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Factors Influencing Faculty Use of Screencasting for Feedback

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Doctor of Education in Organizational Leadership

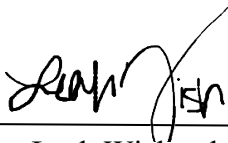


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Factors Influencing Faculty Use of Screencasting for Feedback

A dissertation submitted in partial satisfaction
of the requirements for the degree of
Doctor of Education in Organizational Leadership

by

Bailin Fang

September 2019

Dedication

This dissertation is dedicated to the memory of my father who lived a life of hard work for his employer, care of his family, honesty to himself, and kindness to everyone.

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Prior to this dissertation writing process, I believed that writing was a lonely endeavor, perfect for an introvert, and I would have dismissed the idea of it being a group effort. However, during the research and writing process, I have benefited tremendously from the help of many and I would like to acknowledge their support and contribution.

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Abstract

This study explored faculty concerns in using screencasting to give feedback, why they choose to adopt it, and what training and support would benefit them in the adoption of such a method.

This is a single embedded case study using a stages of concern questionnaire, semistructured and open-ended interviews, as well as media comment reviews as data collection methods. Some 21 professors from a southwestern private university participated in the research, representing 51 potential participants who have been exposed to screencasting for feedback through software ownership, training, or coaching. After the completion of this questionnaire, 16 participants were interviewed in depth, and five of them provided examples of their media feedback. A finding was that screencasting holds promise to give feedback in a residential university setting as it could enrich the cognitive and affective content of feedback. Faculty members were concerned mostly with the personal aspects of using screencasting feedback, such as time demand. Another finding was that professors make sophisticated choices when deciding modalities to give feedback; such choices depend on class size, the nature of content, the rules they use, and the division of labor. Recommendations include greater use by faculty and improved training by faculty developers to assist faculty in using screencasting to give feedback.

Keywords: screencasting, feedback, concern, innovation, faculty development

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Chapter 1: Introduction

Giving feedback to students is an important instructional activity but it is not receiving nearly as much attention as other aspects of teaching and learning, such as lectures or assessments. In the meantime, innovations in technology are changing the way feedback is given (Turner & West, 2013; Willis, Kestell, Grainger, & Missingham, 2013; Woodard, 2016).

Screencasting, for instance, is emerging as a new way to give feedback and it is important for universities to learn about the factors that influence a faculty member's decision in choosing to use screencasting to give feedback, as well as interventions that might help teachers in using this method.

Screencasting refers to

a method of capturing the actions performed on a computer including mouse movements and clicks on web browser links, in the form of a video. Using online screencasting tools, the video can be shared via e-mail attachment or a web link, or be uploaded to a server for continual use. (Carr & Ly, 2009, p. 409)

Many users refer to screencasting in its broad sense, including talking-head videos, which show the narrators on the screen. The term *screencast* in this study refers to any one of these types of videos: a talking-head video on the screen, a video of screen movements without including a talking head, and a video of both screen movements and the talking head. These videos can include synchronous ones in which students and teachers can directly talk to each other by using virtual meeting tools such as Canvas Chat, Canvas Conference, or Zoom. They can also be asynchronous videos that teachers record first and share with students later.

Teachers who use such media-rich feedback methods embrace it, while others do not use media tools to give feedback even though they may be aware of the method through training, software access, examples from others, and examples they see online elsewhere, such as videos

from LinkedIn Learn, formerly known as Lynda.com, a website specializing in video tutorials to professionals. Faculty, students, and staff from Catsville University (pseudonym), where this study was conducted, have access to the LinkedIn Learn website as the university has a campus site license for it. The university also purchased volume licenses for Camtasia, a professional screencasting tool, and professors can obtain the license when they send a request to the university's Media Lab.

There are numerous screencast videos in YouTube and Vimeo; sites like Khan Academy provide almost all their teaching using screencast videos. It is difficult for a professor to not have been exposed to any screencast videos. In 2004, the term *screencasting* was created to define the method of broadcasting one's screen activities, which makes screencasting a distinct form of communication, just like broadcasting or audio podcasting (Udell, 2004a, 2004b). Producing a screencast is also becoming easy with applications that the average faculty members can use. It is also common for an American university to have a media specialist or an instructional designer to assist professors with video production. However, as Rogers (2003) argued, not all advantageous innovations get diffused. The reasons behind faculty hesitation to use screencasting for feedback are not well known and they warrant a study. It is also important to learn about faculty experiences when they give feedback with a screencasting tool, as such knowledge can be used to inform instructional designers and faculty developers as they teach other faculty members to use screencasting to enhance teaching.

According to Siegel, Acharya, and Sivo (2017), faculty resistance to technology is a worldwide issue and such resistance displays itself in a number of ways, including passive resistance, in the form of "talk in the hallways," or it can be active, such as "sabotage or

quitting” (p. 60). In such resistance, both employees and their organizations suffer in productivity and morale, in addition to wasting investments in purchasing, maintaining and supporting new technologies. Siegel et al. (2017) surveyed faculty from four key departments in the College of Education and performed regression analyses on different beliefs and behaviors of faculty about the use of a particular technology, Live-Text, an ePortfolio system for assessment. The authors concluded that actual use of the technology was affected by positive attitude, familiarity with the technology, perceived usefulness, perceived ease, and perception of organizational support. Increased positive attitude and perceived ease, in turn, can result from the perception of ease and organizational support. Siegel et al. further suggested that future researchers should study positive users to find patterns in and insights about the ease of use and organizational support, which influence other users to adopt a technology (Siegel et al., 2017).

Statement of the Problem

Giving feedback through screencasting makes teacher comments more conversational for students and less stressful for them to hear as compared to written comments (van Haren, 2017). Screencasting provides multisensory elements to enrich learning (Ali Batel, 2014). Students can also watch video feedback multiple times to gain understanding (Bissell, 2017), thus increasing time on learning. Through this method, teachers can explain concepts in greater detail, complexity, and nuance (Bissell, 2017; Planar-Erta, Moya, & Simo, 2016), increasing the likelihood of *feed forward* for the improvement of future work (Brereton & Dunne, 2016; Cranny, 2016; Henderson & Phillips, 2015). Teachers giving feedback with screencast videos have more real-time presence (Brereton & Dunne, 2016). The method can also increase autonomy and scaffolding for the development of metacognitive skills (Hartshorn, 2008).

In the meantime, research has shown that there is concern about using text alone to give feedback. Cann (2014) claimed that students have apathy toward traditional text-based feedback due to its ineffectiveness. Text-only feedback also takes a toll on teachers' time, energy, and even health to write a large amount of feedback (van Haren, 2017). However, as the literature review section demonstrates, such conclusions are not always shared among faculty. One should view such observations critically as there is a difference between the content of feedback (feedback related to the subject matter being taught) and the modality of feedback (feedback given with text, audio, video, or a combination of them). The use of a particular modality does not necessarily make feedback better if it is poor in content; there can be strong feedback in any modality.

For residential universities, problems with text-based feedback increased as universities reduce the use of paper and physical spaces while increasing the number of off-site adjunct professors who teach from a distance (Borup, West, & Thomas, 2015). In the meantime, the increase of online courses requires cognitive and social presence from teachers and text feedback alone does not always suffice (Lowe & Lowe, 2018). Students need more than text comments for connectedness and coalescence to form a community of learning (Palloff & Pratt, 1999). I do not yet know the full spectrum of the factors that influence faculty decisions in adopting screencasting to give students feedback. Learning about such factors will help organizations to optimize educational technology choices and faculty training and support.

Most current studies on the topic are based on teachers' own uses of screencasting to give feedback in the courses they teach, especially lower-level courses in writing, literature, or English as a Second Language (ESL). Studies are lacking in other disciplines and upper level

courses (Grigoryan, 2017). There is also a gap in the literature about faculty decision-making processes in using the method, institutional adoption, and using screencasting in residential universities, where face-to-face class sessions could affect student perceptions of feedback (Borup et al., 2015).

Purpose of the Study

The purpose of this embedded single case study was to investigate the factors and concerns that influence faculty at the residential campus of Catsville University in choosing screencasting to give feedback to students, their experiences in giving feedback, and the type of support and professional development that could address their concerns. The study was also aimed at generating an in-depth understanding of the type of feedback that faculty often use and how to choose the appropriate media or combination of media to make such feedback effective. Faculty developers can use the results to create or improve professional development interventions to promote effective practices of feedback, especially in using media tools and resources. Understanding faculty choices about this feedback method will help educators optimize the methods for student feedback.

Research Questions

This is a study about faculty decisions regarding the use or nonuse of screencasting for student feedback. According to George, Hall, and Stiegelbauer (2006), while the world presents many stimuli, individuals do not always pay attention, have interest, or act upon them, depending on what these stimuli are and the personal backgrounds of those who receive such stimuli. These factors affect how individuals handle these stimuli. George et al. (2006) had the following definition for concern: “Whenever something heightens our feelings and thoughts, we are

registering *concern* about it” (p. 7). Specifically, I used the following questions to study the concerns professors have about using screencasting to give feedback, and more broadly, their decision-making process in choosing methods to give feedback.

RQ1. How do faculty members make choices about feedback they give to students?

RQ2. What are the experiences of faculty members at a southwest private university who currently use screencasting to give feedback on student assignments?

RQ3. What are the student feedback experiences of faculty members at a southwest private university who currently do not choose screencasting to give feedback on student assignments?

RQ4. What type of training and support would best address faculty concerns about using screencasting to give feedback?

Definition of Key Terms

Canvas. A learning management system (LMS) created by the company Instructure and used by Catsville University. All professors and students at Catsville have access to Canvas, which includes a media uploader tool to facilitate the storage of media, and a media comment feature in its grading application (see “SpeedGrader” below) for faculty to give comments in video or audio.

Concern. In this study, a term used in the context of higher education to describe a user’s heightened cognitive or emotional feedback on an innovation or its components (George et al., 2006). Unless otherwise explained, a concern is not necessarily a negative emotional response toward a stimulus as used in some other contexts.

Feedback. “Information provided by an agent (e.g., teacher, peer, book, parent, self, experience) about aspects of one’s performance or understanding” (Hattie & Timperley, 2007, p. 81). In this study, this refers mostly to feedback from teachers to students. In the study, I focused mostly in the modality of feedback giving, not the content of the feedback.

Feed forward. A method of using annotations and comments mainly to improve future work, in contrast to feedback (Brereton & Dunne, 2016; Cranny, 2016; Henderson & Phillips, 2015).

Instructional design. Instructional design refers to “the systematic process of translating principles of learning and instruction into plans for instructional materials and activities” (Smith & Ragan, 1993, p. 2). It was also designed, from the perspectives of results, as “the process of arranging for learning to happen more safely, certainly, thoroughly, and expeditiously than might otherwise happen” (Allen, 2007, p. 26).

Learning Management System (LMS). A software platform for teachers to manage their instructional content and activities in face-to-face, blended, and online courses. The main functions of an LMS include posting instructional content, managing assignments and assessments, assigning grades, and facilitating online interactions with students and among students. Examples include Canvas, Blackboard, Moodle, Schoology, and Google Classroom. The term LMS replaced the earlier *course management systems* (McGee, Carmean, & Jafari, 2005).

Multimedia. Delivery devices (such as computer screens, speakers, or projectors), presentation modes (use of written or spoken words, pictures), or sensory modalities (such as auditory and visual senses; Mayer, 2009, pp. 8–10). In this study, this term mainly refers to a

combination of audio and video as a presentation mode, with or without the use of the written text. Screencasting was considered a type of multimedia that includes audio and video components, sometimes with text existing in the assignment being commented on, or in subtitles or captions in the screencast video.

Multimedia instruction. “The presentation of material using both words and pictures, with the intention of promoting learning” (Mayer, 2009, p. 5). In this definition, words include printed or spoken text.

Multimedia learning. The process of “learning from words and pictures” with words, including printed or spoken text (Mayer, 2009, p. 5).

Rubric. “A coherent set of criteria for students’ work that includes descriptions of levels of performance quality on the criteria” (Brookhart, 2013, p. 4). The Canvas LMS includes a fixed-point rubric that lets teachers assign a fixed point grade for each criterion, such as 0, 1, 3, and 5 on a scale of 5. Canvas also has a free-form rubric that allows teachers to assign any grade within a range, for instance, 3.5 on a scale of 5.

Screencasting. A method “of capturing the actions performed on a computer including mouse movements and clicks on web browser links, in the form of a video. Using online screencasting tools, the video can be shared via e-mail attachment or a web link, or be uploaded to a server for continual use” (Carr & Ly, 2009, p. 409). Screencasting in this dissertation also includes screencast episodes that have a talking head only, without capturing cursor, mouse, finger, or stylus touch movements when produced on the computer, or tab and touch movements on mobile devices. Students can watch these videos via asynchronous communication with the help of a platform for video sharing, including an LMS. In the research literature and in this

study, screencasting is used interchangeably with the term *screencasts* or *screencast*. If a teacher produces a series of such screencast videos, each segment can also be referred to as a screencast episode or a media comment.

SpeedGrader. A feature of Canvas that allows teachers to grade student work. It includes the ability to mark up on student assignment and make text, audio or video comments.

Studio. A media platform within Canvas that faculty can use to produce, store, and share screencasting videos.

Veedback. The use of video to give feedback, often with a screencasting tool such as Jing, Screencast-O-Matic, Camtasia, Showme, or Explain Everything, and often in combination with some annotation tools and devices (Sabbaghan, 2017).

Assumptions

Part of the reason for conducting this study was to identify what could be done to improve faculty adoption and use of screencasting. In this study, I assumed that not all skill or knowledge issues would be seen as problems to be addressed with training. One can use support, job aids, or changes in job to address deficiencies in a certain skill performed infrequently (Romiszowski, 1995). When frequent concerns become known through this study, it could be possible for universities to design appropriate interventions.

In this study, I assumed that online courses are capable of helping students achieve learning outcomes. A meta-analysis completed by the U.S. Department of Education concluded that on average, students in online learning slightly outperform students who receive traditional, face-to-face instruction (U.S. Department of Education, 2010). Professors in this study did not typically teach online, but they had the same tools and training to use screencasting in face-to-

face or hybrid courses. Having more of them teach online courses in the future could increase university course offerings to students beyond barriers in time, geography, and paces of learning (Simonson, Smaldino, & Albright, 2003). Part of the reason for searching for a better way to give feedback is motivated by the hope to remove barriers to the design and development of online courses, which benefits students, faculty, and the institution.

Summary

I investigated factors that influenced users and nonusers of screencasting as a feedback method. The study will benefit faculty efficiency in giving feedback. It will benefit students in receiving feedback that becomes more effective and efficient with additional tools. It will benefit organizations in identifying factors that affect faculty adoption of educational technology, pedagogical innovations, and ways to improve support and training.

In the next chapter I explore what the literature has said about the disadvantages of giving feedback using text only, the benefits of screencasting, emerging concerns, common considerations in the adoption of new technology, and faculty concerns in adopting new technologies.

Chapter 2: Literature Review

Through the present study I sought to understand factors that influenced faculty in using screencasting to give feedback, for both users and nonusers, so that it is possible to improve faculty development and support, and ultimately, learning for students. For this purpose, I present existing research literature about the need for better feedback, problems with traditional text-based feedback, benefits of giving feedback with screencast videos, concerns with using screencasts, perspectives on faculty adoption, and perspectives of faculty concerns. Using this progression of topics and the existing literature, I attempt to make a case for the study. In addition, I discuss three theories that I used in the study: extended activity theory (EAT), diffusion of innovations theory (DOI), and the concerns-based adoption model (CBAM).

I identified research literature for this study by performing searches in EBSCO, a comprehensive database for social science researchers, using the search terms “screencast” and “feedback” in conjunction. I further filtered the search by limiting results to peer-reviewed journals between 2010 and 2018, the last eight years of research related to screencasting in feedback. As of December 12, 2018, such a search returned 21 results. After 2019, I used the keyword “screencast” to have the Researcher mobile app send me additional papers related to screencasting. I used such findings to enrich the literature review section and to keep current with research related to screencasting. I went through all these papers, read the abstracts, and saved the ones directly related to this study—teachers giving feedback to students using screencasting—and removing results that dealt with peer feedback, student-generated screencasts, or screencasting used for lecturing. Then I searched with the keywords “screencast feedback” with the same filters, and the search returned seven results. Combining the results, I

found over 20 papers related to the topic of using screencasting to give feedback, and most of such papers were used in this literature review.

