.

The first step in this review is to learn where video use sits in the education continuum. That is, to learn the technological and educational trends which are influencing growth of video use.

Lecture Capture Video Trends

Lecture videos are a common technology now used as a resource for on-line and blended courses, as well as a supplement for traditional face-to-face courses. A vast number of post-secondary courses are using videos as a fundamental resource for delivery of content (Brooks et al., 2011; Euzent et al., 2011; Ford, Ford, & Burns, 2012;

McNulty, 2009; Sabin et al., 2012; Silva, 2012; Freed et al., 2013). On-line education is a growing trend globally and much of the momentum has been achieved because of the convergence of internet speeds, educational technology, advances in video capture and storage, competition among colleges, and social demand for videos as medium to convey instruction (Euzent et al., 2011; Sabin et al., 2012; Al Nashash, 2013; Gibson, 2011).

The delivery of this instruction can be thought of as two domains: the technical and the pedagogical. The technical domain refers to efficient production and editing of a video, and making it available to a student quickly, on a variety of playback platforms. The pedagogical domain considers if the video does the job of knowledge transfer. There are many instances of a video providing a good technical domain, but the pedagogical domain is poor, and this can interfere with student engagement (Gibson, 2011).

This kind of engagement issue was researched by McNulty (2009) who found that students will not engage with lecture videos if the quality is poor. So it appears that the first hurdle for student adoption is the basic quality of the production, regardless of the merits of the pedagogy. Dickson et al., (2012) found that videos that capture instructor whiteboard interaction are so badly produced, that they are quickly rejected by students even though they include beneficial non-verbal cues from the presenter.

Consequently, the typical lecture video used in a post-secondary course is one where the instructor prepares the video as a simple voice-over PowerPoint presentation. More elaborate video productions are rare because they are beyond the capabilities of the average lecture capture technology and the average faculty's skillset (Silva, 2012).

Berner and Adams (2004) suggested that even these simple videos may be technical overkill, and demonstrated that audio only lessons provide the same amount of

learning as video lessons. However, this study completed in 2004 when video capture was less mature, underlines the technical strides that have been made in only a few years. More recently, Euzent et al., (2011) and Riismandel (2011) found that there is a clear trend towards higher technical quality of videos being produced, as long as the authors remain with simple voice-over visuals and do not attempt full whiteboard, motion-tracking, sage-on-the-stage delivery.

However, the delivery of videos made up of simple voice-over PowerPoint comes with significant baggage, and this is identified as poor pedagogy (Chiu et al., 2009; Dickson et al., 2012; Gosper, 2011; Rabe Hemp, 2009; Merkt, Weigand, Heier, & Schwan, 2011; Kaltura Inc., 2014). Although the technology and infrastructure is in place to produce and deliver videos, faculty pedagogical skills are not yet developed, which does not bode well for student engagement and learning. It appears that faculty are just now crossing the video technical hurdle and now face a pedagogical wall (Freed et al., 2013). However, many faculty appear to be unaware of their poor skills in video pedagogy and consider a voice-over PowerPoint as sufficient for an online delivery (Sabin et al., 2012).

Rabe Hemp (2009) underscores this profound lack of pedagogical knowledge with a study that found students in a face-to-face setting learn much differently than an on-line setting. Faculty that deliver a voice-over PowerPoint video as a replacement for a face-to-face class are not appreciating the positive cognitive experiences (i.e. visual cues, social interaction, formative assessment, questioning) that students' are exposed to in a traditional class, and therefore are doing them a disservice.

Disservice extends not only to students (from faculty) but also from

administration to faculty, who are asked to become the “Steven Spielbergs” of the education world. Moskel (2013) calls learning by video a bad idea because of a lack of support for faculty to help them do it well. Merkt et al., (2011) goes further and concludes that current lecture videos provide less effective learning than the traditional text book because the former provides just surface learning, while the latter provides both surface and depth as required. Davis (2009) pulls it all together and declares that everything has to work together. That is, technology, scalability, reliability, automation, training, cost, support, pedagogy, and culture all have to be done well to get beyond the cognitive hurdles discussed by Rabe Hemp (2009) to ensure that lecture video are a resource that students’ can, and will use, for learning.

Student Usage Patterns

If videos are now technically okay, but lack pedagogical rigor, Davis (2009) has found that most students still do not use them. Indeed a large number of researchers have found the same evidence in their own studies (Chiu et al., 2009; Dickson et al., 2012; Rabe Hemp, 2009; Gosper, 2011; Merkt et al., 2011; Hauser, Paul, & Bradley, 2012). These researchers have tried to learn if the lack of use of lecture videos has to do with the nature of the student.

The nature of students’ characteristics explores how the student approaches their academic life from a strategic perspective. Even if all the issues with technical soundness and pedagogy are checked off, are students using videos if they are high achievers, or seniors, or in specific program, or have family responsibilities? Perhaps there are other reasons that influence how a student consumes a lecture video? The research is deficient in answering these usage questions because there is dearth of institutions that can provide

the study environment to do so.

Regardless of the demographic profile, researchers have found that almost all students do not like lecture videos if they are used as a replacement for a face-to-face lecture (Williams, 2012; Taplin, 2011; Cooke, 2012). Only students that required the flexibility of not going to class due to family or work commitments accepted videos as a replacement. It appears that students enjoyed the traditional lecture more than watching it via video (Venkatesh, Redwab & Rabah, 2013). Hauser et al., (2012) suggests that a face-to-face lecture creates an emotional investment which favors a better buy-in by the student. On-line learning by video cannot satisfy the same emotional experience and so students reject them in favor of the traditional class.

Rabe Hemp (2009) suggests that the specific emotional engagement in the traditional face-to-face class is one of collaboration. Often the pedagogy in a traditional class involves active learning, visual and auditory cues, and social interactions that make the experience enriching. Students, according to the researcher, are declaring that watching videos does not provide the same positive experience. In fact, Smith et al., (2011) found that when videos are used to replace a traditional class, students had to be given significant grade incentives to actually do the work, otherwise they would walk away from the commitment.

This commitment is a key driver of the pedagogy in a flipped course; it requires that the student learns on their own and then arrives at the face-to-face class ready to apply their knowledge. Smith et al., (2011) is suggesting that assessment and grades are needed every week for the flipped class to work. Chiu et al., (2009) agrees that the flipped course can work only if the pedagogy drives specific student actions that support

the goals of this type of course.

McNulty (2009) avoided the flipped course pedagogy and decided to retain the traditional delivery for his medical courses, but wanted to know how lecture videos would be used by medical students if they were positioned as a *supplemental* resource. The development of these supplemental videos involved a lot of time and effort and so his study aimed to find out if they are actually being used. Despite the students being high engaged medical students, the study found that less than 10% of the available videos were being viewed and that only 60% of the student enrollment were using them. Students were not using videos as an extra resource and the latest research is trying to find out why.

Recent research is now surfacing to find out how students are using videos when they are positioned as a supplemental resource in their traditional face-to-face courses. Studies have produced qualitative results which show that students appreciate having access to videos as an extra resource and perceive that they were being better served by the institution. However, as with McNulty (2009) found, students did not use them as much as the faculty had hoped (Brooks et al., 2011; McNulty, 2009; Settle, Dettori, & Davidson, 2012; Smith et al., 2011). In fact, Owston et al., (2011) found that students *thought* their grades were higher due to availability of supplementary videos, even though they hardly used them; their grades were statistically the same as a control group with no access to videos.

Statistical studies have attempted to find a link between the overall class grade point average and the availability of a lecture capture video as an extra resource. Euzent et al., (2011), Ford et al., (2012) and McNulty (2009) found there to be no significant

difference in class average between a course section that had access to videos and another section that did not, suggesting that students are not using the video resources to help bolster their grades. However many of these studies were quasi-experimental and did not fully control for confounding factors such as differences in cohorts, instructors or even time. For example, Settle et al. (2012) compared the grades of cohorts from 1986 to 2001 which had no exposure to videos, with cohorts from 2001 to 2010 who did have access to videos, and they found that the older cohorts had better grade performance. Confounding comparisons like this make the quantitative results suspicious and so researchers tend to rely on qualitative studies such as seniority, program, GPA to help understand usage patterns.

For instance, Leadbeater et al., (2013) found that highly engaged students would use lecture videos to help review difficult content; average students would use them to cram for exams and to catch up with the occasional missed class; and disengaged students would use videos as an excuse to miss lectures altogether rationalizing that they could catch up later. The researchers found that disengaged students often used supplementary videos as a crutch for poor motivation, and could never catch up as they first intended.

Johnston et al., (2013) found the same results, and went further to describe the conflict with videos as a resource, and the poor time management skills that often accompanies disengaged students. The authors found that the average disengaged student left so much learning by video to the end of the course, that they could not manage its consumption, and gave up. Williams (2012) concluded that high users of videos are either engaged students or late semester procrastinators, and this character trait predicts how well lecture videos influence their course grades. Procrastinators do poorly with videos as

a resource and engaged students do better.

However, perhaps students are not procrastinating, but are in fact not yet socialized yet to using technology to consume education. Walls et al., (2010) found that although we perceive students to be savvy with technology, they are not quite ready to consume it in the manner faculty intend. Walls surveyed students in two upper level business courses where the researchers expected the maturity, and higher level of engagement would make the on-line content more palatable. They concluded that these high achieving students did not consume videos because it was not yet a normal aspect of their learning; they were simply not used to on-line media as a major part of their learning. The researchers suggested that more exposure to videos would make it a more “normal” part of post-secondary learning, and therefore increase usage rates. Further research by Moskal et al., (2013) advocates that the number of courses providing videos as a resource needs to be much larger so that there is an increasing culture of on-line behavior and consumption among students.

Summary

The culture, has a large influence on behavior in almost any environment (Rabe Hemp, 2009; Freed et al., 2013). In the post-secondary environment, videos are now being used as fundamental resource for delivery of content. The literature shows that faculty are developing videos as if they are in the face-to-face classroom, and are not using appropriate pedagogy for on-line video delivery (Chiu et al., 2009; Cooke, 2012; Dickson et al., 2012; Hauser et al., 2012; Kaltura Inc., 2014; McNulty, 2009; Merkt et al., 2011; Rabe Hemp, 2009; Smith et al., 2011). There appears to be a need for faculty training if the goal is to use videos for content delivery.

Instead of using videos as a replacement for a face-to-face class many are used as a supplementary resource. However, the research shows that the typical student still does not use them very much, perhaps because they have yet to develop a consumption culture that takes them more seriously (Galy, Downey, & Johnson, 2011; Venkatesh et al., 2013).

Another cultural hurdle involves faculty who are just now gaining confidence with the basic technology. They are not aware that their pedagogy is deficient, and do not have the time, resources, support or motivation to deliver better productions (Euzent et al., 2011; Gosper, 2011; Freed et al., 2013; Davis, 2009; Moskal et al., 2013).

Even if faculty became talented lecture video producers and directors, research shows that the intended audience, the student, may still not watch their work. They prefer face-to-face classes over videos because of the emotional enrichment they receive (Silva, 2012; Owston et al., 2011; Hauser et al., 2012).

The literature shows that the technology of video production is improving, but pedagogy is lacking. However the literature does not offer an example of a study involving video usage patterns by thousands of students, across multiple programs and delivery semesters, where use of lecture videos is now the norm, and faculty are well versed in production techniques.

As a result, the literature has difficulty researching the link between usage patterns and student characteristics, such as program of study, grade point average or seniority. In this study, the researcher filled this gap by using an instrument in a large college where videos have been used extensively to replace traditional classes in order to fulfill blended learning requirements. The results will attempt to answer the study questions posed earlier:

- (1) What are students' impressions of the quality of lecture videos?
- (2) How are students consuming lecture capture videos and what are the usage patterns depending on the student's academic characteristics?

Chapter 3: Methodology

Research Paradigm

The literature shows that students do like the availability of videos as an extra resource even though they may not get around to using them very much (McNulty, 2009). Almost all studies have focused on the usage patterns of specific course within a program (Ford et al., 2012). This is because lecture videos are an emerging technology that is not used throughout all courses in a program.

The researcher has not identified any studies where a large post-secondary student population or faculty are all using videos as part of their content delivery. A large-scale study would help the academic community to learn the macro trends which can inform post-secondary policy and video implementation in a blended or online delivery. Rather than relying on many small, one-course, studies with confounding results and conclusions, it would be beneficial to study a large college student population who have all been exposed to videos. This study has attempted to fill this gap in knowledge by studying a suitably large and diverse student population at the College.

Participants

The College has a Faculty of Business with 2,776 students across 21 different programs as of October 1, 2014. The programs range from one-year graduate certificate to three-year advanced diplomas. Regardless of the program, the College requires all courses, except labs, to be blended. Consequently, all students have been exposed to course content in the form of videos as a replacement for face-to-face classes. This large population, and diverse number of programs, provides a more comprehensive understanding of how students are perceiving the value of videos and how they are using

them. Furthermore, the participants range from freshmen to seniors, they have a variety of engagement patterns and there are a range of grade point averages. This study surveyed all 2,776 students enrolled as students in the faculty. Table 1 shows the population of participants invited to respond to the instrument.

Table 1

Faculty of Business Programs Invited to Respond to the Instrument

Program	Number of Students
Advertising & Marketing Communications Management	232
Business	368
Business – Accounting	163
Business - Accounting (Co-op)	166
Business - Marketing	157
Business - Marketing (Co-op)	104
Business Administration	234
Business Fundamentals	32
Business-Financial Services	92
Event Management	21
Human Resources Management	66
Insurance	162
Insurance (Co-op)	53
International Business Management	104
Office Admin - Executive	150

Table continues

Program	Number of Students
Office Admin - Medical	227
Office Administration - Legal	120
Office Administration -General	1
Public Relations	40
Small Bus & Entrepreneurship	100
Tourism and Travel	184
Total	2,776

Research Procedure

The 2,776 students listed in Table 1 were invited to visit an on-line instrument service. An email was sent to the students' college email account. This initial email provided a brief description of the study, but was not the informed consent dialog. The email contained a hyperlink to the researcher's instrument on-line.