As screencast video is a type of video, further searches were conducted using “video” and “feedback” as search keywords, 18,009 results from scholarly journals were identified for the 2010–2018 period, which shows that there is huge interest in using video as a method to give feedback, while research about screencast videos is just starting. I conducted additional searches using keywords “screencast” and “adoption”, or “screencast” and “concern,” but such searches returned no meaningful results for this study. This justified the need for a study as little research has been done regarding faculty decisions in choosing to use screencasting to give feedback. Finally, I searched for scholarly papers using the terms “concerns-based adoption model,” or “activity theory,” or “diffusion of innovation” to find uses of such models in current research and included the results in this review when applicable.

The Case for Effective Feedback

Many small private colleges and universities are struggling to survive as student enrollment declines and tuition rises while also facing the pressure to meet growing student expectations and expand services to stay attractive to prospective students (Krantz, 2018; Simon, 2017). To cope, these institutions often reduce costs by cutting staff and faculty members, using adjunct faculty, or overloading existing faculty members, thus increasing cases of occupational stress and hurting the quality of learning for students (Berg & Seeber, 2016). There is an increasing conflict between teacher resource limitations and student needs for personalized and effective feedback. Giving feedback face-to-face is becoming limited even in residential universities due to an increase in enrollment and the reduction or even elimination of physical

spaces (Borup et al., 2015). In addition, adjunct professors do not always have office spaces, which limits how much and how often they can give feedback as they traditionally do (Planar-
Erta et al., 2016). Because of these reasons, there is a case for improving the way teachers give feedback.

As institutions consider options to make positive changes, they often turn to technology as low-hanging fruit. As a result, more and more online courses and programs use LMSs and other technological platforms to expand student pools beyond geographical barriers, representing opportunities for cost reduction and revenue increases. A 2018 survey showed that, in spite of a general decline in college enrollment, distance education enrollments increased for the fourteenth straight year, with 14.9% of students taking exclusively online courses and 16.7% partially taking both online and face-to-face courses (Seaman, Allen, & Seaman, 2018).

As online programs grow in universities, awareness of quality control is also on the rise. A survey of six sets of quality standards of online courses indicated that all these standards share a common theme: For online courses to succeed, they have to include meaningful student-student and student-teacher interactions (Baldwin, Ching, & Hsu, 2018). The lack of such interaction, on the other hand, can hurt the credibility and effectiveness of online programs. The case of Western Governors University (WGU) may best illustrate the concern of the lack of interaction: In 2017, the Office of Inspector General (OIG) of the United States Department of Education released an audit report asking WGU to return over \$713 million in federal financial aid because there had been a lack of meaningful interaction between teachers and students (OIG, 2017).

According to the report,

for each of the 102 courses required to complete the school's 3 largest programs, we reviewed course design materials for evidence that each course was designed to offer

regular and substantive interaction between students and instructors, the key requirement to be considered a course offered through distance education. We concluded that at least 69 of the 102 courses were not designed to offer regular and substantive interaction with an instructor and, therefore, did not meet the regulatory definition of distance education. Instead, these 69 courses met the Title IV definition of a correspondence course (34 C.F.R. § 600.2). (OIG, 2017, pp. 2–3)

Traditional correspondence courses are characterized by teaching and learning through asynchronous written communication between teachers and students, usually using copy machines and the postal system. Such courses do not nearly mirror the rich interactions in face-to-face classes (Simonson et al., 2003). Presently, when one refers to an online course as a correspondence course, it carries a negative connotation, reducing such a course to an inferior form of education as shown in the report by the OIG (2017).

Feedback is an important component in the learning process, not just for online courses, but also for college education in general, including face-to-face classes. Chickering and Gamson (1987) listed providing students with prompt feedback as one of the seven principles for effective undergraduate education. Gagné (1977) included giving feedback as one of the nine instructional events to make up a lesson. Scriven (1967) advocated the use of formative assessment in teaching, which involves the giving of feedback. Effective feedback can reinforce retention of information students receive, correct misunderstanding, and motivate students to improve existing and future work. Comparatively, summative feedback passes a judgment on a person or program, often when it is too late to make any changes. According to the National Survey of Student Engagement (NSSE), students have lower satisfaction with teacher feedback and its promptness compared to other best practices in teaching (NSSE, 2018).

Good feedback should be manageable, meaningful, timely, and constant (Hartshorn, 2008). Sadler (2010) proposed that, to be useful, feedback should be construed in the light of

mutual responsibility: Teachers ought to be specific and communicative, while students should possess certain key knowledge, such as task compliance, quality standards, and various tacit knowledge to make good use of teacher feedback. Gibbs and Simpson outlined six qualities for quality feedback, including “sufficient in frequency and detail,” “focused on students’ performance . . . rather than on students themselves,” “timely,” “appropriate to the aim of the assessment and its criteria,” “appropriate in relation to students’ conception of learning,” and “attended to and acted upon” (Gibbs & Simpson, 2004, as cited in McCarthy, 2015, p. 154). Screencasting would help improve such qualities of feedback as it is a media-rich tool that makes feedback timely, detailed, individualized, and personal, and ultimately leads to student action.

Problems with Traditional Text-Based Feedback

There are a number of problems with traditional text-only feedback. Comments teachers write on paper can be illegible, especially for second-language users (Dunn, 2015; Morris & Chikwa, 2016; Sprague, 2016). Students also complain that feedback from teachers is insufficient, unclear, or untimely (Cranny, 2016; Cann, 2014). Another common problem is the lack of clarity in communication (Dunn, 2015; Morris & Chikwa, 2016; Sadler, 2010). The clarity issue is even more evident when teachers give complex explanations or demonstrations involving graphics, diagrams, or computer interfaces, or when teachers have to go back and forth through a longer assignment instead of marking a specific problem area. Traditional text-based feedback often increases students’ cognitive load as teachers use text as a default medium in the rest of their courses (Grigoryan, 2017; Kay & Edwards, 2012). Using text alone for commenting may also promote “fix”-oriented feedback (Bissell, 2017, p. 6) as students only fix the issues that have been highlighted, while teachers talking through an assignment with students would more

likely encourage students to assume the responsibility of thinking more deeply about the causes of issues in their assignment.

There are affective issues involved in giving feedback using only text. Due to the lack of visual cues and verbal elaboration, some comments, such as “awkward” may sound overly critical to students (Dunn, 2015). For lack of better visual and auditory cues, messages in text can sound harsher or more negative than what the teachers may have intended.

Some teachers are also frustrated that students demonstrate apathy and lack of action after seeing their feedback (Bissell, 2017; Cann, 2014). As feedback may come simultaneously with a grade, some students may review their grades and ignore comments, causing teachers’ efforts to be wasted, and with that, an opportunity for students to improve their work. Such tension hurts faculty-student relationships (Bissell, 2017; Cann, 2014).

Giving text-only feedback can also be time-consuming, negatively affecting a teacher’s workload or even health (van Haren, 2017; Cann, 2014). This problem is growing in severity as LMSs are increasingly used to collect and grade student work. Giving feedback often means teachers sit in front of a computer for a long time to write comments in student assignments, which can lead to teacher burnout. According to Cherniss, when a person loses balance between the demands of a job and the resources she has, it causes *role overload*, which subsequently leads to burnout, frustration or depression (1980, as cited in Fong, 1990, p. 102). Fong (1990) found that faculty members spend on average 59 hours per week on their job, leading to *quantitative overload* (p. 104). Teachers’ frustrations grow when they realize that some students may not read their feedback once they get the grades they want, while teachers can be more interested in students’ growth in learning.

Benefits of Screencasting for Feedback

Alternatives to text feedback include the use of rubrics that break down an overall evaluation of an assignment into detailed criteria, which in turn can be broken down into a qualitative grading scale using such terms as “novice,” “nearing proficient,” “proficient,” and “advanced,” or a sliding scale of 0–5 points for a single criterion (Brookhart, 2013). The use of rubrics greatly simplifies the process of giving feedback by chunking an otherwise messy collection of comments into meaningful categories. Instead of a general comment on an assignment, teachers can use open-ended comments for specific criteria in a rubric. However, rubrics in a digital learning environment are usually not linked to specific areas in an assignment that could use comments, and students may not know which comments correspond to which sections in an assignment. This is especially true for longer pieces of writing such as theses or dissertations.

Other alternatives to text-based feedback are audio comment or screencast to supplement or replace text feedback. A number of applications offer the functionality to give audio feedback. For instance, Turnitin is a popular plagiarism detection tool that teachers can use to give generic feedback using audio. Notability is another popular grading tool that helps teachers annotate a document and then generate an audio comment that students can listen to. LMSs like Canvas may also include a feature for teachers to make media comments using audio. Students do not actually prefer audio-only feedback to text feedback, as audio feedback is more difficult for students than either text or video to identify specific problems (Morris & Chikwa, 2016), whereas with screencasting videos, students can utilize visual cues in preview modes to skip to certain parts of the video.

In general, screencast videos show great promise, especially when teachers use them in conjunction with other feedback mechanisms, such as text comments and rubrics. The term screencast can be traced to 2004, when Udell searched for a specific term for the medium which shows how the user interacts with a software and narrates naturally as if in a conversation (Udell, 2004a). At this time, Camtasia already had a product called Camtasia Studio that helped users produce screen recording (Udell, 2004a). After readers had suggested a variety of names, Udell decided to call the method—screencast—and the term is now widely in use.

Since 2004, a great variety of screencasting technologies have become available, including Screencast-O-Matic, Jing, and Camtasia for desktop and laptop computers; and Showme and Explain Everything on mobile devices. There are also multiple applications for synchronous screencasting, such as Skype, Google Hangouts, Canvas Conference, and Zoom, which all have screensharing features. Compared to earlier days when users had to rely on hardware such as DVI frame grabber cards and dedicated converters, users can now record screencast videos on the same device using its existing audio and video capabilities. The software has also become easier to use. For instance, a Mac user using OS Mojave or later can simply press Command+ Shift+5 simultaneously to record a screencast video session. On an iPad, users can record a screen video by turning on the screen recording function in the control panel. Technically, it has never been easier to produce a screencast episode. No special recording equipment or spaces are necessary unless special circumstances, such as noise from a computer's fan, call for the utilization of external recording devices or facilities.

Some of the benefits of screencasting in giving feedback have been documented in research studies to include affective (Bissell, 2017; Borup et al., 2015; Henderson & Phillips,

2015; Sprague, 2016), cognitive (Ali Batel, 2014; Bissell, 2017; Cranny, 2016; Hartshorn, 2008; Planar-Erta et al., 2016), improved accessibility (Bissell, 2017; Jones, Georghiades, & Gunson, 2012), and other benefits such time-saving (Cunningham, 2019; Henderson & Phillips, 2015; Sprague, 2016; Woodard, 2016).

Affective benefits. Screencast-based feedback has affective benefits for the learners, including better tone of voice, better teacher-student rapport, and increased student motivation (Bissell, 2017; Borup et al., 2015; Henderson & Phillips, 2015; Sprague, 2016; Turner & West, 2013).

Tone of voice. Screencast videos include tone of voice that could soften criticism (Bissell, 2017). Bissell (2017) completed a qualitative study using Screencast-O-Matic to give feedback to first year Critical and Contextual Studies students in the Contemporary Performance Practice program at the Royal Conservatoire of Scotland to develop student writing, image analysis, presentation and research skills using questionnaires, focus groups and direct feedback from students, and evaluation by staff. She found that students prefer such feedback, as it is personal; it includes faculty tone and allows faculty to give both positive and negative feedback in a way that is not hurtful. In my own interaction with professors who do use screencasting to give feedback, they often say such feedback sounds less critical and more encouraging, which makes it more conducive for students receiving the feedback.

Lamey (2015) found that traditional written feedback is limited in usefulness for his class so he experimented with video feedback. He wanted to find out if video-based feedback produced better results. He sent out a qualitative survey to two philosophy classes to find out students' attitudes toward video feedback. Students' comments were overwhelmingly positive

about such feedback. They cited the ease to understand, better tone and gesture, greater depth, and larger quantity as strengths of video feedback. The one criticism students provided is that it initially was awkward to receive such feedback because they were not familiar with the format. As teachers use such videos more, and more teachers become adopters, the awkwardness will eventually wear off.

Teacher-student rapport. A number of studies found that students prefer video feedback and such preference improves teacher-student rapport (Bissell, 2017; Borup et al., 2015; Heath & Heath, 2017; Henderson & Phillips, 2015; Sprague, 2016; Turner & West, 2013). Screencast videos feel personal and individualized (Bissell, 2017). Using screencasting videos to give feedback communicates faculty support of the students as individuals. A study by Borup et al. (2015) showed that students found videos to be more elaborating, supportive, understandable, and conversational. They could improve student confidence (Bissell, 2017), reduce anxiety (Sprague, 2016), improve teacher-student rapport (Sprague, 2016), and renew teacher enthusiasm (Henderson & Phillips, 2015).

It is important to improve rapport between teachers and students. Ambrose, Bridges, DiPietro, Lovett, and Norman (2010) listed student development and course climate as contributing to learning, and they maintained that a positive climate would improve student learning. In particular, Ambrose et al. cited faculty-student relations as a contributing factor to course climate: “Climate is determined by a constellation of interacting factors that include faculty-student interaction, the tone instructors set, instances of stereotyping or tokenism . . . and the range of perspectives represented in the course content and materials” (p. 157). Screencasting

sets teacher-student interaction in an informal and conversational atmosphere, which contributes to the positive environment for a class.

Student motivation. Student preference and teacher-student rapport, in turn, increase motivation for students to improve their work. Heath and Heath (2017) described an experiment in which psychologist David Scott Yeager divided 44 seventh-grade student essays into two piles. For one group (control group), the teacher gave feedback saying, “I’m giving you these comments so that you’ll have feedback on your paper,” while for the experimental group the teacher left a note saying, “I’m giving you these comments because I have very high expectations and I know you can reach them” (p. 122). It turned out that 40% in the control group chose to revise their paper, while 80% of the experimental group chose to revise it. Heath and Heath (2017) had this to say about the phenomenon:

What makes the second note so powerful is that it rewires the way students process criticism. When they get their papers back, full of corrections and suggestions, their natural reaction might be defensiveness or even mistrust. The teacher has never liked me. But the wise criticism note carries a different message. It says, I know you’re capable of great things if you’ll just put in the work. The marked-up essay is not a personal judgment. It’s a push to stretch. (p. 123)

To sum up, for students to take suggestions for improvement, they have to care about such suggestions first, which depends to a large extent upon the way such suggestions are given and who is giving them. By using screencasting to give feedback, teachers can create a personal, informal, and individualized dialogue with students, and in so doing, improve the teacher-student relationship, which eventually motivates students to make improvements to their work.

Cognitive benefits. Screencast-based feedback has numerous cognitive benefits for the learners: They provide enhanced understanding, more details, greater complexity, and nuance in feedback (Arif, Cryder, Mazan, Quiñones-Boex, & Cyganska, 2017; Bissell, 2017; Hattie, 2015;

Henderson & Phillips, 2015; Kay & Edwards; Planar-Erta et al., 2016).

Cognitive load. Students often complete assignments in writing and most course readings exist in the form of written text, which can cause an overload of information processing. Screencast videos offer opportunities to diversify the method of information delivery. Researchers are starting to perceive screencasting as capable of reducing cognitive load (Grigoryan, 2017). Kay and Edwards (2012) also found that video podcasting can reduce cognitive load for students at the middle school level, after surveying 72 middle school boys and 64 girls from grades six through eight in Canada. The researchers found that students appreciated the clarity in the step-by-step demonstration of solving math problems. They enjoyed the control of pace. Their performances also improved following the use of such videos.

The reduction of cognitive load can be attributed to several principles for multimedia use proposed by Mayer (2009):

- **Temporal Contiguity Principle** – People learn better when corresponding words and pictures are presented simultaneously rather than successively.
- **Modality Principle** – People learn better from graphics and narrations than from animation and on-screen text.
- **Multimedia Principle** – People learn better from words and pictures than from words alone.
- **Personalization Principle** – People learn better from multimedia lessons when words are in conversational style rather than formal style. (pp. 267–268)

Screencasting embodies the first three of these principles by distributing feedback simultaneously among visual, verbal, and auditory information, and it is also addressing

individual students one at a time (personalization principle). Comparatively speaking, if a teacher only uses text in communications with students, it can overload the students' mental capacities for processing verbal information, causing the cognitive overload while underutilizing visual and auditory senses for students. Screencasting provides a balanced use of a learner's senses and information processing capacity.

Immediacy. Hyland (2013) conducted a qualitative study using interviews at a research university in Hong Kong. The researcher chose 24 students from four departments for the study to identify student perceptions of teacher feedback. Hyland (2013) found that high-quality feedback is characterized as being timely, individualized, focused, and aligned between student expectation and teacher practice, while low-quality feedback is perfunctory, delayed, and irrelevant to individual needs. Screencasting has the potential to deliver feedback in a timelier fashion, as teachers do not have to wait to release feedback until they see the students, by which time they may have forgotten the comments the teachers have made. Screencast videos can be delivered to students via an LMS almost immediately after they have been produced and uploaded. In Canvas and other LMSs, teachers can release comments on work before posting grades to students, which would encourage students to read or watch comments to improve their current and future assignments.

Specificity. Specificity is another advantage of video feedback. A study by Henderson and Phillips (2015) reported on student reactions to video responses from professors and claimed that students gave an overwhelmingly positive response to video feedback. The authors concluded that such positive feedback resulted from the timely, clear, educational, sensitive, ongoing, goal-oriented, and task-specific attributes of video feedback. To further benefit from

the specificity advantage, researchers for this study provided a structure for video feedback that functioned as a scaffold for teachers who might fear using video feedback. The structure included such elements as “salutation,” “relational work recognizing and valuing” students, general “evaluative summary,” “textual issues” such as grammar and punctuation, “commenting on the substance with an emphasis on feed forward,” and “valediction and invitation,” again addressing students, offering “congratulations and commiseration” (Henderson & Phillips, 2015, p. 56).

When student work needs improvement, they do not always need an entire overhaul. Rather, there are weak links to be strengthened or specific errors to be corrected. The affordances of screencasting to show and tell have the potential to give highly specific feedback in subjects such as visual arts, music, theatre and other performance arts, nursing, occupational therapy, and athletic training, to name a few. Teachers can use cursors (on a computer), finger, stylus or digital pen touches (on a touch screen mobile device) to highlight weak areas for improvement and strong areas for praise. Killingback, Ahmed, and Williams (2019) pointed out that the visual cues provide nonverbal communication that helps with students’ comprehension.

When teachers use videos to give feedback, it also models the way videos can be used to improve individual performances. Some video solutions allow teachers and peers to comment on specific parts of a video, leaving visual cues to skip to sections where viewers should pay special attention. This is especially helpful when diagrams and procedures are involved: When teachers are working on a mathematical problem step-by-step, students get a full and direct exposure to the way teachers think in the problem-solving process (Kay & Edwards, 2012).

Individualized learning. Specific feedback given in screencast videos can address individual needs better than generalized group feedback often given in class, thereby boosting individualized learning. The study by Henderson and Phillips (2015) highlighted that video feedback can be more student-specific. Jones et al. (2012) conducted a mixed-method study in a British university surveying 75 undergraduate students, their tutors, and 119 MBA students, 75% of whom came from India. The researchers alternated the use of paper-based feedback and video-based feedback over a two-year period. The study revealed that students perceived video feedback favorably, citing such reasons as extra opportunities to teach, personalized learning, closeness to students, quantity of feedback, time-saving, and accommodations for dyslexic learners and students who do not speak English as a first language. As shown in these studies, screencast video, as a type of video, puts the control in students' hands so that they could skip parts they have already mastered and spend more time reviewing areas where they particularly struggle, and this control is a key ingredient in individualized learning.

Multiple modality. Screencast videos present advantages for language learning that benefits learners; the multimodal format exposes language learners to visual, verbal, and auditory format all at once. Ali Batel (2014) conducted a quantitative experimental study of six Saudi Arabian students studying English as a Second Language at the University of Arizona. These six students were divided into two three-member groups that were comparable in gender composition and age distribution. In the first stage of the study, the experimental group viewed 10 minutes of a movie based on a book while the control group read the corresponding part of the book. Both groups were given tests based on the content they had been exposed to. In the second stage, the two groups watched a different section of the movie, or read its corresponding

part of the book, and their modes of exposure were reversed, with the group previously viewing the movie switched to reading while the reading group switched to viewing. Again, the researcher gave a posttest. In both cases, the movie group outperformed the text group in test scores, showing that watching a movie can increase student understanding because of the use of visual aids, multiple delivery modes, and increased student motivation. The study was focused on video lectures for ESL students, for whom videos are particularly useful, but the same conclusions should apply to video feedback, as it also has the same multiple modalities that benefit language learners by immersing them more fully and holistically in the language environment.

Enhanced understanding. The use of video, in general, has the potential to enhance understanding of complex phenomenon. Arif et al. (2017) conducted a quasi-experimental study of 159 students who were given video vignettes of patient-pharmacist encounters to watch as part of a cross-cultural communication training in a college of pharmacy in Chicago. After the training, students were given surveys to reflect on the use of video vignettes as compared to text reading as an instructional method. Arif et al. found that a majority of respondents preferred video vignettes, which they believed helped them understand cross-cultural concepts. The facilitators of the training workshops in which the video vignettes were shared also believed that the videos made the workshops more interactive by revealing cultural biases and barriers in a more concrete way. The study's results reaffirmed the utility of videos as a teaching method, which is promising for future studies of video use in teaching and learning.

Student autonomy. When used as a method for feedback, videos have functions such as pausing, rewinding, and forwarding that give students some individual control, which not only

facilitates individualized learning but also increases student autonomy. Students can rewind and watch video feedback multiple times to deepen understanding (Bissell, 2017), or pause the video to apply the feedback and revise their work (Cranny, 2016). As teachers explain and show the thematic or structural issue of an assignment in a screencast, students become more autonomous and self-regulated in learning by incorporating the suggestions on their own, rather than being spoon-fed fixes for specific problems (Hartshorn, 2008).

Alvira (2016) shared a qualitative action research project that was aimed at answering this question: “What is the impact of coded written feedback, within the context of process writing and with researcher-student short oral feedback using screencasts, on the improvement of writing narrative and descriptive paragraphs?” (p. 80). Alvira used pre- and poststudy questionnaires and writings from students to study teacher feedback to students during the writing process. The results show that the use of screencasts increased student autonomy, teacher scaffolding, and overall writing performance. The author encouraged other second language teachers to use similar written and oral feedback to improve writing (Alvira, 2016).

Transparency. Hattie (2015) promoted the idea of visible learning, which means that learning is best accomplished when faculty clearly demonstrate what they expect and students demonstrate how they understand what they learn. Hattie synthesized over 1200 meta-analyses to identify the factors that affect student learning. The meta-analyses included 65,000 studies and about a billion students (Hattie, 2015). He found that almost all interventions showed positive results, which prompted him to rank the size of the effects to find which methods work best. To maximize the impact, teachers should inform students what success looks like, and that teachers should align such success with assessment and teaching. Teachers as a group should also become

skilled evaluators to seek feedback, interpret such feedback, and use such feedback to improve their work. Though his concept of visible learning does not refer to screencasting specifically, screencasting is visually easy to demonstrate, and it should make it easier to facilitate visible learning. Screencasting is a holistic way to communicate to students about teacher expectations. In some cases, students may also use screencasting to communicate with faculty about what problems they face. Such communication may also help faculty clearly identify what problems or challenges students face.

Feed forward. Literacy consultant Rita van Haren analyzed the traditional feedback method using the initiate-respond-evaluate approach and she found that traditional methods of feedback were time-consuming as it actually creates multiple scenarios for one-to-one teaching. She suggested that this had a negative effect on teacher workload and even their health (van Haren, 2017). She recommended that feedback should be informal, using technological applications to make the feedback process easier, and feedback should be forward-thinking and formative (van Haren, 2017).

Screencast feedback also increases the likelihood that students will act upon the feedback, turning feedback to *feed forward* (Brereton & Dunne, 2016; Cranny, 2016; Henderson & Phillips, 2015; Jones et al., 2012; Planar-Erta et al., 2016). As students listen to faculty advice on changes to be made, students can incorporate changes as they watch. This often produces better work for assignments with multiple phases. Timeliness in receiving feedback increases the likelihood of feed forward, while delays may cause feedback to be ignored because students may become distracted by other things before the next assignment is due. If a teacher releases a grade earlier than the feedback, and the grade satisfies the students, there is also less motivation for

students to make changes. If teachers give feedback toward the end of the semester when students have calculated their grades, some may choose to do nothing for further improvement.

In contrast, there is a perception of teacher screencast feedback being real-time, which leads to more feedback being incorporated in improving future work (Brereton & Dunne, 2016). Some students and teachers still prefer feedback in a face-to-face setting, but given the limitations of time, space, and logistics, such as scheduling, giving feedback using screencasting may be the next best choice. The above-mentioned emotional benefits, such as tone and teacher-student rapport, contribute to a higher willingness to improve future work. Teachers giving feedback in the form of a screencast show that they care.

Planar-Erta et al. (2016) combed through existing literature about feedback and proposed using the feed forward mindset to rethink feedback, make it personalized, timely, and focused on learning processes. They specifically recommended using action research to study instructors' attitudes toward feedback based on the researchers' concern that emerging feedback models may be student-oriented, a vision that may not be aligned with that of teachers themselves. In the meantime, while other studies have found positive student reaction, Planar-Erta et al. (2016) were interested in finding if student preference translates into learning outcomes. Furthermore, they would like to see research that investigates what specific aspects of feedback promote teacher-student dialogue.

In spite of its usefulness, feed forward does not automatically result from the use of screencast videos. Having explicit directions or structure in videos should help students make informed decisions in their future work. Jones et al. (2012) included a process flowchart for giving feedback using this new method: Students submit their assignment through a virtual

learning environment, teachers read the assignment, produce a video feedback, and upload this feedback to the virtual learning environment for students to access. Step 5 seems to have many possibilities, allowing teachers to mix videos with many other elements, but novice users in screencasting can start with a simpler method, such as simply recording themselves talking, until they become comfortable to include more components.

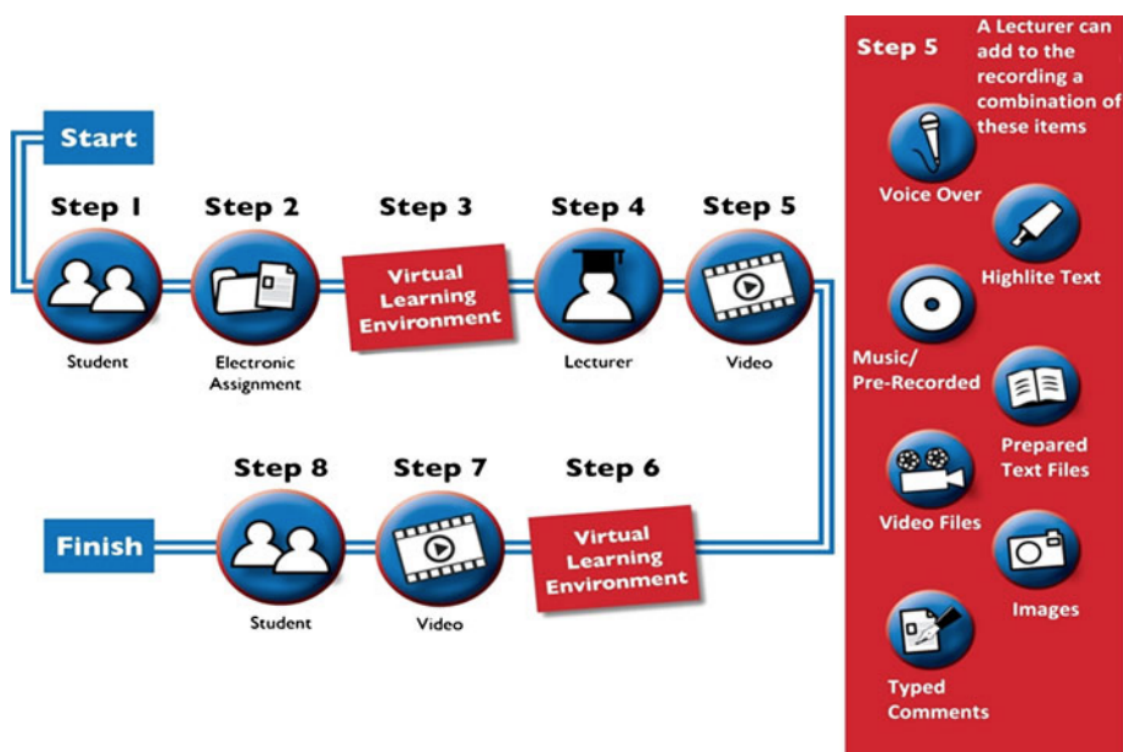


Figure 1. Screen capture digital video feedback procedure. From “Student feedback via screen capture digital video” by N. Jones, P. Georghiad, and J. Gunson, 2012, *Higher Education*, 65(5), p. 597. Copyright 2012 by Springer Science + Business Media B.V. Reprinted with permission.

Special accommodations. Screencast videos can also help certain groups of students, such as second language learners (Sprague, 2016) and students with a physical or learning disabilities such as dyslexia (Bissell, 2017; Jones et al., 2012), though the same method can

create issues for others. For instance, videos without closed captioning may cause difficulties for students with hearing difficulties. Having closed captioning offers an alternative way to access what is being said in a video, including screencast videos.

Saving time. One benefit often cited by teachers about screencasting-based feedback is that it saves time in grading, sometimes by up to a half (Woodard, 2016). Henderson and Phillips (2015) claimed that in speaking, a person produces approximately 625 words in five minutes; it would take far longer to type that many words. “One minute of audio is equal to six minutes of writing feedback” (Lunt & Curran, 2009, as cited in Cann, 2014, p. 2). Similarly, Cunningham (2019) mentioned that by using screencasting feedback, she could save 33% of her time on average compared to using text. Such time-savings may come after the initial learning curve for faculty to become comfortable with the method. Once they are used to it and save time in grading, their stress and vocational burnout could be reduced.

Emerging Concerns Using Screencasting

However, the literature has not reached a consensus that teachers and students always prefer screencast videos to text (Arif et al., 2017; Borup et al., 2015; Dunn, 2015; Ghilay & Ghilay, 2015; Grigoryan, 2017; McCarthy, 2015). Readers should note that some advantages, such as time-saving and multiple modality, could be perceived as advantages by some in some situations, while they could also be perceived as concerns or hurdles for others in other situations.

Mixed results. Both student and faculty perceptions can be mixed. Grigoryan (2017) used a mixed-method, quasi-experimental design to study first-year composition students at a for-profit university. The study showed no significant difference in student efficacy except in

purpose and audience, which are usually more complex than grammar, punctuation, and other writing issues that are easier to point out with written feedback. Using screencasting gives such feedback greater depth, and it communicates with greater effectiveness the faculty's rationale for giving the feedback. The paper also points out certain limitations of traditional text-only feedback, including time limits, lack of quantity and quality, negative perception of faculty criticism, and miscommunication. Grigoryan used the process-theory of composition claiming that writing improves when students increase practice and incorporate feedback in the revision. Guided by the cognitive load theory, Grigoryan also wrote that using screencasting in feedback could reduce the cognitive load on a student's working memory.

Borup et al. (2015) used a scaled survey, content analysis, and interviews to investigate three one-credit educational technology courses over a 14-week semester enrolling 71, 72, and 86 students, respectively. The *t*-tests showed no significant difference in perception between text-based feedback and video-based feedback. Text was seen as being more efficient. However, students and teachers both saw qualitative differences when these two feedback methods were compared. Students found text feedback easier to access, more efficient, and concise in wording. Teachers shared such opinions and added that texts were easier to edit. The study framed feedback in terms of personalized instruction when online courses can easily become mass-produced and distributed. The study divided the components of feedback into content and utility, timing and efficiency, as well as delivery and affective support (Borup et al., 2015).

Dunn (2015) randomly selected an upper-level college writing class over three semesters using a questionnaire to find if students preferred video feedback to text feedback, how students used feedback to revise writing, and how students interpreted feedback in the video mode. She

found that students saw both methods of feedback as sufficient, but they preferred video feedback given through Tegrity, a video production and hosting platform, because such feedback was easier to understand, more detailed, and more personal.

McCarthy's study (2015) compared three types of feedback using text, audio, and video for three summative assessments in the same course, and these feedback methods were evaluated with an online survey for students to reflect on their perceptions of the differences and the advantages and disadvantages of each method without concluding that one is better than the other two. Instead, each method had its own advantages in terms of cost, time, and affordance, and each method also had its own limitations. For instance, video feedback had the following limitations: large file size, heavier workload to produce, slows to distribute and requires technological tools to access. McCarthy concluded that in higher education, there should not be a standardized feedback model for all situations (2015).

Ghilay and Ghilay (2015) studied the use of screencasting in two computer classes in two Tel-Aviv universities to identify the characteristics of high-quality video clips and the advantages for using such clips during the learning process. Thirty students participated in the survey that consisted of 21 closed and open-ended questions. The survey did not find significant quantitative differences between the two classes but revealed a number of key qualitative success factors for screencasting, including thorough coverage of content, production by lecturers themselves, accuracy of content, and clarity of narration. The authors recommended using this method for other university courses, especially computer courses that require students to understand complex procedures.

All five studies showed no difference in results or perceptions between the text-only and video-enhanced feedback. However, authors claimed that there are qualitative differences between text and screencast feedback. The mixed results provide sufficient reason to examine the choices faculty make when given the two options and their concerns with each option.