If the respondent decided to click the hyperlink their default internet browser opened at the informed consent page of the instrument (Appendix A). This page explained the details of the instrument and described the contact information, purpose and benefits, possible risks, confidentiality, anonymity etc. and finished with Accept or Not Accept buttons. If the respondent clicked Accept, the instrument continued. If they pressed Not Accept, the instrument exited. If a respondent accepted, they still were able to exit at any time.

The instrument was of minimal risk to the respondent. There was no tracking or linking of the responses to the respondent. Three questions were added at the end of the

instrument that were intended to categorize the student in terms of their program, semester and GPA range. Respondents may have interpreted these questions as a possible method of identification and so the survey question included an option which permitted the respondent to not answer, but they could still contribute to the remaining questions that they found comfortable in answering.

Protection of identity was very important and since the researcher is an instructor in the School of Business at the College, some of the respondents may have had the researcher as an instructor during the study period, which may have been interpreted as undue influence. The informed consent page allowed the respondent to *Not Accept* the survey invitation and this should have mitigated their concerns, however it is unknown how many respondents abandoned the instrument because of their concerns over anonymity.

The instrument is a cross-sectional design intended to gather current beliefs, attitudes, and opinions with minimal effort and time asked of the respondent (Creswell, 2012). The instrument asked the respondent fifteen questions, including three categorization questions (i.e. GPA, program, seniority). All questions, except those used for categorization, used a Likert scale and most provided an area for comments. The intent of the comment area was to allow the respondent to elaborate on their answer. This was because many of the questions were generic in nature and many of the respondents could have had answers that required a description of the context. For example, one of the survey questions asked the respondent to comment on the length of the typical course video. The respondent might consider their answer and have a “well it depends” reaction thus inspiring a need to provide qualitative comment that clarifies their context. The

comment area allows the context to be described, and the researcher can then identify a common theme which helps to flesh out the Likert scale measurement.

The Likert scale data collection method is commonly used in educational research as a way of gathering respondent attitudes (i.e. strongly agree to strongly disagree) and then assume that the intervals between the choices are equal. This interval distribution is further assumed to be a normal distribution and can be assigned values which turn the respondents' attitudes into quantifiable data that can be analyzed (Creswell, 2012).

The instrument responses were collected using an anonymous on-line survey system named Survey Monkey. The survey was conducted during first two week of October, 2014. The survey had three main themes: (1) to discover what the respondent thought about the technical and pedagogical merits of videos; (2) how the respondent used videos; and (3) what were the respondents' characteristics in terms of GPA, program and seniority. The following section presents the specific questions included in the survey themes.

Instrument Questions

The first theme presents questions intended to find out what the respondents thought about videos from a technical production and pedagogical perspective. These questions are in support of study question (1): What are students' impressions of the quality of lecture capture videos?

1. Please rate the quality of the typical video.
2. Were there technical difficulties viewing the videos?
3. In a typical course with videos, what was your impression of their usefulness?
4. Please rate the typical length in time of the average video.

The second theme presented questions on their usage patterns and were in support for study question (2): How are students consuming lecture capture videos and what are the usage patterns depending on the student's academic characteristics?

5. Videos are often used in blended courses. If you have been at Mohawk from more than one semester, please indicate how many times you watched videos during the typical blended course.

Please rate the reasons you watched videos in a typical course?

6. Videos allow me the flexibility to miss classes
7. To review content I did not understand that well during class
8. Viewing the videos was a requirement of the course
9. I only watched videos before major tests and exams
10. Videos are better than the face-to-face class
11. There were grades assigned to learning the video content
12. I didn't watch the videos in most of my courses

The final theme of the survey asked the respondent three categorization questions listed below.

13. What semester are you in right now?
14. What program are you in?
15. Can you tell me how well you are doing in your program: What is your Grade Point Average?

These categorization questions were intended to help the researcher determine if there is a relationship between usage patterns and the students' profile and therefore contribute to the last part of study question (2): How are students consuming lecture

capture videos *and what are the usage patterns depending on the student's academic characteristics?*

Appendix A presents the actual instrument used for the study.

Data Analysis

The researcher gathered primary data using the on-line instrument. The data was analyzed in a quantitative manner using descriptive statistics: frequencies, percentage and averages gleaned from Likert scales. Since the Likert scale permits the allocation of quantitative values for each choice within each question, the results can be tabulated and the average response can be presented (Creswell, 2012). The distribution of the responses are presented to gain additional insight into the respondents' attitudes. These tabular results are presented in the next chapter of this study.

Administrative Approval and Ethical Review

This study was approved by the Vice President of Student Services at the College. The approval document is included as Appendix B.

This study proposal was presented and approved by the Central Michigan University (CMU) Institutional Research Board (IRB). The approval documentation is included as Appendix C.

The researcher also received approval from the College's Research Ethics Board (REB) for approval. The approval document is presented as Appendix D.

Chapter 4: Results

This chapter presents the results from the instrument survey which are in support of the two research questions. Quantitative results are presented as descriptive statistics and respondent comments are verbatim. The study research questions are:

(1) What are students’ impressions of the quality of lecture capture videos?

(2) How are students consuming lecture capture videos and what are the usage patterns depending on the student’s academic characteristics?

Three main sections of this chapter are presented as follows:

The instrument’s overall response rate.

Results from the instrument in support of research question 1.

Results from the instrument in support of research question 2.

The Instrument’s Overall Response Rate

The study requested 2,776 students to respond to the online instrument. There were 168 responses for an overall response rate of 6.05%. Table 2 provides a breakdown of the responses by program.

Table 2

Instrument Response Rate by Program (n=142)

Program	Number of Students Surveyed	Number of Responses	Response Rate (%)
Advertising & Marketing			
Communications Management	232	12	8.16
Business	368	13	8.84

Table continues

Program	Number of Students Surveyed	Number of Responses	Response Rate (%)
Business – Accounting	163	4	2.72
Business - Accounting (Co-op)	166	19	12.93
Business - Marketing	157	6	4.08
Business - Marketing (Co-op)	104	4	2.72
Business Administration	234	17	11.56
Business Fundamentals	32	3	2.04
Business-Financial Services	92	3	2.04
Event Management	21	1	0.68
Human Resources Management	66	1	0.68
Insurance	162	11	7.48
Insurance (Co-op)	53	3	2.04
International Business Management	104	6	4.08
Office Admin - Executive	150	9	6.12
Office Admin - Medical	227	13	8.84
Office Administration - Legal	120	8	5.44
Office Administration -General	1	0	0.00
Public Relations	40	2	1.36
Small Bus & Entrepreneurship	100	4	2.72
Tourism and Travel	184	3	2.04
Total	2,776	142	5.12

Of the 168 respondents that agreed to participate, 142 provided information about their current program. The results show that the response rate was not uniform across all programs. Where program data was provided, the responses ranged from 0.00 to 12.93% with an average program response rate of 5.12%. The following sections present the detailed results for each of the instrument questions. The questions are grouped together in the manner they support the relevant study question.

Results for Study Question One

The following tables 3 to 6 present the instrument results in support of study question one: What are students’ impressions of the quality of lecture capture videos?

Table 3 presents the findings for the instrument question: Please rate the quality of the typical video.

Table 3

Please Rate the Quality of the Typical video (n=156)

Very poor	Poor	Average	Well Done	Excellent	Total	Average Rating
1.92%	6.41%	44.87%	39.10%	7.69%	156	3.44
3	10	70	61	12		

The average response was 3.44 which aligns with Average on the Likert scale.

Representative comments from respondents are as follows:

- “The quality of videos are fine...just a waste of time.”
- “The video's themselves could be of a better quality in some cases.”
- “Some videos could be better but most are good.”

- “However I have had the experience where I did not find the teachers teaching methods appropriate or helpful and this was transferred into the videos therefore making them useless and frustrating.”
- “They are clear and understandable.”
- “Video quality could be better than 480, 720 would be better for viewing.”

Once this question related to the viewing quality was completed, the survey probed further to find out if the videos worked reliably from a technical standpoint. Table 4 presents the results for instrument question: Were there technical difficulties viewing the videos?

Table 4

Were there technical difficulties viewing the videos (n=152)

Frequently	Most of the time	Occasionally	Never	Total	Average Rating
3.29%	7.24%	46.05%	43.42%	152	3.73
5	11	70	66		

The average response was 3.73 out of 5 which aligns to Never on the Likert scale.

Representative comments from respondents are presented below:

- “I have never had a problem with viewing the videos, only when I try to find them on our elearn website.”
- “Usually had to do with the professor providing a faulty link to the video.”
- “Almost never.”

- “Sometimes slow to load, but that may be my internet connection. Never problems with the links/websites I use.”
- “There is no technical difficulties viewing the videos. Very rarely occurs any difficulty. Otherwise videos are very useful.”
- “Sometimes the formatting with me having a mac is very difficult to open if there made to only play on PCs.”

The survey then moved away from technical perceptions into finding out what the respondent thought about the pedagogical merit of the videos. Table 5 presents the results for instrument question: In a typical course with videos, what was your impression of their usefulness?

Table 5

In a typical course with videos, what was your impression of their usefulness? (n=156)

Not at all useful	Slightly useful	Moderately useful	Very useful	Extremely useful	Total	Average Rating
10.26%	19.23%	30.77%	28.21%	11.54%	156	3.62
16	30	48	44	18		

Respondents provided a 3.62 out of 5 rating which tended toward the Moderately Useful rating on the Likert scale. Representative comments are presented below:

- “In my occupational health and safety class it is more interesting watching a video than reading about it. So I think they are useful.”
- “Videos are useful as long as they are used alongside lectures and assignments as an extra resource”
- “Catching the missing points that were in the class, I repeat the things (that) were hard to understand”

- “Videos are very useful in any course. We can watch videos at any time and at any place.”
- “I find they give you more info and or ideas of what is going on.”
- “I do not really use them as I don't really enjoy watching them, I am a text learner. In courses what have them, the material is very boring because the students in them do not seem too invested or are over invested, which makes them annoying to listen to. They feel forced instead of real.”

Next, the survey attempted to find out if the length of the typical video was suitable so as to further refine some of the pedagogical issues that may be evident. Table 6 presents the results for instrument question: Please rate the typical length in time of the average video.

Table 6

Please rate the typical length in time of the average video (n=152)

Too long	Long	About right	Short	Too short	Total	Average Rating
5.26%	23.68%	65.13%	5.26%	0.66%	152	2.7
8	36	99	8	1		

Respondents provided a rating of 2.7 out 5 which aligns to the About Right rating on the scale. Representative comments from respondents follow:

- “The video should be for an average time, it should not be too long not too short.”
- “Sometimes they are too long and you miss the main point due to filler.”
- “When they are too long it loses my attention because you can kind of zone out to the videos. When they are too short I feel like I didn't grasp the

concept well enough. Most videos however were the perfect length I found.”

- “It’s not fun sitting and watching these video's so the shorter they are the better. Some instructors do a good job of this but others make video's too long.”
- “Some were long but it was necessary because of the content. All content was relevant to the video.”
- “Well, it depends in the topic which they are supposed to teach.”

With these forgoing questions, the researcher was able to gather data to help answer study question (1): What are students’ impressions of the quality of lecture capture videos? The survey then transitioned into presenting questions in support of the remaining study question.

Results for Study Question Two

The following tables 7 to 16 present the instrument results in support of study question two: How are students consuming lecture capture videos and what are the usage patterns depending on the student’s academic characteristics?

This study question has two elements: The first is to learn how all students in aggregate use videos, and secondly, to find if there any difference in use depending on the students’ academic profile. Tables 7 to 13 provide usage results for all students and tables 14 to 16 present usage results for students according to program, GPA and seniority.

The initial survey question in support of the aggregate student population usage patterns can be found in Table 7 which posed the question: Videos allowed me the

flexibility to miss classes.

Table 7

Videos Allowed Me the Flexibility to Miss Classes (n=77)

Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Responses	Average Rating
35.06%	29.87%	9.09%	20.78%	5.19%	77	2.31
27	23	7	16	4		

The average response rating was 2.31 which aligns to Disagree on the scale. The following comment for this question is presented:

- “Because I live an hour away from the school, and work almost 40 hours a week, it is hard for me to get to every class. Videos would help me catch up on classes missed due to the daily life grind.”

Building on the previous question, the next question wanted to learn if the respondent used videos when they were available as a supplement for a traditional face-to-face class. Table 8 presents the results for instrument question: Videos allowed me to review content I did not understand that well during class.

Table 8

Videos Allowed Me to Review Content I Did Not Understand That Well During Class (n=75)

Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Responses	Average Rating
6.67%	13.33%	18.67%	40.00%	25.33%	75	3.76
5	10	14	30	19		

The average response rating was 3.76 which align to Agree on the scale.

Representative comments were:

- “Face to face and videos both are important.”
- “The videos are a great way to help blended learning.”
- “It is better to have face to face learning and for the videos to be an extra option if you need further explaining.”

If the videos were used for a blended delivery, that is, as a replacement for a face-to-face class the researcher wanted to find out what the respondents thought about this type of pedagogy and how they reacted from a usage standpoint. Table 9 presents the responses to the question: I had to watch videos, it was a blended course.

Table 9

I had to watch videos, it was a blended course (n=76)

Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Responses	Average Rating
7.89%	7.89%	13.16%	42.11%	28.95%	76	3.76
6	6	10	32	22		

The average response rating was 3.76 which aligned to Agree on the scale.

Representative comments were:

- “Overall the blended videos are handy, but for myself I am a person who likes to learn face to face, as I can ask questions directly about certain parts I don't understand, and sometimes videos can be very boring.”
- “I don't like blended education system. I rather prefer face-to-face traditional classroom style education system.”
- “I like learning face to face, I understand better than watching the video.”

Following these questions on the positioning of videos from a pedagogical perspective, the survey moved into questions about video usage regardless if they were used as a supplemental or replacement resource. Table 10 presents the results for instrument question: I only watched videos before major tests and exams.