Potential waste of time. Even though time-saving is often cited in support of using screencasting to give feedback (Cunningham, 2019; Henderson & Phillips, 2015; Sprague, 2016; Woodard, 2016), ironically time is also cited when teachers show hesitation in using screencasting for feedback. Borup et al. (2015) found that producing screencast feedback to be time-consuming, contrary to the claims of some other researchers.

In this study, I adopt a broad definition of screencast videos that may include talking-head videos. When talking to faculty about screencast videos, or video comments, talking-head videos were often what they had in mind based on what they initially told me. Sensitivity toward self-image may contribute to extra time spent on producing videos, which in turn may affect the adoption of screencasting because screencasts are also videos. Arif et al. (2017) highlighted that, though video clips are helpful in teaching, it would take huge resources and time to produce videos and the production may involve the hiring and management of actors, actresses, and a media team, which may be challenging to schools with tight budgets, and this hesitation could be addressed by promoting the production of less polished, quick-and-easy screencast videos for instructional purposes. Jones et al. (2012) pointed out that producing individual videos could cause faculty to spend extra time. Dunn (2015) concurred with this assertion and recommended future teachers use some generic videos if it accomplished the same purpose. One area that these

studies shared in common was the desire for further study to examine conflicting views about the time factor in using videos.

This disparity in understanding the time factor has a lot to do with self-perception and self-efficacy, as well as training and development. Naturally, there is an initial learning curve to be comfortable with such a way of giving feedback, but such a learning curve can be shortened with training, development, and initial guidance. Self-perception can also be changed. Some professors may be shy in front of a video recorder, or they want to be perfect in their recording, starting over again and again until they become satisfied with the video. However, students do not necessarily expect professors to be speaking without hesitation or pauses in their recording. It is more important to have students learn about the teacher's thinking process, including their hesitations in the thought process. Anders (2018) encouraged the acquisition of skills by learning from experts talking aloud about representative tasks. The method—thinking aloud—is used in a number of studies related to learning driving, art appreciation, and web searches, as a way to show to novice learners how experts think (Bauer & Schwan, 2018; Gerjets, Kammerer, & Werner, 2011; Kircher & Ahlstrom, 2018). Screencast videos are usually produced without a script, and it is a great tool to represent the thinking process of a professor who is the subject-matter expert in a field.

Limitations in video feedback. Henderson and Phillips (2015) stated that video feedback may work poorly for writing mechanics such as grammar and typos and they indicated that future researchers should focus on situations where video feedback has more potential of being effective. Similarly, Grigoryan (2017), whose study focused on writing courses, also emphasized that video feedback could be more useful for advanced issues in writing, such as

structure and content, while text feedback may be equally useful for local fixes. Text feedback is especially powerful with some technologically enhanced tools, such as Microsoft Word's revision mode, the comments feature of Google Docs, and the annotation tools of Canvas and Turnitin, a plagiarism detection tool that is now used more broadly for giving feedback. Such tools make it easy to correct local mistakes like grammatical errors, academic style problems, and other lower-level issues that do not require elaborate explanation. Turnitin even has features for teachers to create, store, and reuse comments for similar problems in different student assignments, while it is much more difficult to use screencast videos to do that. Some professors use text annotations to make comments and use screencasting videos for summaries, which could also be a good option to take in giving student feedback.

Distraction from multiple modalities. When it comes to advantages and disadvantages of using screencasting for feedback, one person's advantage can be another's disadvantage. Grigoryan (2017) saw the multiple modality of screencasting as capable of reducing cognitive load, but multiple modalities may overwhelm others. A teacher can give feedback in a variety of ways for the same comment, including grading of criteria following a rubric, annotations in text, as well as a general video comments. When multiple methods coexist, students may feel overwhelmed or distracted. Another source of distraction comes from video storage and distribution; If a teacher posts video comments in YouTube or Vimeo, students may wander away watching something else on YouTube while or after watching the faculty video.

Closed captioning, too, has some risk of distracting students. Federal or state laws often require captions for accessibility, but captions do not necessarily increase learning. Ozdemir, Izmirlı and Sahin-Izmirlı (2016) conducted a mixed-method experimental study to learn if the

use of captions interferes with learning and student motivation because of redundancy effects caused by the same message delivered through multiple channels. The researchers randomly assigned 109 sophomores at a university in Turkey to a group that used captions and a group that did not use captions. The researchers gave achievement tests as well as a survey to both groups after the viewing of the videos. The researchers found that there was no significant difference between the two groups in achievement and motivation. Qualitative analyses from the study showed mixed results: While some students commented that captions could be distracting, some liked the clarity that captions provided, and others found that, while the lack of captions can cause confusion, the issue can be remediated by watching the video again.

This is a significant study as closed captioning is studied in the United States mostly out of the need to comply with federal or state accessibility laws. Captioning was rarely studied in the light of the media redundancy principle. Ozdemir et al. (2016) found that the use of captions did not necessarily have any pedagogical advantage or disadvantage. Rather, a user may prefer captioning when there is a personal need, or skip it when he or she does not perceive of such needs.

Perspectives on Faculty Adoption

The method of using screencasting to give feedback comes with both advantages and disadvantages. Consequently, the adoption of this method may not follow a smooth path, or the “S” curve along which users populate from innovators, early adopters, early majority, late adopters, to laggards (Rogers, 2003). Screen capturing technologies have been around for nearly two decades, and even the term screencasting has been used since 2004 (Udell, 2004a; Udell, 2004b). Many users may call it something else, such as video tutorials, without referring to

screencasting. It is hard not to be exposed to videos produced with a screencasting tool, as screencasting is a very popular tool for software companies to produce tutorials. When a teacher gets a new phone or downloads new software, often the tutorials are produced with some type of screencast tool. The university of the present study has a site license for LinkedIn Learn, a web-based site to teach users various technologies, usually using screencasting as the predominant form for demonstration. Faculty, staff, and students have been constantly redirected to this site to learn new software. In addition, professors at Catsville University use the LSM Canvas, which has a SpeedGrader tool that has an audio or video comment feature. Given the exposure, faculty could consider screencasting as a choice for producing feedback on student assignments. Yet, professors at Catsville University do not always adopt the screencasting method to give feedback as often as they use Canvas.

There are many theories about factors that lead to the successful adoption of technology in teaching. Roger's diffusion of innovations (DOI) model identifies stages of adoption, types of adopters, as well as elements of adoption. The model famously divided up people into innovators, early adopters, early majority, late majority, and laggards (Rogers, 2003), showing the time sequence of adoption.

Puentedura (2012) created a SAMR model for technology integration in teaching that includes substitution, augmentation, modification, and redefinition. This model focuses adoption in terms of the depth of adoption as well as the impact an adopted technology has on the teaching activity. The motivation acceptance model (MAM) describes the actual use of a technological model as a result of "perceived usefulness," "perceived ease of use," and "attitude toward" the innovation, which are, in turn, results of "perceived ease" and "perceived organizational support"

(Siegel et al., 2017, p. 63). The MAM model, in turn, has roots in the CANE model—commitment and necessary effort model (Clark, 1999), which attributes teacher motivation in using technology to three factors: “personal agency (self-efficacy and support from organization), affect, and task value” (Siegel et al., 2017, pp. 60–61).

Researchers have also identified success factors for adoption from their own cases, not using any of these theories, even though some of their discoveries fit into descriptions of these theories. For instance, the College of Education at Southeast Missouri State University implemented a one-to-one technology initiative; the authors believed that the success factors include clear, justifiable goals, stakeholder investment, training and development, effective infrastructure, and pursuit of sustainability (Fridley & Rogers-Adkinson, 2015).

There are three drawbacks of the adoption models or perspectives focused on successful adoption. One of them is that it often gives the impression that an innovation is always better than its predecessor through the use of a hierarchy in their taxonomies of adoption, from innovators, early adopters, early majority, to late majority, and laggards. In reality, the choice between various methods can be situational, instead of one innovation consistently working better for everyone in every teaching situation. Even though the earlier part of this chapter argues for the benefit of screencasting, I would make a disclaimer that in certain situations simply using text is preferred. For instance, it is simpler and more efficient to use text in correcting grammatical errors in an assignment. A feedback method using screencasting, when poorly implemented, may also produce horrible feedback. The second drawback is that some of the adoption models may not be “descriptive enough to provide diagnostic capabilities for finding flaws in the implementation of technology” (Siegel et al., 2017, p. 60). A third drawback is that

models of adoption often cast faculty in a negative light for not adopting certain technologies. For instance, Rogers used words like laggard to describe a nonadopter (Rogers, 2003). Such language may further alienate such professors and create unnecessary friction between technology professionals and teachers. Jacobs, out of frustration with an educational application, simply calls promoters of such technologies as “snake-oil salesmen” (Jacobs, 2018), which is not particularly flattering to those who are true believers in the power of technologies to transform education.

Perspectives on Faculty Concerns

An alternative approach to look at adoption is to study people’s concerns that affect them in choosing a particular technology. Such concerns include technical inertia, software cost, process complexity (Cann, 2014), and time commitment (Vincelette & Bostic, 2013). According to Merriam-Webster dictionary, *concern* as a noun is “(a) marked interest or regard usually arising through a personal tie or relationship; or (b) an uneasy state of blended interest, uncertainty, and apprehension; (c) matter for consideration” (“Concern”, n.d.). In this study, we blend the (a) and (b) aspects of the dictionary definition and define a concern in the context of higher education as a user’s heightened cognitive or emotional response to an innovation or its components (George et al., 2006).

The concerns perspective can be seen as the lack of something from the view of adoption, the perceived positive outcome based on the assumption that an innovation is valuable. For instance, a study at the Louisiana State University found that the lack of time, motivation, institutional support, peer support, and perceived impact on student learning to be among the most important concerns for faculty nonuse of new technologies (Nicolle & Lou, 2008).

A study at the University of Adelaide in Australia found that lecture recordings, screencasting, and document cameras were the three most popular educational technologies for both students and faculty, but the usage among faculty was far from satisfactory because of training and support issues, lack of confidence, and competing demands in teaching and research (Willis et al., 2013).

Many of these concerns, such as time, may come from a perceived lack of information. For instance, a teacher may think that it could take up to ten hours to produce a five-minute video. However, with screencasting it could take only six to seven minutes to produce a five-minute video, with five minutes of recording and the other one or two preparing and uploading, once a teacher has invested some time learning the tool and developing comfort recording an episode. Uncovering all the concerns in their contexts is very useful for faculty developers and instructional designers as they work with faculty (Nicolle & Lou, 2008).

Appropriate interventions should also be able to relieve negative concerns from teachers. Ottenbreit-Leftwich, Glazewski, Brush, Aslan, and Zachmeier (2018) conducted a mixed-method study of 199 preservice teachers' concerns with technology integration using three stages in the study. First, preservice teachers were surveyed to identify their concerns with integrating technology. Secondly, they were shown videos of in-service teachers addressing these concerns. In the end, they were again surveyed about the same concerns. The study found that the majority of preservice teachers (58%) reported that they were less concerned about the factors they initially reported. In other contexts, using other video-based interventions, researchers and practitioners can replicate the process and result.

The Unknown Concerns

Beyond the adoption perspective, it would contribute to educational technology research to learn about the concerns about using screencasting to give feedback. One example is that some teachers may be screen-shy, and feel uncomfortable talking in front of a screen even with training and support. Other such concerns remain to be discovered. Such concerns, when discovered, should cause institutions to reflect upon institutional priorities and practices regarding such issues as software acquisition strategy, and it should lead to wiser decisions about faculty development. Even though instructional designers and faculty developers may see benefits in using screencasting to give feedback, they could revisit their agenda to promote it if teachers reveal concerns that may make it less a priority in the big picture.

By far the greatest numbers of studies about screencasting come from teachers of English writing, even though other fields could benefit from the use of the method as well, including STEM subjects (Hazzard, 2014), political science (Anson, 2015), and nursing (Brereton & Dunne, 2016). However, such studies are fewer. When studying the concerns, it is necessary to investigate an organization's practices in managed change and adoption of innovations where the studies have been conducted, though rarely in relation to screencasting as a feedback method. From the studies about English writing, the focus is often on the effectiveness of the method for the improvement of writing. I could not find specific studies about faculty concerns about the use of screencasting as a feedback method. However, some interesting directions have been pointed out by a couple of studies, especially regarding a faculty's sense of identity (Bandura, 1997; Cunningham, 2017, 2019).

Instructional designers and media specialists can be narrowly focused on the functional advantages of technologies or the pedagogical benefits of screencasting, while teachers may also be thinking about their personal identities as teachers when choices are made about the use of media in the teaching process. For instance, their concern may be tied to their self-efficacy, or the belief about their ability to exercise control (Bandura, 1997) over the technology, students, or the learning activity in general. Modeling and mentoring from more experienced professionals may boost their confidence and consequently their intention to adopt an alternative method to give feedback. Teachers may be concerned with their personal image when making videos, or they may be worried about their job security if many of their key talking points are made available in a video, kept permanent, reusable, and distributable, whereas face-to-face conversations can be repeated in an informal setting, without the fear of wider distribution. It is significant to uncover such concerns to inform faculty developers and change agents in diffusing a video solution.

Cunningham (2017) suggested that feedback given in screencasts is usually less directive, leaving room for student choices, while text feedback is more directive and authoritative. She suggested that teachers positioning themselves as authoritative would want to choose text to give feedback and teachers who would like to elucidate student action would want to choose video feedback. She disagreed that the choice between text feedback and screencast feedback is a matter of focus on either local or global problems, and goes on to suggest that the choice of mode leads to a shift in the very nature of feedback, which is in turn based on a teachers' self-perceived identity as either an authority in a field or a facilitator of student discovery.

Works by Cunningham (2017) and Bandura (1997) pointed to some directions for further investigation of factors that lead to adoption, as well as factors that cause concern. Such concerns came from anecdotes in my daily practices as an instructional designer, but more remain unknown. Cunningham (2019) also recommended that future researchers study how different feedback modes reach different student populations, and “how particular software can address student and instructor needs through features, choices, and integrations” (p. 238). A full study would help uncover factors and concerns in faculty decision-making processes.

Another unknown area in using screencasting to give feedback is the quality of feedback and how that can change or not change with the medium. Just because a faculty member uses video does not mean the feedback itself gets better. Similarly, using modality of text does not necessarily mean the feedback is worse. The theoretical framework of the extended activity theory (EAT), discussed below, was used to shed light on how different elements in feedback, including the content and the modality, could work together in the activity of giving feedback.

Theoretical Framework

Methodologically, researchers are usually influenced by research paradigms, which Kuhn defined as “the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community” (Kuhn, 1970, quoted in Maxwell, 2012, p. 41). I am under the influence of three theories: Extended activity theory (EAT), the concerns-based adoption model (CBAM), and the diffusion of innovations (DOI) framework (Engeström, Miettinen, & Punamäki-Gitai, 1999; George et al., 2006; Rogers, 2003). These theories either inform my thoughts in a general sense, or provide a framework to guide specific functions in the research process, such as providing the schema for generating codes.

Extended activity theory (EAT). EAT was originally proposed by the Russian cultural-historical psychology of Vygotsky, Leontiev, and Luria, but Engeström (1999) traced its intellectual lineage to classical German philosophy, especially Immanuel Kant and Georg Wilhelm Friedrich Hegel, Karl Marx's theory of labor, John Dewey's theory about objective conditions of activity, and Ludwig Wittgenstein's notion that meanings could not be understood except in specific language with its own rules.

In recent years, Engeström's name is most associated with activity theory. He served as the Professor of Adult Education and Director of the Center for Research on Activity, Development and Learning (CRADLE) at the University of Helsinki, and he was among the first in the West to combine Vygotsky's activity theory with cognitive science to examine teaching and learning activities.

In EAT, Engeström described that an activity should be the unit of analysis, instead of subjects or interventions. An activity would include subject, mediating artifacts, object, division of labor, community, rules, and outcomes. An analyst of the activity adopts a panoramic view "as if looking at it from above" (Engeström, 1999, p. 10). At the same time the analyst must select a subject, a member, "or better yet, multiple different members of the local activity, through whose eyes and interpretations that activity is constructed" (Engeström, 1999, p. 10). Two International Congresses for Research on Activity Theory have been held, first in Berlin, Germany (1986) and the second one in Lahti, Finland (1990; Engeström, 1999, p. 2). The theory has inspired sociocultural theory of mediated action and the theory of situated learning.

This theory could shift research attention from tools or subjects to a complex system, as "closed systems of thought does not work . . . human activity is endless, multifaceted, mobile,

and rich in variation of content and form” (Engeström, 1999, p. 20). In EAT, Engeström continued Vygotsky’s focus on tool-mediated human interaction but included additional elements such as rules of the community, as shown in Figure 2.