Table 10

I only watched videos before major tests and exams (n=76)

Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Responses	Average Rating
25.00% 19	27.63% 21	26.32% 20	21.05% 16	2.63% 2	76	2.57

The average response rating was 2.57 which aligned to Disagree on the scale. A representative comment was:

- “I think that the videos are a great resource tool for students. I appreciate having access to them. Thank you!”

The survey then was less subtle in the questioning about how videos are used pedagogically. The researcher wanted to learn if videos are perceived as a suitable replacement for traditional classes. Table 11 presents the results for instrument question: Videos are better than the face-to-face class.

Table 11

Videos are Better than the Face-To-Face Class (n=74)

Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Responses	Average Rating
54.05% 40	28.38% 21	8.11% 6	6.76% 5	4.05% 3	74	1.82

The average response rating was 1.82 which aligned to Disagree on the scale. A representative comment was:

- “I do not like videos. While the quality is usually quite good, sometimes it is not. I feel that college courses should done in class. While it might be convenient to watch a video while studying, there is no opportunity to ask questions when the video is part of your homework. I can find these videos myself ...I am paying to be taught in person.”

The researcher then probed more into the respondent’s motivation for watching videos in a blended course. Table 12 presents the results for instrument question: I had to watch the videos, there were grades assigned to the content.

Table 12

I had to watch the videos, there were grades assigned to the content (n=76)

Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Responses	Average Rating
7.89%	25.00%	17.11%	32.89%	18.42%	76	3.33
6	19	13	25	14		

The average response rating was 3.33 which aligned to a neutral response. A representative comment was:

- “Stop forcing students who don't want to use videos for learning, very much a waste of time.”

The researcher completed the usage data gathering with a final motivation question that investigates the overall use of videos regardless of pedagogy or incentives. Table 13 presents the results for instrument question: I didn't watch the videos in most of

my courses.

Table 13

I Didn't Watch the Videos in Most of My Courses (n=75)

Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Responses	Average Rating
28.00%	22.67%	24.00%	13.33%	12.00%	75	2.59
21	17	18	10	9		

The average response rating was 2.59 which aligned to Disagree on the scale. A representative comment was:

- “Usually I do not watch videos from YouTube or other sites that just show example in real life. For me it is a waste of time. Rather I would (prefer) extra work from other classes.”

The survey then moved into the final theme which was to learn the respondent’s profile. Recall that study question two wanted to find out if certain characteristics of the respondent resulted in different video usage patterns. For example, were high GPA students using videos differently than students with a low GPA? Therefore the instrument asked three categorization questions to assist the researcher in answering this aspect of the study question. These categorization questions were: program, grade point average, and semester. Each of these will be discussed in same order they were collected.

The study respondents came from twenty of the twenty-one programs at the College, however the response rate fluctuated depending on the program. Business Accounting Co-op and Business Administration had a 12.93% and 11.56% response rates respectively (see table 2) and these rates were significantly higher than other programs. With the knowledge of which programs had the highest response rate, the researcher was

able to isolate and compare the usage patterns to learn if there were any differences.

Table 14 shows the usage patterns from the high response programs as compared to all of the programs.

Table 14

Comparison of Usage Patterns between the Aggregate and High Response Programs

Question	Aggregate Responses	High Response Rate Programs	High Response Rate Program Indication
	Average Rating (n=139)	Average Rating (n=36)	
Videos allowed me the flexibility to miss classes	2.41	2.44	No difference
To review content I did not understand that well during class	3.64	3.94	No difference
I had to, it was a blended course	3.87	4.03	No difference
I only watched videos before major tests and exams	2.42	2.83	No difference
Videos are better than the face-to-face class	1.80	1.67	No difference
I had to watch the videos, there were grades assigned to the content	3.33	3.14	No difference
I didn't watch the videos in most of my courses	2.48	2.61	No difference
Average	2.85	2.95	No difference

By filtering the responses according to high response the researcher intended to find out if the usage patterns were different based on program. The results in Table 14 present the Likert scale response for the instrument questions related to student usage, and there appears to be no difference in usage patterns according to program categorization. The overall response averages between the high response and all program were 2.85 and 2.95 respectively, indicating that there is no overall difference between the categories.

The instrument categorization questions also asked respondents to provide information on their grade point average (GPA) in order to help identify if high GPA students use videos differently. High GPA students were characterized as having over 70% and low GPA students had an average of less than 70%. Table 15 shows the responses from the 89 respondents identifying themselves as having a high GPA and the 22 respondents that identified themselves as having a low GPA.

Table 15

Comparison of Usage Patterns Between High GPA and Low GPA Respondents

Question	High GPA Respondents	Low GPA Respondents	High GPA Indication
	Average Rating (n=89)	Average Rating (n=22)	
Videos allowed me the flexibility to miss classes	2.30	2.70	No difference
To review content I did not understand that well during class	3.60	3.81	No difference

Table continues

Question	High GPA Respondents	Low GPA Respondents	High GPA Indication
	Average Rating (n=89)	Average Rating (n=22)	
I had to, it was a blended course	3.81	4.00	No difference
I only watched videos before major tests and exams	2.45	2.68	No difference
Videos are better than the face-to-face class	1.63	2.27	More strongly disagree compared to Low GPA
I had to watch the videos, there were grades assigned to the content	3.44	3.10	No difference
I didn't watch the videos in most of my courses	2.43	2.77	No difference
Average	2.81	3.05	No difference

By filtering the responses according to high or low GPA the researcher was able to learn if there are different usage patterns between the groups. Table 15 shows that there is no difference in usage patterns except for the question relating to videos being better than face-to-face classes. For this question high GPA students responded with a Strongly Disagree versus a Disagree for the low GPA students. The overall response average between high GPA and low GPA students is 2.85 and 3.05 respectively.

The final instrument characterization question also asked the respondent to indicate their current semester. This data helps to determine if there are different usage patterns between senior students and freshmen. Table 16 presents the findings.

Table 16

Comparison of Usage Patterns between Senior and Freshmen Students

Question	Senior Respondents	Freshmen Respondents	Senior Indication
	Average Rating (n=76)	Average Rating (n=58)	
Videos allowed me the flexibility to miss classes	2.31	2.56	No difference
To review content I did not understand that well during class	3.76	3.55	No difference
I had to, it was a blended course	3.76	4.02	No difference
I only watched videos before major tests and exams	2.57	2.17	No difference
Videos are better than the face-to-face class	1.82	1.76	No difference
I had to watch the videos, there were grades assigned to the content	3.33	3.32	No difference
I didn't watch the videos in most of my courses	2.59	2.33	No difference
Average	2.88	2.81	No difference

Table 16 shows that there were no differences in detailed usage patterns between seniors and freshmen. The overall average between seniors and freshmen was 2.88 and 2.81 indicating that there was no difference in usage patterns between the categories.

Chapter 5: Conclusions

Summary

Videos as an instructional tool are now widespread in post-secondary education as a result of the convergence of technologies, new education delivery models and government budgetary pressure (Euzent et al., 2011; Sabin et al., 2012). Only a few years ago, faculty that were developing instructional videos wrestled with technical roadblocks. Today, these roadblocks are significantly reduced allowing videos to be produced and disseminated with relative ease (Venkatesh et al., 2013).

However, a video that is easy to produce, may not necessary be very good from an educational perspective. This study has attempted to learn if the consumer of these videos, the student, likes what they see in terms of technical quality and educational merit. Moreover, this study investigated students' usage patterns with videos to learn if the trend towards using them has any merit.

To assist with this investigation, two study questions were posed: (1) What are students' impressions of the quality of lecture videos? (2) How are students consuming lecture capture videos and what are the usage patterns depending on the student's academic characteristics?

These questions steered a literature review which evolved into two camps that were coincidental to the study questions. The first camp can be described as the technical and pedagogical assessment review. The literature showed that the technical merit of a video production is now mature (Gibson, 2011). A video can be produced quickly and can be distributed effortlessly. However, these technical hurdles are now replaced with pedagogical wall of immaturity. This latter challenge will require large investments in

faculty training and expert management of cultural change (Chiu et al., 2009; Dickson et al., 2012; Rabe Hemp, 2009; Merkt et al., 2011; Kaltura Inc., 2014; Hauser et al., 2012).

The second literature camp wanted to know how students would consume videos if they were delivered as a replacement for, or a supplement to, a traditional face-to-face class. The literature concludes that students' dislike videos that replaced traditional face-to-face classes but like them as a supplemental resource (Cooke, 2012; Galy et al., 2011; Williams, 2012). However, regardless of how videos are positioned within a course, researchers found that most students' do not use them unless they were coerced with grades (Taplin, 2011; Williams, 2012).

In an attempt to replicate the research, and answer the study questions, the study surveyed all students enrolled in Faculty of Business at the College. This includes approximately 2,800 students across 21 different programs. An on-line instrument was used and a quantitative analysis was conducted on the results.

The results showed that students are satisfied with the video technology but unhappy with how it is used, in particular, the use of videos as a replacement for face-to-face classes. Behavior patterns and attitudes towards videos were the same among students across programs, grade point averages and seniority.

The interpretation of these results, their consistency with the literature and how well the study questions are answered are discussed in the following sections.

Discussion

Recall that the objective of this study were to answer two questions:

- (1) What are students' impressions of the quality of lecture videos?
- (2) How are students consuming lecture capture videos and what are the usage

patterns depending on the student's academic characteristics?

With regards to the first question, the results of this study find that student consumption of videos is not hindered by the technical quality of the videos, but by the pedagogy of the course in which they are being used. This study found that 89.4% of the respondents declaring that they *never* or *rarely* had technical difficulties with the videos.

These findings support the research of Euzent et al., (2011), Sabin et al., (2012), Al Nashash (2013), and Gibson, (2011) which describes that the first hurdle in video engagement, the technical quality, has been reduced because of improvements in lecture capture technology ease of use, capability and convenience.

However, despite the technical merit, 82.4% of students strongly disliked or disliked the replacement of traditional face-to-face classes with videos. They preferred videos as a supplemental resource that they can use if needed. These attitudes crossed all segments of the student sample set. These results are consistent with the literature which finds that students prefer videos as supplemental resources only, the central theme being, that students did not find the videos to be engaging because faculty have not been resourced or trained in the pedagogy of on-line video content delivery (Cooke, 2012; Taplin, 2011; Williams, 2012; Burk, Lyons, Noriega, & Polovina-Vukovic, 2013; Hauser et al., 2012). This study further supports the literature with 60% of respondents declaring that the videos were *poor* to *average* in terms of educational value. One salient comment sums up the pedagogy challenge with a comment: "I have had the experience where I did not find the teachers teaching methods appropriate or helpful and this was transferred into the videos therefore making them useless and frustrating."

With regards to the second study question, how are students' using videos, the

literature suggests that the manner in which faculty are using videos is pedagogically weak, and so students are rejecting their use as a teaching resource (Chiu et al., 2009; Dickson et al., 2012). Students in this study parallel this attitude with 71% stating that they do watch the videos, but were not happy doing so, and another 52% watch only because there were grades attached to the effort. One student stated: “Stop forcing students who don't want to use videos for learning, very much a waste of time.” This is a summative comment which suggests that pedagogy is a significant hurdle to engagement.

However, if the pedagogy on how videos are used in a course is repositioned as a supplementary resource, then 65% of students in this study appreciated the videos. This result supports the work of Burk et al., (2013), Johnston et al., (2013), Leadbeater et al., (2013) and Williams (2012) who found that students liked supplementary videos as “insurance” in case they need them, even though most students never used them (Taplin, 2011).

Students may still not watch them for other reasons suggests Brooks et al., (2011), Gosper (2011) and McNulty (2009). The cognitive and engagement elements at work between an on-line environment and a traditional class experience are so different, that students may never accept videos as a replacement (Venkatesh et al., 2013). This study concurs with 82% of students preferring the traditional face-to-face which allows for direct questioning, socialisation, visual cues of the instructor and formative assessment. A representative comment summarises the cognitive disengagement: “While it might be convenient to watch a video while studying, there is no opportunity to ask questions when the video is part of your homework.” It appears that video instruction does not provide the flexibility to accommodate different learning styles and abilities, and this

leads to student frustration and negative attitudes.

Study question two also investigated patterns of use depending on certain student characteristics. Specifically, the study aimed to find out if there are differences in usage patterns and attitudes depending on the students' program, GPA or seniority. This study found that there were no differences in usage patterns or attitudes between students in high response programs (2.85) versus all programs (2.95), or between freshmen (2.81) versus seniors (2.88).

However, there were some differences in usage patterns between students with a high GPA versus those with a low GPA. Those with a high GPA took a *strongly disagree* stance when asked about replacing face-to-face classes with videos (1.63), whereas the low GPA students took a more measured *disagree* stance (2.27). The overall average between the high GPA and low GPA students was 2.81 and 3.05 respectively which is a spread driven by the face-to-face question, otherwise there is no difference between the categories.

These results supports the work of Owston et al., (2011) who showed that high GPA students disliked videos as a replacement for traditional classes; they wanted videos to be available as a resource to review specific sections of content that they wanted to master. Owsten went further and found that low GPA students tended to use videos in a more comprehensive fashion to help bolster their fundamental knowledge, and to use videos as an opportunity to miss classes. This study however does contradict this part of Owsten's finding with 65% disagreeing that they used video availability as an opportunity to miss classes. When the high GPA and low GPA students were asked this question, there is only a small difference between them (2.3 versus 2.5 respectively) on

the Likert scale.

Conclusions and Recommendations

The advances in information technology have given rise to an opportunity for post-secondary educators to deliver course content via on-line videos. Administrators see this as an opportunity to increase revenue by getting content in the hands of a larger audience (Sabin et al., 2012). However, in the haste to move traditional classes to an on-line environment, the literature and 71% of students in this study find that videos may be hindering student engagement and learning (Brooks et al., 2011; Merkt et al., 2011).