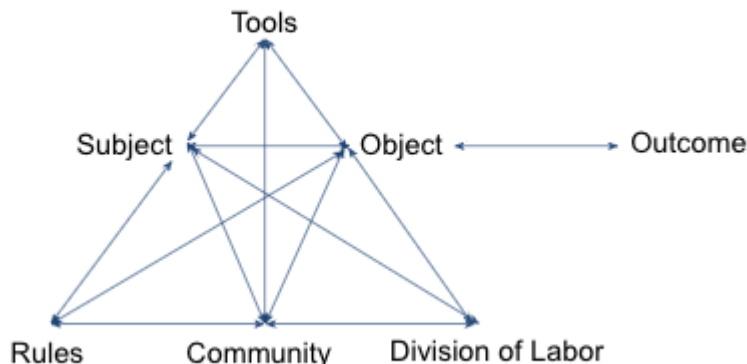


Figure 2. A diagram of extended activity theory (EAT) framework. From “Activity Theory and the Social Construction of Knowledge: A Story of Four Umpires” by Y. Engeström, 2000, *Organization*, 7(2), p. 303. Copyright 2000 by Sage. Adapted with permission.

Zurita and Nussbaum (2007) offered clarification about each of the elements in EAT in a paper applying the theory to collaborative learning:

Tools: by what means are the subjects performing this activity?

Subject: Who are involved in a common goal and carrying out this activity?

Object: Why is this activity taking place?

Outcome: What is the desired outcome from this activity?

Rules: Are there any individual or group norms, rules and roles governing the performance of this activity?

Community: What is the environment in which this activity is carried out?”

Division of labor: Who is responsible for what, when carrying out this activity and how are they organized? (p. 215)

This theory offers a clear framework for analyzing a tool-mediated human activity with each element clearly defined, even though the interpretations of *object* vary between Zurita and Nussbaum’s (2007) and Engeström’s. When Engeström illustrated the act of hitting a baseball,

the object includes the pitched ball, which seems to indicate that it is the thing that the subject works on (Engeström, 2000). The latter explanation offers greater clarity for studying screencasting, as there is a thing for the subject (teacher) to work on, namely the student assignment. The EAT framework offers nuance in understanding a complex, tool-mediated activity of giving feedback. In studying screencasting as a feedback method, I did not focus on the substitution of text with audio and video at the level of medium usage; I considered the act of giving feedback as involving multiple factors, including the change of other elements in the activity system. For instance, with the change of medium of delivery from text to screencasting, content in feedback may change, including such elements as personally addressing the student, giving encouragement, and possibly explaining distractions in the background if the recording gets disrupted. A feedback activity would also involve some community rules. For instance, the teacher may not show other students' work in the video as it may violate the Family Educational Rights and Privacy Act (FERPA). I used this theory in the discussions of the study to make sense of the data and analysis.

The EAT is already in use in analyzing videos, specifically synchronous videos. In a qualitative study, Çakıroğlu, Kokoç, Kol, and Turan (2016) attempted to understand how instruction takes place via a web conference-based course and the learning outcomes as perceived by learners. Fifty-six undergraduate students in a Computer Education and Instructional Technology program participated in this study while taking a course via Adobe Connect. The researchers analyzed session recordings and conducted interviews as data collection methods. The study concluded that the EAT notation system can be used to explore

web-conferencing systems, offering a strong rationale of using EAT as a theoretical framework to studying screencasting as feedback-giving activity.

Diffusion of innovations (DOI). The theory of DOI is the second theory I used to inform the understanding of faculty adoption of screencasting as a method of giving feedback.

According to Rogers, diffusion is “the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 5).

Rogers’s theory describes the innovation-decision process as consisting of the knowledge, persuasion, decision, implementation, and confirmation stages, effectively providing an operational process to diffuse an innovation. An innovation’s adoption is dependent upon its relative advantage, compatibility, complexity, trialability, and observability. Rogers (2003) divided adopters as consisting of innovator, early adopters, early majority, late majority, and laggards, for each of whom Rogers made suggestions to increase adoption. The various elements of adoption informed my interview questions and the coding of data. Even though this study is not based on the framework Rogers provided to design an intervention to increase usage of screencasting for feedback, the terminology coined by Rogers provided a vocabulary, popularized with constant use in the technology-adoption community, to discuss how an innovation becomes adopted or rejected among users.

Concerns-based adoption model (CBAM). One could also see the adoption as a process of removing hurdles and addressing concerns. The CBAM places the emphasis on barriers to people’s adoption of innovations as well as the depth of adoption. The theory includes constructs that are operationalized in three diagnostic tools: The stages of concern questionnaire (SoCQ), innovation configurations, and levels of use (George et al., 2006).

Levels of use shows the depth of integration of an innovation as being on any of the following levels: nonuse, orientation level, preparation level, mechanical use level, routine use level, refinement level, integration level, and renewal level (American Institutes for Research, 2015; George et al., 2006). This theory of technology integration is similar to the more simplified SAMR model of technology integration (Puentedura, 2012).

Innovation configurations are meant to create a map that shows the various components of an innovation so that participants of a change program can share the same perception of the innovation and what it requires, as well as the ideal, acceptable, and unacceptable levels of usage (American Institutes for Research, 2015; George et al., 2006). Each innovation may have its own innovation configurations map, depending on the complexity of the innovation itself, and the map can be produced from a qualitative process of interviews as well as observations.

The SoCQ was most useful for this study about faculty concerns in using screencasting to give feedback. SoCQ can be used to assess the following stages of concerns (see Table 1). The SoCQ provided the codes when analyzing data. In the end, I generated insights about factors that hinder the adoption of the innovation, so that it is easier to improve support or training offered to faculty.

Table 1

Stages of Concern

<i>Category</i>	<i>Stage</i>	<i>Definition</i>
Self	<i>Stage 0:</i> Unconcerned	The individual is not concerned with the innovation one way or the other.
	<i>Stage 1:</i> Informational Concern	The individual lacks general knowledge about the innovation.
	<i>Stages 2:</i> Personal Concern	The individual is concerned about personal demands, commitment or impact in adopting the innovation.
Task	<i>Stages 3:</i> Management Concern	The individual is concerned with the organizational aspects of adopting the innovation, such as impact on organizational structure or internal processes.
Impact	<i>Stages 4:</i> Consequence Concern	The individual is concerned with impact on people within his or her sphere of influence.
	<i>Stages 5:</i> Collaboration Concern	The individual is concerned with working with others in using the innovation.
	<i>Stages 6:</i> Refocusing Concern	The individual is concerned with changing the innovation altogether or substituting it with another innovation.

Note. From “Measuring implementation in schools: the stages of concern questionnaire” by A. George, G. Hall, and S. Stiegelbauer, 2006, p. 8. Copyright 2006 by SEDL. Used with permission from AIR, which merged with SEDL in 2015.

Summary of theories. I chose the three theories because they complement each other, focusing specifically on the individual (CBAM), the tool-mediated teacher-student interaction dyad (EAT), and the group (DOI) in explaining a fairly complex phenomenon of choosing a technology-enhanced method of giving feedback, which, as discussed above, involves teacher identity, student perception and receptiveness, choice of media, training and development, as well as organizational dynamics. Because I was exploring in this research and keeping an open mind about the themes, the three theories provided me with lenses through which to look at the rich data. EAT is about the social individual and how he or she interacts with another in giving feedback. DOI is a sociological theory about the behavior of social groups. CBAM is a psychological theory related to motivation with the individual as the unit of analysis. Together, the three theories allowed me to consider all these aspects and levels of analysis.

Significance of the Study

Screencasting is a beneficial method to give feedback that should be made known to more professors when related concerns have been appropriately addressed and strategies applied to increase its effectiveness and efficiency. However, not all great innovations become sufficiently diffused even if they have obvious advantages (Rogers, 2003). Low motivation for, or even resistance to the diffusion of new technologies is a worldwide problem (Siegel et al., 2017), which may cause technological investment to be wasted and ultimately discontinued, consequently hurting those who do use them. Siegel et al. (2017) have found that nonuse or resistance often result in negative perceptions, which this study was focused on discovering in the hope of eventually finding interventions.

Additionally, faculty burnout is already a significant issue in academia, often due to an overload on faculty work (Fong, 1990). Much of the literature about screencasting came from English or English as a Foreign Language (ESL) majors as teachers find it demanding to give heavy text feedback to assignments, which are often writings in text as well. This study helped to reveal the benefits of screencasting as well as concerns faculty have, so that better support or training can be supplied to address such concerns for a greater adoption of using screencasting to give feedback.

This study could help teachers see the benefits of screencasting so that they can be more motivated to teach online. Spector (2005) found that there is higher time demand for teaching online as most communication and collaboration are done with text, which is time-consuming to produce compared to simply talking to students. Such reservations hinder the university's effort in promoting more courses to be taught online.

Time demand for online teaching is especially high in giving student feedback. In attempting to reduce the concern for the extra time demand for online teaching, Van de Vord and Pogue (2012) completed a study asking face-to-face and online teachers to keep a time log of their average time spent per student per week. The study found that, in general, face-to-face teaching took more time, but in specific areas, especially involving giving feedback, assigning grades and solving technical issues, it took online teachers much more time. For instance, compared to 22.49 minutes per student per week on average, it took online teachers 47.84 minutes to evaluate student work. Recording grades took face-to-face teachers 2.03 minutes on average but 4.46 minutes for online teachers. Solving technical issues took face-to-face teachers and online teachers 0.11 and 0.86 minutes, respectively (Van de Vord & Pogue, 2012).

Screencasting represents a great opportunity to reduce the time to give feedback due to the increased volume of words one can produce by speaking while also improving the quality of feedback and, subsequently, student learning. If screencasting is more widely adopted as a method to give feedback, it should remove one significant barrier to the adoption of online teaching, thereby alleviating faculty concerns of higher time demands and the lack of interaction between teachers and students, and consequently increasing motivation for more faculty to teach online. Admittedly, there are also concerns about the potential learning curve, faculty perceptions, and potential waste of time that should be identified and addressed for wider and deeper adoption of the method.

Summary

This literature review reveals that traditional text-based feedback has problems, while there are affective, cognitive, and other benefits to using screencasting to give feedback, as well as concerns for using screencasting to give feedback. Existing literature also supplies many models to explain faculty adoption of technologies, but less is known about factors influencing faculty in using or rejecting screencasting to give feedback. It is important to study such concerns as it will assist universities in providing better interventions to support teachers as they consider using screencasting to give feedback, which ultimately will benefit students and institutions as well. In the next chapter, I explain how I designed my study, the rationale for the design, as well as concrete steps in the plan of the study.

Chapter 3: Research Method

Educational technology tools have advanced quickly with the potential to enrich student learning experiences through synchronous and asynchronous tools, as well as games, simulations and virtual worlds (Aldrich, 2009; Conrad & Donaldson, 2004; Finkelstein, 2006). Students and teachers both have easy access to video conferencing and the production of videos, including screencast videos. Professors often use such videos to broadcast lectures but not often to provide feedback to enrich student-teacher interactions and enhance individualized learning. Generally speaking, teacher practices lag far behind the capabilities of technologies. There is a disparity between software function and faculty adoption, which may have resulted from faculty concerns and group dynamics that should be researched (Willis et al., 2013).

Studying alternative ways to give feedback allowed me to gain an in-depth understanding of how student expectations, teacher workload, institutional effectiveness, and support services interacted with one another in a small private faith-based university. The primary goal of the present study was to identify factors teachers use in selecting feedback methods and concerns they had in choosing various media and methods in giving feedback. The study was useful in generating understanding about creative ways to improve the efficiency and effectiveness of giving feedback, which could in turn influence modalities of teaching and learning in general. The study has immediate use for customizing interventions for training, development, and support for a university's professors, administrators, and staff members. In the long term, the study could also lead to improved understanding of ways to give feedback in the teaching community, and ways to provide effective support and training among faculty development

professionals. This chapter lays out a design for the research so that meaningful and deep understanding can result from the research process.

Design and Method

Instructional designers work with faculty in designing or facilitating courses, but they also work with other departments who support teaching and learning, such as the media studio, technology helpdesk, and the computer technology department. From the instructional designers' perspective, teachers giving feedback using a particular technological tool can be a complex social activity. It is not simply a matter of one medium, such as video, having a natural advantage over another medium, such as text. Giving feedback using screencasting technologies involves varied subunits in an organization: (a) An educational tool is evaluated and purchased by the educational technology team/ (b) media specialists support the use of screencasting as it involves the use of media; (c) teachers choose feedback methods and they, in turn, receive evaluation from their chairs and deans through performance evaluations and from students through semester-end course evaluations; and (d) teachers talk among themselves about tool usage and best practices in their teaching. In this process, there is a division of labor among a community consisting of teachers, students, support professionals, and administrators, each of whom may have a different set of outcomes in mind. Studying one aspect or one type of stakeholder in the process would risk presenting only one part of the picture. The social dynamics demand a study in a naturalistic setting.

The EAT provides a framework to understand how an activity, such as giving feedback to an assignment, can involve multiple elements when it is mediated through the use of a tool, which in the present case is a screencasting application (Figure 3).

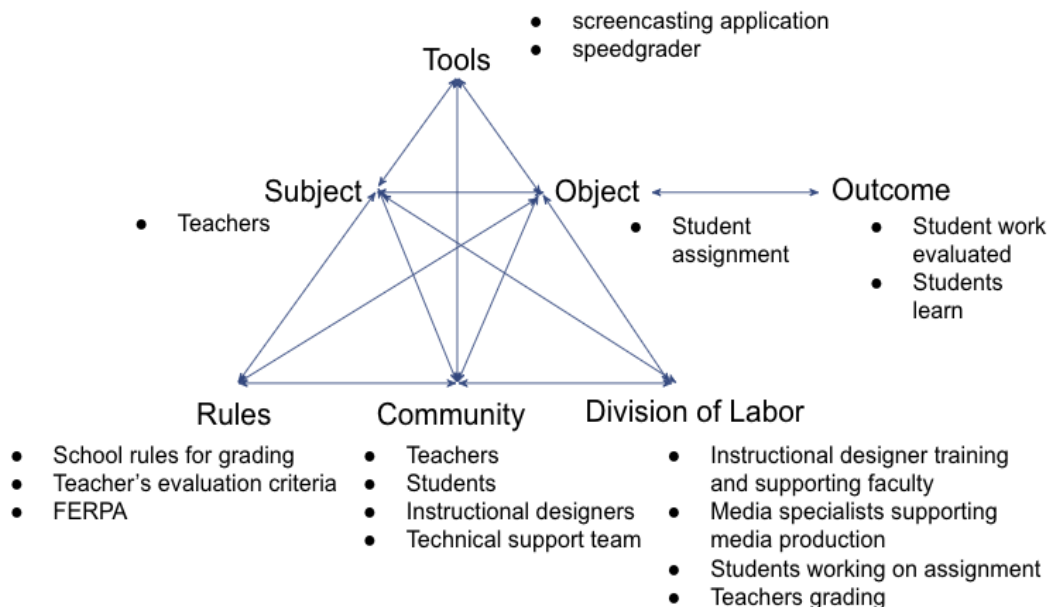


Figure 3. A diagram of extended activity theory (EAT) in screencasting for feedback. From “Activity Theory and the Social Construction of Knowledge: A Story of Four Umpires” by Y. Engeström, 2000, *Organization*, 7(2), p. 303. Copyright 2000 by Sage. Adapted with permission.

Given the dynamic relationships between different members of the community, as well as the object, tools, outcomes, rules, and division of labor the assignment grading activity may involve, a qualitative approach would be a better fit for the study. According to Merriam (1998), qualitative research uses an interpretive or a naturalistic research paradigm, has the researcher as a main instrument, involves fieldwork, is usually inductive in nature, and focuses on processes and meaning (Merriam, 1998)

I used a qualitative research paradigm for the present study as faculty members brought their own beliefs, values, reservations, and concerns when they chose methods to give feedback to students (constructivist and interpretive). It happened in the natural setting of a university rather than an experimental setting. The data gathering method included mainly an insider’s

perspective of how one makes choices in giving feedback. I used questionnaires, interviews, as well as review of video comments as the main methods for data collection, with the researcher as the primary instrument for the majority of the data collection. In the analysis process, insights about processes, meaning and understanding were the main outcomes for the research.

I chose the case study method in this study because the study showed “holistic and meaningful characteristics of real-life events such as individual life cycles, organizational managerial processes, neighborhood change, international relations, and maturation of industries” (Yin, 2003, p. 2). A researcher can use a case study for all three purposes of research—exploratory, descriptive, or explanatory—and this particular study was an exploratory case study. A case study is appropriate for studying a social unit (a university) as a bounded system in all its interactions and complexities. The research may generate rich insights on how the use of a tool in teaching and learning can impact the ecology of the environment, as well as various members in such ecology. A case study method is capable of answering how and why questions (Yin, 2003).