This engagement challenge suggests that course pedagogy that use videos do not seem to have evolved as fast as the technology or the budget drivers, leaving 65% dissatisfied with the educational value, and 82% disliking them if they are used for on-line content. The implication is that the student, may reject courses or programs that use videos as a replacement for face-to-face classes, thus exasperating enrollment and revenue pressures.

However, if videos are positioned as supplementary resources, which this study and the literature finds to be a positive pedagogy, then then students tend to more highly regard the course overall. If administrators were to encourage video availability for all classes in a traditional course, then the best of both worlds may be met. Students could elect to use the video as reinforcement or flexibility to miss a class, and administrators could position the course as both a face-to-face and on-line delivery, thus assisting with the bottom line.

Regardless of the delivery mechanism, there are opportunities for more research on how videos can be more engaging as content. The literature suggests that technical

issues are now replaced with pedagogical hurdles (Chiu & Chiu, 2009; Dickson et al., 2012; Rabe Hemp, 2009; Gosper, 2011; Merkt et al., 2011; Kaltura Inc., 2014). The results of this study supports these findings with 89% of students reporting no technical issues, but 82% disliking their use a replacement for face-to-face classes, it becomes clear that if the intention of videos is to deliver engaging content for on-line instruction, then research is needed on how this can be done efficiently and effectively.

Limitations

Respondent bias. The instrument was presented to all students in the faculty of business at the college. The nature of the instrument offering, given the blended learning environment at the college, may have attracted students with specific attitudes about the use of videos, thus skewing the results. In addition, of the twenty programs represented in the results of this study, there may be programs where video use is significantly higher or lower than the average, which could influence respondent bias towards the instrument.

Respondent experience. Furthermore, since the instrument was presented to all business students in early October 2014, the first semester students had only experienced the use of videos for approximately four weeks into their program. This low amount of exposure may have skewed the results in a manner that may have made the conclusion less credible. The researcher attempted to control for this lack of video experience and found there were no significant differences among freshmen and those with considerably more experience with videos.

Quantitative analysis. The significance of the difference between two sets of observations was not analyzed using advanced statistical techniques, and so interpretation by the researcher may have been different if these techniques were used.

Response Rate. And finally, the overall response rate of 6.08% from the sample set may be deemed insufficient to allow credible conclusions.

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Appendices

Appendix A - Instrument

Study Title: **Usage Patterns of Course Videos by College Business Students**

Student's Name and Department: **Laurence Smith**
Contact information: **smith22l@cmich.edu**

Instructor's Name and Department: Dr. Mike Stacey (stace1mj@cmich.edu)

Introductory Statement

My name is Laurence Smith. I am conducting research for my thesis for my Master's Degree at Central Michigan University.

What is the purpose of this study?

The goal of my research is to determine business student acceptance and usage patterns with videos.

What will I do in this study?

If you decide to participate in my project, you will complete a short survey on-line. The questions pertain to your use of videos in courses you have, or are currently taking at the college. I will also ask three questions regarding the program and semester you are in, but you can elect to not answer. I will also ask you your GPA range in order to help me better understand and characterize video usage behavior. You can elect to not answer this question.

How long will it take me to do this? This survey consists of 15 questions and should take about 3 or 4 minutes. You can exit the survey at any time.

Are there any risks of participating in the study?

This is a completely confidential survey. You are not tracked in any way. Your computer is not tracked. There are no identifiable questions that can be linked to your identity. Your email address is not be linked to your response. The survey is on-line and all responses are safe guarded.

Although I am the instructor of some of you, your decision to participate or not to participate in this project will not jeopardize your position in any way because I will have no way of knowing who participated and who did not participate.

What are the benefits of participating in the study?

Videos are a big part of many courses and your response will help gain knowledge of the value of videos when used in courses.

Will anyone know what I do or say in this study (Confidentiality)?

Your confidentiality is guaranteed. There are no tracking mechanisms that can link you to your responses.

Will I receive any compensation for participation?

There is no compensation for participating. If you would like to view the summary results of this study once completed, please contact myself at: smith22l@cmich.edu

Who can I contact for information about this study?

Please use the contact information at the top of this page.

You are free to refuse to participate in this research project or to withdraw your consent and discontinue participation in the project at any time without penalty or loss of benefits to which you are otherwise entitled. Your participation will not affect your relationship with the college.

My return of this survey implies my consent to participate in this research.

If you are not satisfied with the manner in which this study is being conducted, you may report (anonymously if you so choose) any complaints to the program Director, Mellissa Brun by email: brun1m@cmich.edu or phone 989-774-3784.

Please select:

I do **not** want to take this survey. >>>>>>>> Survey exits

I will answer this survey. >>>>>>>> Survey continues below

1. In a typical course with videos, what was your impression of their usefulness?
 Answers:
 / Not at all useful / Slightly useful / Moderately useful /
 Very useful / Extremely useful /
 Comment:
2. Please rate the quality of the typical video.
 Answers:
 / Very poor / Poor / Average / Well done / Excellent /
 Comment:
3. Were there technical difficulties viewing the videos?
 Answers:
 / Frequently / Most of the time / Occasionally / Never /
 Comment:
4. Please rate the typical length in time of the average video.
 Answers:
 / Too long / Long / About right / Short / Too short /
 Comment:
5. Videos are often used in blended courses. If you have been at the college from more than one semester, please indicate how many times you watched videos during the typical blended course.
 Answers:
 / Never / 1 to 5 times over the semester / 6 - 10 times / 11 - 15 times /
 Over 15 times / Not applicable /
 Comment:
6. Please rate the reasons you watched videos in a typical course?
 - A. Videos allow me the flexibility to miss classes
 - B. To review content I did not understand that well during class
 - C. Viewing the videos was a requirement of the course
 - D. I only watched videos before major tests and exams
 - E. Videos are better than the face-to-face class
 - F. There were grades assigned to learning the video content
 - G. I didn't watch the videos in most of my courses
 Answers:
 / Strongly Disagree / Disagree / Neither Disagree Nor Agree /
 Agree / Strongly Agree /
 Comment:

7. What semester are you in right now?

Answers:

Semester 1 / Semester 2 / Semester 3 / Semester 4 / Semester 5 / Semester 6

/ I do not want to say /

8. What program are you in?

Answers:

/ Accounting / Advertising / Business / Business Administration / Business Foundations /

Financial Services / Human Resources / Insurance / International Business Management

/ Marketing / Office Administration - General / Office Administration 1st Year Common /

Office Administration – Executive / Office Administration – Legal / Office Administration –

Medical / Public Relations / Small Business & Entrepreneurship / Tourism and Travel

/ I do not want to say /

9. Can you tell me how well you are doing in your program: What is your Grade Point Average?

Answers:

/ Failing (less than 50%) / Pass (50-60%) / Average (60-70%) /

Above average (70-80) / Excellent (over 80%) / I do not want to say /

Appendix B – Administrative Approval

Smith, Laurence

From: Poirier, Wayne
Sent: September-02-14 5:15 PM
To: Smith, Laurence; Matthews, Rachel
Cc: Horton, Alison; Domenicucci, Art; Cooper, Jane
Subject: RE: Request to survey students for thesis project

Expires: March-01-15 12:00 AM

Hi Laurence,

I am happy to support Administrative Consent for this project. You will need this form to be submitted to me for sign off and then that needs to be included with your REB application

Hope this helps. There is a REB page on the web site for you to refer to and I believe it has samples (if not I can find one for you).

Wayne Poirier
Vice-President Student Services
T. 905-575-1212 Ext. 3174
F. 905-575-2313
Assistant to the VP Student Services, Stephanie Pickett –

Appendix C - Central Michigan University IRB Approval



RESEARCH REVIEW APPLICATION
FOR MSA 685/699 AND EDU 776 CAPSTONE COURSE PROJECT

Project title: Usage Patterns of Course Videos by College Business Students

Student name: Laurence Smith Student ID#: 581817

E-mail address: smith221@cmich.edu Work phone: 905-575-1212 x 3699 Home phone: 905-469-9461

Concentration: _____

Instructor's name: Dr. Michael Stacey Instructor e-mail: stacelmj@cmich.edu

Course: EDU 776 EPN: 22234744 Program center: Global

Do you intend to use human subjects or human subjects data in your project? Yes No

Do you intend to publish your project or present project results outside of your organization? Yes No

If you answered "yes" on both questions, you are required to complete CITI training and seek approval through CMU's Institutional Review Board (IRB). The IRB process requires registration in IRBNet and submission of your application materials and supporting documents through IRBNet. Please consult with your instructor and the appropriate program office for assistance.

If you answered "no" to one or both questions, you may use this form for your research review. Read the following directions:

Non-human subject research	Human subjects research
In the box below describe the purpose of your research, describe the data you plan to use, and specify the sources of your data (URL, organizational source, etc.) Required attachments: Permission letter on the organization's letterhead if the data is not available to the general public.	In the box below describe the purpose of your research; specify the source of your subject pool, the number of subjects, and the selection criteria. Specify your relationship to the subjects (co-worker, supervisor, work in same organization, etc.). Describe your research methodology. Required attachments: Copy of survey or interview questions, cover letter or consent form, permission letter on the organization's letterhead if the subject pool is not selected from a public source such as a phone directory or web page.

The research will endeavour to find out how students in a College faculty of business use videos provided to them for course content. Are the patterns of use linked to the video quality, student GPA or the particular program they are enrolled in?

Approximately 2,500 students across 15 different business programs will be surveyed and since all programs and courses in the faculty are delivered as hybrid format, all students have been exposed to videos as part of the pedagogy. Therefore, there are no exclusions in the sample population. The researcher is an instructor to approximately 300 students in the subject pool. There is an informed consent page on the survey site explains how the student will have their anonymity and confidentiality maintained with the objective of them to not feel coerced into providing positive responses.

The subjects will be invited to visit an on-line survey service named Survey Monkey. The invitation will come in the form of an email to the students' college email account. This initial email will provide a brief description of the study, but will not be the informed consent dialog. The email will originate from the College administration and the researcher will never have access to the subject's email address. The email message will contain a hyperlink to the researcher's survey on Survey Monkey. If the respondent decides to click the hyperlink their default internet browser will open at the informed consent page of the survey. This page will explain the details of the survey and describe the contact information, purpose and benefits, possible risks, confidentiality, anonymity etc. and finish with Accept or Not Accept buttons. If the respondent clicks Accept the survey will continue. If they press Not Accept the survey will exit. If a respondent accepts, they can still exit the survey at any time.

The survey is of minimal risk to the respondent. There is no tracking or linking of the responses to the respondent. The survey includes three questions that are intended to categorise the student in term of their program, semester and GPA range. Respondents may interpret this as a possible method of identification and so the survey has question selection options which allow the respondent to not answer, but still contribute to the survey's remaining questions. The respondent is asked 15 questions, including the 3 categorisation questions previously mentioned. All questions use a Likert scale and some provide an area for comments to allow the respondent to elaborate on their response.

On Survey Monkey the respondent's computer IP address associated with the respondent is a default setting that will be turned off as promised in the informed consent page.

The survey is estimated to start on September 28, 2014 and will be open for 7 days. It is predicted that there will be a 5% response rate or 125 responses during this period. These responses are stored at the Survey Monkey site which is has an access password. When the survey is completed, the researcher will download the responses as an Excel spreadsheet for analysis. The worksheet will be password protected and stored on a memory stick which is also password protected.



Please check all that apply:

- My project is work-related My project is related to my concentration My project is not related to my work or to my concentration. Please provide a rationale for a project that is not work-related or concentration-related:

Directions: Insert digital signature or type in your name as verification/approval of the information presented in this application. Your signature also confirms your commitment to appropriate research ethics while conducting this research: **Submit this form and applicable attachments to your instructor. Please wait for written approval prior to beginning data collection.**

Student signature: Laurence Smith Digitally signed by Laurence Smith
DN: cn=Laurence Smith, o=CMU, ou=CMU,
email=laurence.smith@cmu.edu, c=US
Date: 2014.09.09 22:36:18 -0400 Date: September 9, 2014

Student signature: Laurence Smith Date: September 9, 2014
(Please type or print your name.)

Instructor signature: Michael Stacey Digitally signed by Michael Stacey
DN: cn=Michael Stacey, o=CMU, ou=CMU,
email=stacey@cmu.edu, c=US
Date: 2014.09.17 16:52:10 -0400 Date: September 17, 2014


Instructor signature: Michael Stacey Date: September 17, 2014
(Please type or print your name.)

Program approval signature: Kaleb Patrick Digitally signed by Kaleb Patrick
DN: cn=Kaleb Patrick, o=Central Michigan University, ou=Business
Graduate Programs, email=kpatrick@cmu.edu, c=US
Date: 2014.09.16 15:33:30 -0400 Date: _____

Program approval signature: _____ Date: _____
(Please type or print your name.)

Appendix D - College Research Ethics Board (REB) Approval

**Research Ethics Board
CERTIFICATE OF APPROVAL**

PRINCIPAL INVESTIGATOR Laurence Smith		DEPARTMENT School of Business	NUMBER 14-006
INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT: College			
FACULTY ADVISOR (if student research): Mike Stacey, Central Michigan University			
SPONSORING AGENCIES: NA			
TITLE: Usage Patterns of Course Videos by College Business Students			
APPROVAL TYPE: DELEGATED <input type="checkbox"/> FULL <input checked="" type="checkbox"/>	APPROVAL DATE: Sept 22, 2014	APPROVAL PERIOD (YEARS): 1 Year	COMPLETION REPORT/ RENEWAL DUE DATE: Sept 22, 2015
CERTIFICATION The protocol describing the above-named project has been reviewed by the College Research Ethics Board and the procedures were found to be acceptable on ethical grounds for research involving human subjects. <div style="text-align: center;"> Approval of the Research Ethics Board by: Donna Rawlin, RN, BScN, MSc(T), PhD(student) Chair</div> <i>This Certificate of Approval is valid for the term indicated provided there is no change in the experimental procedures.</i>			