This study was an exploratory, embedded, single-case case study with the university as a single case, while also including both users of screencasting and nonusers, as well as multiple disciplines, each of which may have a unique set of rules, outcomes, and cultural climates. An embedded case study “may involve more than one unit of analysis. This occurs when, within a single case, attention is also given to a subunit or subunits” (Yin, 2003, p. 42). Academic departments are not only units that pass on subject matter knowledge, skills, and attitudes, but also are environments in which ideas about tools spread and pedagogical practices cross-pollinate. Understanding the differences and similarities created a broad and rich understanding

of the types of feedback that teachers used, and the situational factors that influenced their choices. The data analysis section of the dissertation describes what happens in different academic units, while also making comparisons between them. This was not a multiple case study as different academic units shared an organizational culture, support resources, as well as policies and procedures of the same university, which at times made it necessary to see the university as a unit of analysis in answering at least one of the research questions: What type of training and support would best address faculty concerns in using screencasting to give feedback?

Researchers can complete stellar studies using one unique case. For instance, Laurie Thorp studied the case of using gardening as an intervention in one struggling urban school for a dissertation study (Thorp, 2005). She did not choose a number of typical schools and some common interventions, yet she helped readers develop a deep understanding of struggles some urban schools have. Gordon Mathews observed and interviewed members of one particular building in Hong Kong in his book *Ghetto at the Center of the World: Chungking Mansions, Hong Kong* (2011), which also helps readers understand, with great subtlety, life in Hong Kong. Bogdan, Brown, and Foster (1982) conducted a study in a single neonatal unit, but the conclusions, such as “be honest but not cruel,” can be transferred to many other settings. In each of these studies, the single unit of study contained varied sub-groups, and that is what this study replicated as well, by studying users as well as nonusers from varied academic units within a single university.

Instrumentation

This study used the SoCQ developed by the University of Texas in the 1970s to measure barriers to change in schools (George et al., 2006). The questionnaire includes 35 items that cover seven stages of concern, including unconcerned, informational, personal, management, consequence, collaboration, and refocusing concerns (George et al., 2006). Such concerns covered all the concerns that I have experienced as an instructional designer constantly tasked with facilitating change. It also has high reliability as an instrument to measure faculty concerns (McElhany, 2007).

I administered the SoCQ prior to the interviews to gain a general understanding of patterns of usage across the campus, including how many were using screencast videos for feedback and what the general concerns were. Such information led to better questions in interviews to be conducted later. I used the interviews to gather an in-depth understanding of the decision-making process when professors chose the method to give feedback, their concrete concerns in using or not using screencasting for feedback, and their expectations for support and training. The interviews were semistructured, using the following interview guide. The interview questions were tied to research questions, as shown in Table 2.

Table 2

Teacher Interview Questions

Research question	Interview questions
1. How do faculty members make choices about feedback they give to students?	<ul style="list-style-type: none"> ● What courses do you teach? ● Do you teach online, face-to-face, hybrid, or both? ● How important is feedback in your teaching? ● What types of message would a student expect from your feedback? ● What are the most successful aspects of your feedback? ● What are your challenges in giving feedback? ● How do you usually give students feedback, to the entire class, groups, individual students, or all of the above? ● Do you consider other ways of giving feedback? Why or why not? ● Have you changed how you give students feedback in the recent past? If so, what prompted that change? ● Have you considered other feedback options but not tried them? Or have you tried them but did not adopt them? Describe your experience at those times.
2. What are the experiences of faculty members at a southeast private university who currently use screencasting to give feedback on student assignments?	<ul style="list-style-type: none"> ● Could you please describe screencasting tools you might have used to present asynchronous teaching, for instance, Camtasia, Jing, Screencast-O-Matic, Explain Everything, the screencasting function of your device, or the voiceover functions of PowerPoint or Keynote? ● How do you use them? What makes you decide to use one, but not the other? ● Have you used any synchronous teaching tools, such as Canvas Conference, Google Hangout or Zoom? If yes, how do you like them? ● What are your greatest concerns in using any of these screencasting tools? ● In which courses do you use screencasting to give feedback? Why? ● In which courses do you not use screencasting to give feedback? Why not? ● Have you received any comments from students about your screencast feedback? Could you share them? ● Can you give me a few courses and assignments for me as examples? ● Would you give me permission to go to your course(s) in Canvas to look at these assignments, as well as other information in your course(s)? (Ask for course ID, section number, title, semester or course URL, as well as assignments in which they use screencasting to give feedback)

(Table continues)

Research questions	Interview questions
3. What are the student feedback experiences of faculty members at a southwest private university who currently do not choose screencasting to give feedback on student assignments?	<ul style="list-style-type: none"> ● Are you aware of any screencasting tool, such as Camtasia, Jing, Screencast-O-Matic, Explain Everything, the screencasting function of your iPad or computer, or the voiceover functions of PowerPoint or Keynote? ● Are you aware of any synchronous teaching tools, such as Canvas Conference, Google Hangouts or Zoom? How do you like them? ● What do you know about such tools? ● Have you used any of them in teaching? If yes, in what way? ● Did you get a chance to see the demonstration in my Canvas course? If yes, do you think the method would work for you? If not, I can demonstrate briefly how this works. ● Would you consider using them? Why or why not?
4. What type of training and support would best address faculty concerns in using screencasting to give feedback?	<ul style="list-style-type: none"> ● What type of support would you need if you choose to use screencasting to give feedback? ● How do you learn to use a new method in teaching? ● What type of tools, including software and hardware, would you need if you choose to use screencasting to give feedback? ● How could we support you better in your feedback and in your teaching in general?

Setting

This study was primarily concerned with studying a social unit with an intricate interplay of organizational units, tools, and content for learning, it is best to use purposeful sampling to select “a sample from which most can be learned” (Merriam, 1998, p. 61). I researched a university in which some faculty use screencasting and others do not even though there were identical resources and support.

The setting for the study was Catsville University, a regional private university located in the southwest region of the United States. Technology has been changing the ways professors give feedback at this university. The university has enjoyed a good reputation as a leader in mobile learning, following the launch of the iPhone in 2007. The university was among the first in the nation to give each incoming freshman a new iPhone, and many professors were given iPads, which motivated professors to incorporate mobile devices in teaching. The use of such devices also encouraged some professors to experiment with mobile apps such as Notability to mark a student's assignment. The application allows professors to mark a digitally submitted paper with handwritten or typed notes and provide voice comments. Similar applications include iAnnotate, which also gives one the ability to place marks on written work.

In 2013, the university started to use Turnitin, a web-based application that allows professors to give feedback by annotating student submissions using a customized stock of comments, which consequently speeds up the grading process. Turnitin also has a voice comment feature, with which professors can record a three-minute comment to students. In 2015, the university started to use Canvas, an LMS that has a media comment feature in its SpeedGrader, allowing professors to comment with audio or video. Video comments can include screencasting videos. In May 2019, the university purchased Studio as part of the contract to renew Canvas for another five years. Studio is a video platform operated by Instructure, the same company that operates Canvas. Using Studio, professors can record their screen, themselves, or both, and host such videos within Canvas and share them with students in a variety of ways, including sending links directly to students and embedding them in a page in their course in the LMS. Purchase of the application makes it even easier to incorporate videos in giving students

feedback, which also lends additional significance to this study, as the university would want to know currently how videos are being used in teaching.

As a case to be studied, Catsville University is unique in nature. It is located in a small city in Texas at least three hours away from any metropolitan centers, but it has a campus center in a large Texan city, making it necessary for faculty members and administrators to participate in virtual meetings, which has increased comfort with web-based video technologies such as Zoom. The university is known for having rich technological resources, including studios to facilitate video production, equipment to check out, and software licenses to distribute. The university is also affiliated with a religious organization and it prides itself upon its faculty caring deeply about students. To advance student learning, the university's Teaching and Learning Center as well as its Media Lab have offered training in using screencasting tools such as Camtasia. It is a unique case to help one understand what professors would do when there is an abundance of technological resources, training, and support.

Feedback is also rising as a growing concern for Catsville, as two of the national surveys the university participated in—the Student Satisfaction Inventory (SSI) and the National Survey of Student Engagement (NSSE)—showed that the university was underperforming in student feedback compared to national benchmarks. In particular, students were dissatisfied with professors giving timely feedback, feedback about their progress in the course, and professors treating individual students unfairly. The university's Office for Institutional Research showed such results in open sessions at its Teaching and Learning Center, but participants in these sessions felt that those likely to benefit from such findings may not have come, and it is not known what professors actually did in giving students feedback.

When people make choices in an organization, they are subject to conditions that have an impact on their choices. Romiszowski (1995) attributed human performance problems to a number of reasons, including necessary prerequisites, practice, consequence, sufficiency of method or equipment, and support by management or supervision. Catsville University has the tools for screencasting. It provides the training for screencasting. Administration encourages professors to care for students on an individual basis. With such favorable conditions, if professors still do not use the screencasting method to give feedback, what might be the concerns? If they do use the method, what might help them further?

Having chosen this university does not mean that there was no other university to meet these criteria, but I had not found a similar university that advocates the use of screencasting for feedback as a deliberate intervention. Other universities may have video solutions such as Echo360 or Kaltura for their entire campuses, but having such solutions limits faculty choices. Most of the interviews were conducted at the end of May and the beginning of June, when Catsville had just begun to introduce Studio as a general instructional video solution. When I implemented the study, professors started their summer vacation and none of the participants was aware of Studio, which made it more desirable for a study as faculty members, at the time of the study, had the freedom of choice in using a variety of video tools for their teaching. It would not have been possible to study choice-making if the university mandated the use of a single solution.

Participants

I selected research participants from professors who currently work at Catsville University's residential campus, as the study was primarily concerned with faculty choices in

giving feedback. In a residential university, faculty members can give feedback through class meetings, office hours, notes on handwritten paper, as well as comments online. Catsville University also has a robust online program managed from a branch campus in a large Texan city, but online faculty were not the focus of this study except in scenarios when a faculty member had received training from the main residential campus and moved on to teach some online courses for the branch campus while maintaining their residential professor status. The study excluded faculty members who worked exclusively in the university's online program, as feedback for online programs constitutes the majority of the teaching tasks for professors, and there might be a different need for the modality of feedback, which was not the focus of the present study.

The participants were selected based on their exposure to and basic knowledge of screencasting, which I determined from their ownership of a screencasting software program, or specific screencasting-related training or coaching sessions a faculty member had attended. However, faculty members' exposure to screencasting and their knowledge did not necessarily result in active use.

The selection of participants followed these steps. First, I developed a list of professors who had attended at least one training session in using screencasting. This list was obtained from the university's Teaching and Learning Center as well as the Media Lab, both of which had offered training in using screencasting, including the use of Camtasia. This list also included professors who attended an online teaching workshop that the Teaching and Learning Center ran, during which the trainer also included a component about using screencasting to give feedback. In addition, the list included professors who received individualized coaching about the use of

screencasting to give feedback. Nineteen professors had participated in at least one specific training session about using screencasting to give feedback in the previous three years. I then expanded the list by adding faculty members who had obtained a Camtasia license. By the start of the research, the university had given out thirty-eight licenses for Camtasia, a tool dedicated to the production of screencast videos. Having a license meant that the professor had sought to own a license after a training session, peer coaching, or any other channels that had familiarized them with the screencasting software, because the volume license is given to employees based on their requests. Some professors had both a Camtasia license and participated in a session to learn how to use screencasting to give feedback. When all the lists were consolidated, I found 51 unique potential participants for the study.

After having obtained IRB approval (Appendix C) and permission from the American Institutes for Research (AIR; Appendix D), the current copyright owner of SoCQ, I sent out a request to participate in research to all 51 professors. This initial email included the purpose of the study, the reason they were chosen, and link to a consent form to participate in the study. Twenty-four professors completed the consent form, and all of them expressed consent to participate in the study.

Data Collection

The following are the multiple sources of information I collected and analyzed in their order of use:

1. application of the stages of concern questionnaire (SoCQ; Appendix E),
2. in-depth interviews with faculty who do not use screencasting (Table 2),
3. in-depth interviews with faculty who use screencasting (Table 2), and

4. a review of screencasting comments for users after obtaining permission.

Questionnaire. This study used SoCQ to understand the types and levels of concerns faculty members have about the use of screencasting for feedback. The questionnaire served to generate understanding of where faculty members currently are in their usage. Of the 24 professors agreeing to participate in the study, 21 completed the questionnaire. Other than the questionnaire items, the participants were asked to answer the question: Do you currently use screencasting to give feedback to students? Of those 21 participants, 12 professors indicated that they do not use screencasting to give feedback, hereafter referred to as *nonusers*. During the interview process, I found that two participants used screencasting to give feedback, but they self-identified as nonusers in the questionnaire. Similarly, one participant self-identified as a user, but he actually was a nonuser. I requested the survey administrator at AIR to help me categorize these participants as users to ensure that I would have accurate records for comparison. In the end, there were 11 nonusers in the SoCQ record.

Interviews. Of all those who completed the questionnaire, one user indicated that he was not willing to be interviewed. Four nonusers were not interviewed and two of them did not respond to request for interviews. One of them served mostly in the role of an administrator rather than a professor. The fourth one was not available for an interview during the timeframe specified for interviews. In the end, I interviewed 9 users and 7 nonusers.

After I identified those willing to be interviewed, I interviewed them for approximately 30 to 40 minutes. These interviews took place mostly in their offices, but a few took place in the Teaching and Learning Center. Two interviews were conducted on the phone as the professors were not easily available on campus. In all these interviews, I used a digital recorder to record

the conversations. I also recorded the interviews with Audacity, a free recording application on my computer, to ensure that I had a backup of the recording in case the digital recorder failed.

During the interviews, I also defined what I meant by “screencasting for feedback,” and I showed at least three examples of screencasting for feedback, including one screen capture video, one talking head video, and a third one combining screen capture and a talking head. Such explanation and demonstration took around five minutes of the interview time, but it proved to be worthwhile as it established the common frame of reference about screencasting for feedback.

Review of comments: During the interview, I asked users to send me exemplary videos of them giving feedback, as well as student comments about their use of video feedback, if available. The consent form for professors included the explanation that student information will be de-identified to comply with FERPA requirements. When it was possible for students to detect their own work, I also obtained their permission to use their assignments to analyze faculty giving feedback, but with the explicit message that the focus was on professors giving feedback, rather than their own assignments. Five users sent video examples, and I transcribed these examples.

Data Analysis

Questionnaire results were analyzed with the SoCQ scoring device to identify patterns of concern for individual professors, comparison of users and nonusers from the same department, as well as consolidated results for all users. The data was summarized with considerations for anonymity and confidentiality. Individual concern profiles were printed and shared with faculty members being interviewed. Screenshots of SoCQ profiles were added to interview transcripts for each participant.

The audio recordings were then uploaded to Temi.com for rough machine-based transcription. After that, my research assistants and I matched the recording with the rough machine transcription and edited the transcriptions to ensure they were all accurate. During the editing process, we removed filler expressions such as “um,” “ah,” and “you know” to improve readability, but other than this, the transcripts were verbatim transcription of the audio recordings. I also wrote memos after I completed each interview to record additional observations that were not captured in interview transcriptions.

I entered all interview transcripts and memos from the interviews into NVivo, qualitative analysis software. I ran coding passes twice, first applying the in vivo coding method, using each interviewee’s own words in quotations (Saldaña & Omasta, 2018), and in the second pass coding, I grouped first-pass codes in several categories. The first category included codes within predefined categories of the EAT: tool, subject, object, outcome, rule, community, and division of labor. If data could not be untangled into any of these EAT subcategories, I added it directly under EAT codes. Toward the end of the analysis, I drew another graph of the EAT to illustrate what happens when a professor is giving feedback to students. The second category of codes used phrases from the SoCQ: unconcerned, informational, personal, management, consequence, collaborative, and refocusing (George et al., 2006). Codes from the third category are related to faculty decisions in giving feedback, which is linked to research question 1. The fourth category included codes related to training and support, including faculty satisfaction and faculty needs. In the fifth category, I recorded codes related to feedback itself, including its significance, categorization, and teacher strategies in giving feedback. NVivo allowed me to distinguish these

categories through expandable nodes, which could include subnodes, namely specific codes (Appendix F).

I retained all audio recording and transcription data in my personal Google Drive and I shared them with Dr. Leah Wickersham-Fish, chair of my committee. I will keep such data for three years following the completion of the study, and then I will delete them. However, I will retain my de-identified coding summary and categories for future reference as an example for other researchers, if needed.

Methods for Establishing Trustworthiness

Qualitative researchers use trustworthiness to determine the rigor or quality of a study (Merriam, 1998). Lincoln and Guba proposed the use credibility, transferability, dependability, and conformability to establish such trustworthiness (Guba, 1981; Lincoln & Guba, 1985). Shenton (2004) built on Lincoln and Guba's work and listed strategies for each of these four methods to establish trustworthiness for a qualitative study. For the present study, a number of measures were used to establish trustworthiness following the suggestions of Lincoln and Guba (Guba, 1981; Lincoln & Guba, 1985), Shenton (2004), and Yin (1998), who established rigor in a case study by evaluating the construct validity, internal validity, external validity, and reliability.

Credibility/internal validity. I used a well-recognized research design—Yin's embedded, single-case study design—to conduct the research. Shenton (2004) also suggested using a negative case analysis, which is why I am studying both users and nonusers of screencasting to uncover practices that are contrary for objective assessment. Dr. Wickersham-Fish on my dissertation committee closely monitored the methodology of this process. I made it

my responsibility to check in with her regularly during the research process to review the interview design, coding scheme, criteria to determine saturation of data, and the structure of my forthcoming chapters. We held videoconferences almost weekly to review my progress throughout the dissertation research and writing processes.

Transferability/external validity. I have provided a detailed description of the university, the units to be studied so that practitioners in other organizations are fully aware of the context and know whether and in what areas they can make comparisons.

Dependability/reliability. I sought to clearly present the study methods in this chapter as well as appendices, which may include the consent forms, the questionnaire, interview guides, the IRB approval, and permission from AIR to use their instrument.

Confirmability/objectivity. I triangulated data by collecting them from different sources (professors in different departments) and in different types (questionnaire, interview, and media comment review). I also shared my beliefs and assumptions. I also used an audit trail as defined by Shenton (2004), which included the Google Doc Track Changes feature, check-in notes with my dissertation chair, and observation memos to ensure that I minimized personal bias in the research process.

Researcher's Role

Instructional designers work in support functions and do not have the power to influence faculty prestige, evaluation, tenure, or promotion, so it is unlikely for me as an instructional designer to run the risk of coercing or bribing faculty at Catsville University for their participation. Whether one uses screencasting to give feedback is an entirely pedagogical decision within the realm of a professor's academic freedom. Whether they choose it or not has

little to no impact on their career advancement. Therefore, the conflict between my role as an instructional designer and researcher was minimal, and any concern for such minimal risk of conflict was addressed through the consent form, which explicitly told potential participants that they were free to participate, decline to participate, and withdraw early from the study without having to give any particular reason (Shenton, 2004).

Ethical Consideration

This study is primarily concerned with the effectiveness of a technology-enhanced technological method. Studying this method did not cause political, physical, mental, or psychological harm to any research subjects, the students the research subjects will impact, or any other members of the community. Making professors aware of an additional tool for teaching, even if they chose not to use it, did not harm them in any way. In the contact email, I also made it clear that participation would be completely voluntary (Appendix A).

Before this study began, I took a course in human subject research and became fully aware of the ethical considerations that go into such research. I submitted the proposed research design to the Institutional Review Board (IRB), who approved it (Appendix C). Professors and students who participated in the research all signed consent forms in which I informed them of the nature of the research as well as their rights (Appendix B).

Assumptions

In conducting this research, I assumed that all participants gave answers to me with honesty. The freedom for voluntary participation and withdrawal should have made it natural for them to continue the study with me honestly. At the start of the research, I explicitly discussed with them that the research is about the use of screencasting to give feedback, and that it would

not involve organizational politics that could adversely affect their careers, their students, or their reputations.

I also assumed that it would be beneficial for faculty to become aware of one more tool for their teaching. However, I acknowledged that they might not have perceived such usefulness the same way as I did. I kept an open mind about what I was researching and I was willing to change my mind about the usefulness of screencasting for feedback if the research showed me concerns and issues that I had not been aware of.

Limitations

Even though measures were taken to establish trustworthiness of the study, there is a possibility that the research findings are not transferable to other contexts as a single unique case was chosen to create in-depth understanding of the social dynamics in one organization. This study was also designed to answer four research questions, which limited how many institutions could be researched given the available resources. This study could serve as a pilot study for future replication in other institutions. A future researcher could also explore any of the four research questions at greater depth, for instance, how professors make decisions about feedback in other contexts, including larger private universities, smaller private universities, or public universities.

Delimitations

This study was an exploratory study limited to a single case study at one university. The university is unique in having abundant technological resources and focusing on meaningful student-teacher interactions. The conclusions may not apply to other types of universities, such

as large state universities, where faculty workload issues may be addressed through other means, such as adding teaching assistants.

This study was conducted on a residential campus of a private, not-for-profit university that mainly offers face-to-face courses where there are many options for student-teacher interaction. Even though the faculty members may teach some online courses during the summer or spring breaks, they are predominantly classroom professors. The study did not involve the branch campus in a large Texan city, which offers only online courses. For purely online courses given in online programs, online feedback may be perceived as the only type of feedback a faculty member gives, which would warrant another study altogether.

This study did not include content-specific feedback, which may vary with the subject matter that is being taught. Instead, it was limited to modalities of feedback, including media (such as text, audio, screen video, talking-head video, or any combination of them), as well as some generic categories of feedback messaging, such as greeting, encouragement, and suggestions for action that may be common to all disciplines.

Another delimitation of the study is that the study focused only on professors. Students were not chosen as subjects to collect data from, as the literature review revealed that much has been written about student perceptions about their preference for video feedback. Existing research as discussed in Chapter 2, showed that most students have a favorable perception of using screencasting as a feedback method. The research questions in this study were focused on faculty decisions and faculty concerns.

Summary

In this Chapter, I summarized the rationale for conducting a case study at Catsville University, the population and sample, methods for data connection and analysis, concerns this study may cause, as well as responses to such concerns and strategies to minimize concerns. I chose a case study design for this study, collecting data from multiple academic units, including both users and nonusers of screencasting to give feedback. I studied the views and feedback practices of professors both individually and comparatively, eventually leading to conclusions about the university's attitudes and concerns about screencasting for feedback. The following chapters present the results of the data analysis, as well as conclusions and recommendations for future research.

Chapter3 4: Analysis of Nonusers

Every potential participant for this research had been exposed to the method of screencasting as a teaching tool. However, not all of them had adopted the method at the time of the research. I call those who had chosen not to use screencasting to give feedback nonusers. This chapter shares what the data revealed about nonusers' experience of giving feedback and their decisions in choosing a specific method to give feedback.

At the start of the research, I contacted 51 potential participants for the study, and 21 of them completed the SoCQ. Of those 21 participants, 12 were nonusers. During the interview process, I found that two participants actually used screencasting to give feedback, but they self-identified as nonusers in the questionnaire. Similarly, one user self-identified as a user, but he actually was a nonuser. I requested the survey administrator at AIR to help me categorize these participants as users to ensure that I would have accurate records for comparison. In the end, there were 11 nonusers in the SoCQ record.

Summary of Questionnaire

The SoCQ results showed that the greatest concerns among nonusers ($n = 11$) were unconcerned (99%), informational (89%), personal (59%), management (47%), and refocusing (30%; see Figure 4).

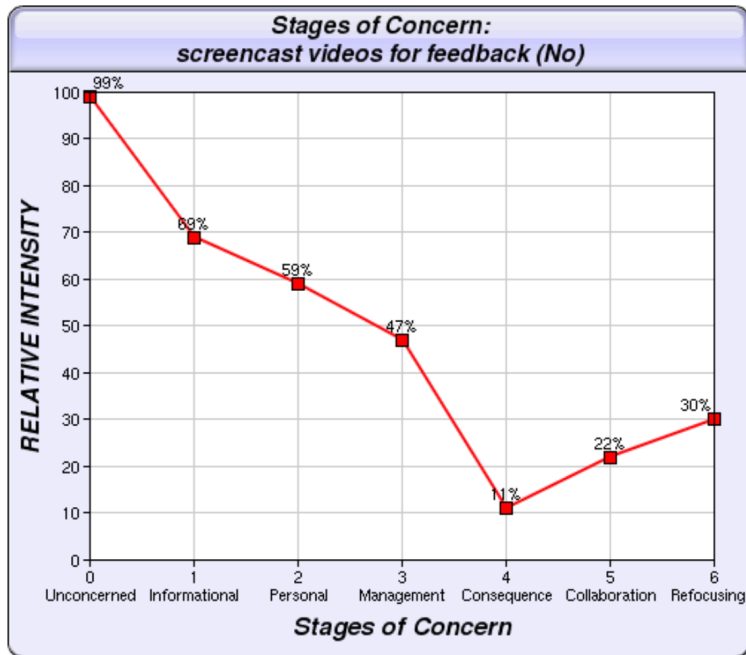


Figure 4. A line graph of aggregate SoCQ results for nonusers.

Using screencasting to give feedback is still fairly new as an innovation. Most users were not yet sure what it was to register any concern with the method, hence the high percentage for “unconcerned.” Immediately following “unconcerned” there is the “informational” concern, which means that users wanted more information about the attributes of the innovation. “Personal” concern comes next, which could demonstrate that nonusers were concerned with personal benefits and requirements in using the innovation.

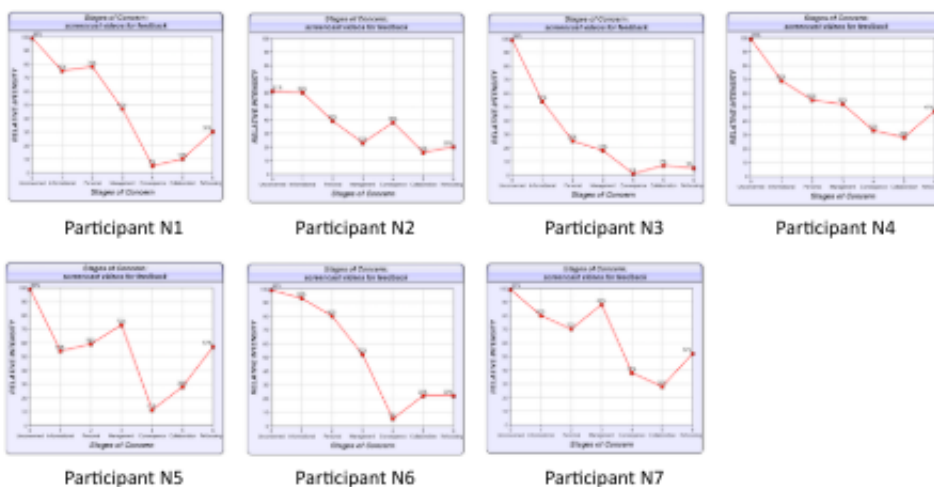


Figure 5. Line graphs showing an overview of SoCQ results for individual nonusers.

As shown in Figure 5, the stages of concern graphs display much similarity in trends, going from high score in lower stages of concern to lower scores in higher concerns, but the scores rise again slightly in “refocusing” scores. The highest concerns are distributed at the initial three stages, falling under the category of “self,” as compared to “task” (management concern) or “impact” concerns (consequence, collaboration and refocusing concerns; George et al., 2006). (For more information about the categories, see Table 1). All the nonuser participants are tenured professors with full teaching schedules, as well as research, administrative, and student advising tasks. Their limited time challenges adoption of any additional tools and methods unless they perceive strong advantages in them. Furthermore, even though they had been exposed to the method of using screencasting to give feedback, time lapsed and they might have forgotten about the method. They might also have lacked the prerequisite skills or information for adopting the method. Some previous training and coaching sessions they attended focused on using screencasting for digital storytelling rather than as a method to give

feedback. The interviews further revealed why they had not chosen to use screencasting to give feedback.

Summary of Interviews

I reached out to all respondents to the questionnaire who had been identified as nonusers of screencasting. Two professors did not respond to my request for an interview. After having adjusted errors in user/nonuser recording, the total number of nonusers being interviewed was seven. Table 3 shows the profiles of these seven nonusers, with their department names modified to increase anonymity without actually changing the major field with which each professor is associated. I also assigned pseudonyms for each professor for anonymity, as well as for easier readability and consistency in narration. For nonusers, all pseudonyms start with “N,” as in nonuser, while pseudonyms for users start with “S,” as in screencasting user. Other than the two professors from the Business and Management Department, all nonusers came from different academic units, an indication that no particular department resists using screencasting to give feedback. As shown later in the interviews, not using screencasting for feedback was merely an individual choice of each participant without much influence from a particular department.

Table 3

Nonuser Participant Profiles

Professor Pseudonym	Department	Method of Exposure to Screencasting
Naomi	Communication	Camtasia License
Natalie	Business and Management	Camtasia License Training session
Natasha	Kinesiology	Training session
Nathan	Business and Management	Camtasia License Training session
Nick	English	Camtasia License
Nicole	Chemistry	Camtasia License
Noah	Biology	Camtasia License Training session

When scheduling the interviews, I told the interviewees that I would meet them at a location of their choice to make sure they felt most comfortable. Two of them came to the Teaching and Learning Center for the interview. I visited four of them in their offices for the interviews. One of the professors lived around 40 minutes away from campus, so I interviewed her by phone. In all these scenarios, they stated that they were comfortable with me recording the interviews. At the start of the interviews, I usually shared with them the SoCQ profile, which included detailed description of the stages of concern they had not seen from the automatically generated email summary. I went over the profiles with them briefly, usually showing some of the concerns with the highest scores. In all interviews, I also showed three video examples of screencasting for feedback screen capture only, talking head only, and screen capture with a talking head in the corner. I played each clip briefly and explained the rationale for choosing the

method. This quickly established a shared understanding of screencasting for feedback. I also defined screencasting for feedback, emphasizing that I would include synchronous virtual meetings with screen-sharing components as screencasting for feedback as well.

After the interviews had been transcribed, I wrote memos to capture any additional observations that had not been recorded in the transcript. I then coded interview transcripts first using in vivo codes to record themes that emerged. Then I completed a second pass coding to organize themes into categories linked to the research questions as well as the theoretical framework. I completed the coding process for each interview regardless of their user or nonuser identification, utilizing the same categories of codes to ensure that the two groups could be compared. In the end, these are the categories of codes that were generated:

- 1) **Process:** These codes represented how professors made choices in giving feedback. I used these codes to aggregate data to answer RQ1: How do faculty members make choices about feedback they give to students?
- 2) **Concerns.** With this group of codes I gathered data to partially answer RQ3: What are the student feedback experiences of faculty members at a southwest private university who currently do not choose screencasting to give feedback on student assignments? These codes corresponded to the stages in the SoCQ—unconcerned, informational, personal, management, consequence, collaboration, and refocusing.
- 3) **Adoption.** Using this group of codes I gathered data to partially answer RQ3: What are the student feedback experiences of faculty members at a southwest private university who currently do not choose screencasting to give feedback on student assignments? In particular, with this group of codes I looked at perceived advantages of screencasting to

give feedback, decision factors for adopting screencasting to give feedback, interest in the method, and reasons for resisting it.

- 4) **Training and Support:** With these groups of codes I categorized data to answer RQ4: What type of training and support would best address faculty concerns in using screencasting to give feedback?

I also had a group of codes labeled “feedback,” looking specifically at the nature of feedback, and this group of codes will be presented in the comparison chapter, as both users and nonusers share certain feedback strategies and types.

Process: How Nonusers Give Feedback

I used the EAT (Engeström, 2000) to guide the coding process answering the question about how nonusers give feedback to students. Figure 6 shows a brief summary of the themes that emerged.

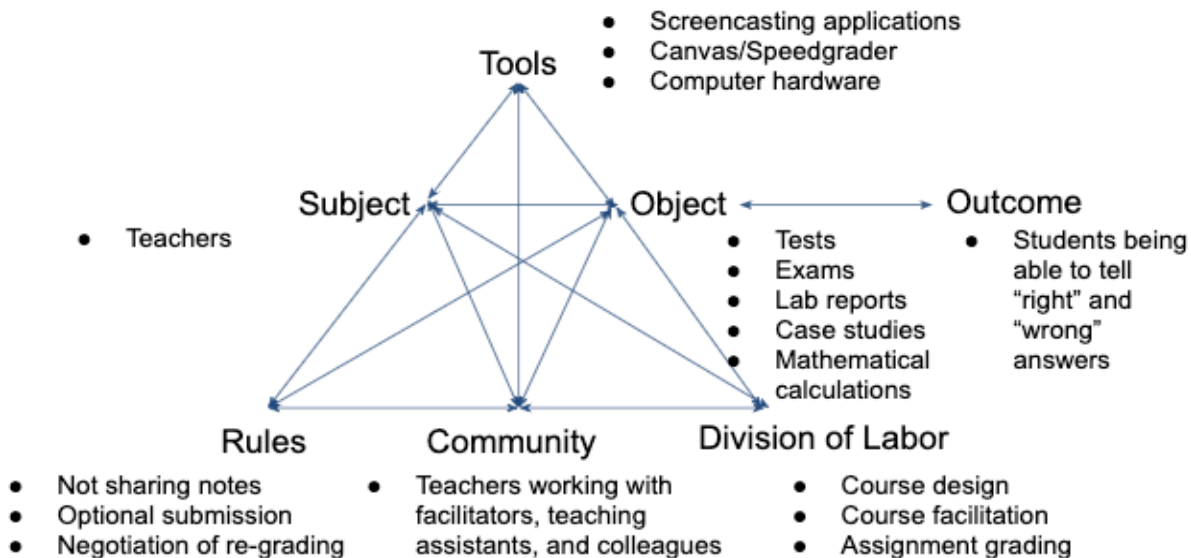


Figure 6. A diagram of extended activity theory (EAT) framework for nonusers. From “Activity Theory and the Social Construction of Knowledge: A Story of Four Umpires” by Y. Engeström, 2000, *Organization*, 7(2), p. 303. Copyright 2000 by Sage. Adapted with permission.

Subject. Teachers were the subjects in the activity of giving feedback. When looking at the way professors gave feedback, it was hard to miss that they made fairly sophisticated choices. For instance, they gave some feedback to individuals and some to the entire class, depending on how generic the feedback was. They also made choices in the medium to use, and such choices ran the gamut from paper and pencil to voice comments and screen capture.

Object. Teachers who did not use screencasting to give feedback worked with a variety of objects in their feedback activities, including tests, exams, lab reports, and mathematical calculations. Most of these were seen as objective items that did not require further elaboration through screencasting. Standardized tests were automatically graded by the LMS, which eliminated the need for manual feedback from professors. Even without the use of an LMS, some professors saw feedback as simple and straightforward that could simply be handled with written notes. Nicole said: “Well, in straight chemistry classes there is very little writing. So the straight chemistry classes are all math . . . wrong constant, wrong sign, you mixed up this, that kind of thing.” However, there were also case analyses and lab reports even for Nicole’s classes, which could have used some elaboration. In such situations, screencasting could be helpful.

In the lab classes where they have to do lab reports, some of those I will grade and I will make comments about, you know, this doesn't follow logically from, you know, your conclusion doesn't follow logically from your assumption or you have not supported your hypothesis with your data; things like that. (Nicole)

There were times that Nicole stated that she found that text alone was insufficient, and she asked students to use Facetime to show her what was actually going on. This would have been an excellent case for using a virtual meeting tool with screen-sharing capabilities to explain problems with greater clarity.

Tools. Nonusers used a wide variety of tools in giving feedback. For instance, Canvas and the SpeedGrader were popular tools for feedback among nonusers, but they did not use the media comment feature in the SpeedGrader, choosing instead to annotate student work with text. It is worth noting that nonusers did not necessarily resist using new tools in giving feedback.

Nick, for instance, had been very experimental with multiple tools to give feedback:

There was a tool that was helpful, but it wasn't a grade book. It was something else maybe to distribute the syllabus or something. So I started signing up for my face-to-face classes using that tool, but only for one thing. Yeah. Then Openclass came along and that's when we started developing the completely online classes and I started teaching business and professional writing completely online. So I used Openclass and then Canvas and that started changing the way I gave feedback. I sometimes use the audio feature. I started using the highlight feature. I started typing my comments along the sides more than I did. (Nick)

Nick just needed a strong reason to move to the next step of using screencasting to give feedback, instead of a method that is “cool.” Nick had also gone through multiple transitions of LMSs, which increased his hesitation to adopt a new tool. Nicole expressed similar concerns with tool transitions, and her willingness to try new tools when there is perceived stability: “And so when we said Canvas, I said, ‘Okay, so how long are we going to do this?’ And they said like at least five years. I said, ‘Okay, I can commit to that one.’”

Outcome. Nonusers seemed to place a great emphasis on students being able to tell right answers from wrong ones. “There are no opinions. It's either right or wrong” (Nicole). The absence of gray areas seemed to make some nonusers feel that there is no need to use screencasting to give feedback.

Rules. For nonusers, giving feedback involved explicit or implicit rules. For instance, not sharing notes for work is a rule that Nicole adheres to, as there are only a limited number of questions that her class can give. Being elaborate on explaining the results of the test would

cause concerns of student cheating. She would not even want to share notes using text, not to mention explaining them in screencast episodes. Nathan assigned essays as part of the coursework, but his rule was to make it worth more grades but optional for students. He was frustrated that students did not always submit such work. Nathan also allowed students to resubmit their work for a full credit. However, such iterations could take a toll on his time.

Communities. Even though giving feedback seems to be a simple enough activity, the interviews revealed that it often involves a community. For instance, Nathan functioned as a lead professor working with a course facilitator (often a part-time professor) in teaching a course. Grades and feedback were the responsibilities of the facilitator, while Nathan was responsible for the design of the content and for training and guiding the facilitator. A number of courses at the university are group-taught with a leader and co-teachers, all of whom are full-time professors. As all of them are full-time professors, the group dynamic is subtle. For instance, Naomi's course coordinator asked her to give feedback in a certain way, but Naomi did not have an opportunity to learn about the method. She said she learned it from the teaching assistants.

Division of labor. With the job of teaching now shared within a community, there is often the division of labor. For instance, some professors play the role of subject matter experts designing and leading courses. Some professors are facilitators tasked with the day-to-day teaching activities, including participating in discussions. Using screencasting to provide feedback is a new method and requires some training. When it involves facilitators, group professors, and teaching assistants, lead professors may not always have the time or expertise to train the rest of the team. In the meantime, the Teaching and Learning Center offers training

mostly to professors. It may be a good idea to offer training to teaching assistants as well to reduce some of the load for lead professors.

It should be noted that giving feedback involves a complex interplay of elements including subject, object, tool, rules, communities, and the division of labor. Even without using screencasting, experienced professors make choices that have become second nature to them.

Nick, a professor of English, said he used a variety of feedback methods depending on the courses he teaches.

So that has the, that is a type of feedback that I would say I give type A feedback when I teach business. Professional writing is so factual, I'm looking, I'm thinking of your list. Facts and procedures, procedures, the types of documents are different. They're much shorter. Yes, format matters quite a bit more. And precision of wording matters a lot more than an essay. So I give feedback type B for those kinds of assignments. So yeah, my feedback does vary depending upon what I'm assigning. (Nick)

However, in some complex feedback scenarios, nonusers can benefit from using screencasting. Some of them are not using it right now. They may need further training or examples from other professors to become truly confident in using it, or they need further reasons to use it as an alternative to their traditional ways of giving feedback.

Concerns: Nonuser Concerns With Using Screencasting to Give Feedback

To answer RQ3—What are the student feedback experiences of faculty members at a southwest private university who currently do not choose screencasting to give feedback on student assignments?—I asked nonusers what they know about screencasting tools, whether they use them in other teaching activities, and whether they would consider using them. Their SoCQ profiles show a similar trend, as shown in Figure 5, that most of their concerns were limited to the “self” category: unconcerned, informational, and personal.

Unconcerned. There had not been enough information, training, or exposure for many of the interviewees to know enough to care one way or the other about using or not using screencasting to give feedback. Naomi, for instance, said “I don’t even know what that [screencasting] is.”

Informational. Most nonusers needed additional information about the method. Nick wanted to learn more and be persuaded why screencasting provided a better alternative other than it being “cool”. He would try it only when there was research literature to support it as a valid method. Nicole said she was aware of the method but could not see why she would use it. Natalie showed interest as she was struggling with her existing method of giving feedback. She also used Camtasia to produce podcasts in the past for a *flipped classroom* method of teaching, but again, she could not see how it could be useful compared to what she already did.

Personal. A personal concern shows that the individual is “uncertain about the demands of the innovation” and “his or her role with the innovation” (George et al., 2006, p. 8). One of the greatest personal concerns is time demand. Naomi complained that a semester could be so “fast and furious” that “a lot of my time and energy is taken up with a particular thing and so I don’t even put time then toward revamping something else.” Natalie, who teaches business and management, expressed similar concerns that switching to a different method to give feedback could be time consuming. She said that she had sufficient training and support, but that “it’s just hard to find time to take advantage of all of them [the tools].” She also said she dislikes the fact that certain screencasting feedback may take too many steps before students can see it. Nick expressed a similar concern that once the steps become too complex, he loses interest. Nathan’s

personal concern was that adopting screencasting for feedback would mean he had to teach the facilitator, and that can create extra complexities:

I'm going to show him because I don't think he knows necessarily about all the functionality because I've showed them lots of other things like Turnitin that he didn't know about. So I'm going to show him the screencasting. I think that could be a lot better because he's currently writing a whole bunch of stuff . . . He downloads the things students submit and then writes a whole bunch of comments in Word, lots of detail.
(Nathan)

Management. An individual with high management concern “focuses on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organization, managing, and scheduling dominate” (George et al., 2006, p. 8). Nick is an English professor who also runs the Writing Center. He is also heavily involved in the university’s undergraduate writing program, which monitors the quality of the writing in various departments. This management concern could also be an opportunity for adoption to help him manage his programs. When asked whether he used screencasting to give feedback, he said student workers in his writing center had used it, which could also influence him.

Noah, a professor of biology, showed interest in using screencasting to give feedback, but he was deterred by certain management and process reasons. For instance, he was worried he had to contact someone to increase the storage size of his course if he used video to give feedback, as he was led to think that screencasting produced large files, which could not be easily added to the course:

The only thing is that the Camtasia version for Mac actually will create a huge file that's not convenient and it takes quite some time, like a few hours to convert that to a YouTube video, and upload it to YouTube. It's not doable to directly embed it to Canvas because of file size. At least I think 2GB. (Noah)

When he learned that such videos would not count toward the storage limit and that administrators would be happy to increase his storage limit even if he did reach capacity, he became more willing to try.

Consequence. An individual with high consequence concern “focuses on the innovation's impact on students in his or her immediate sphere of influence” (George et al., 2006, p. 8). For nonusers, the consequence score was the lowest, which means that the modality of giving feedback, by text or screencasting, was not perceived as having a huge impact on student learning. Nicole was worried that detailed feedback would actually have a negative effect on student learning, as students would share answers and cheat: “In chemistry, there are only so many ways you can ask the question.”

Natasha, a department chair and professor, sees the affective aspect of such feedback and its potential effect on student learning, and this realization motivated her to try it in the future:

It would be more beneficial to go ahead and do screencasting for feedback that it does seem more personable to them and I think that they would appreciate that. I know they appreciate comments that I make in text. I think the video would probably do better. And again, because I would probably explain more deeply in thinking [using screencasting].
(Natasha)

Collaboration. An individual with a high collaboration concern “focuses on coordinating and cooperating with others regarding use of the innovation” (George et al., 2006, p. 8). Though nonusers did not indicate high collaboration concerns, a number of them indicated that they work with teaching assistants or course facilitators in giving feedback. Nicole let teaching assistants grade lab reports with guidelines that she provided. Nathan had collaboration concerns, as he would need to train teaching assistants if he required the use of screencasting to give feedback. He thought this would probably be overkill as most of the assignments teaching assistants graded

were quantitative assignments that students either answered right or wrong. Natalie worked with some co-teachers in the course and they used Google Docs to collect and grade assignments. She found it easy for several professors to comment on an assignment in text, but using screencasting videos would be more difficult for such collaboration.

Refocusing. An individual with high refocusing concern “focuses on exploring ways to reap more universal benefits from the innovation, including the possibility of making major changes to it or replacing it with a more powerful alternative” (George et al., 2006, p. 8). Nonusers may not believe in using screencasting to give feedback, but they found the method of screencasting useful for some other purposes. For instance, Nicole advised students in applying for medical schools and provided them with her suggestions on their application letters and documents. She found that she could probably use screencasting to give feedback on their application essays. Noah was interested in using screencasting to lecture to students when he went on research trips or to conferences.

Adoption: Nonuser Interest in Adopting Screencasting to Give Feedback

To answer RQ3—What are the student feedback experiences of faculty members at a southwest private university who currently do not choose screencasting to give feedback on student assignments?—I asked nonusers whether they had considered changing their existing method of giving feedback, and whether they would adopt the method of using screencasting to give feedback. In the following section, I describe their concerns with the existing method of giving feedback, perceived advantages of using screencasting, their interest in or resistance to using screencasting, as well as factors that could influence their decision to adopt the method.

Concerns with existing method. Nonusers expressed a variety of concerns with their existing method of giving feedback. First of all, both Naomi and Natalie were concerned that their feedback might have been ignored by students, or, in Naomi's words, their feedback vanished into a "black hole."

Burnout is another great concern with existing method of giving feedback, mostly using text. Naomi complained: "It does get tedious typing the same response over and over and over again because they tend to make the same mistakes." Naomi also taught speech, and sometimes she found she had to listen to the entire speeches and then give feedback, which really wasted her time: "I was listening to the speech a second time and typing in comments and that got to be pretty tedious . . . It just increased the workload exponentially." Nathan felt very "stretched" as he found himself teaching more courses with more students. It was becoming increasingly difficult to give quality feedback to everyone.

Noah found the existing method challenging, as students were not coming to his office hours as much as they used to. He claimed that many students preferred to write him emails with questions, and he found it insufficient to email back in text as some concepts in biology are hard to explain in text alone.

Traditionally students always want to come to your office, ask the questions, and sometimes, you know, I'm busy, probably I'm working on a research project [or] I'm in the lab. And they cannot find me in the lab, so they would like to shoot me an email. Especially in recent years, they tend to email questions more than coming to ask questions, you know, face to face. Still, a lot of students come, but compared with five years ago, you can see the trend. (Noah)

Natasha was concerned that her written text feedback could sound "a little harsher than what it is supposed to be, or just may be misconstrued somehow," hence her interest in exploring screencasting as a feedback method.

Perceived advantages of screencasting for feedback. Nonusers acknowledged that screencasting had advantages as a feedback method once they had a better understanding of the method after my initial demonstration. An immediate advantage would be the ability to transcend geographical barriers. All interviewees were professors on Catsville’s residential campus, where they could choose to meet with students to give feedback. However, some of them did commute and when they did, screencasting filled the gap of teaching when they could not meet students. For instance, Nathan traveled to Frankfurt, Paris, Australia, and New Zealand to teach. Natalie had clients in Costa Rica who she sometimes needed to bring into her course. Synchronous screencasting sessions would be helpful in such scenarios.

Another perception of advantage is that screencasting can be more direct. Natalie mentioned that certain content, such as currency exchange and mathematical calculation, needed a “walk through,” which is where text is at a disadvantage while screencasting has an advantage.

Nonusers also perceived screencasting to be capable of providing more adequate feedback, which is especially necessary when assignments involve graphics, videos, and processes that are challenging to represent in text:

During the class I can show slides and they're referred to some materials, sometimes maybe open a website to help them understand. But when you write down the text, it is more difficult sometimes. Sometimes I do not have enough time to write all those complicated processes in text. (Noah)

Nonusers’ interest and resistance. A few of the nonusers—Nathan, Noah, and Natasha—showed great interest in adopting the screencasting method. Noah wanted to use it to explain such things as the nerve structure. Natasha said she plans to make a change to use screencasting in her classes. Natalie said, “That might be something useful, you know, if I’m trying to work a problem or explain something more mathematical than that would be more helpful and I know.”

Nathan believed that, after seeing the demonstration I gave at the beginning of the interview, “screencasting is a great way to add that personal connection” and he intended to start using it.

Nick was interested, but he would need proof that this method worked for students: “What's going to finally convince me to go to that next step is learning that the students really learn from it.”

In the meantime, there was also hesitation in utilizing screencasting to give feedback. For instance, Nick indicated that he was reserved as the method seemed to have too many steps. He believed that typing text might be faster: “To me highlighting and typing on the side is, is pretty, pretty fast for me.” Additionally, he found merely auditory feedback to be appealing as some of his colleagues were using that method with success.

Decision factors. The interviews revealed the factors that influenced faculty decisions in choosing to use screencasting to give feedback, usually combining considerations of perceived advantages and disadvantages. When making their choices, nonusers asked the following questions: Is the new method complex? Is it convenient? Is it familiar? Does it save me time?

Complexity. Nicole wanted to use methods that were “nice and quick,” without involving multiple steps. The new method would lose potential users if it was “clunky” with “lots of steps” (Natalie).

Flexibility. Nathan wanted to adopt screencasting as there were “bad weather days,” “jury duty,” or time at hospital, when he would find it useful to teach from his screen.

Familiarity. If a faculty member has learned to use a particular software application, chances are that he or she would try to find other scenarios in which the same application could

be used. For instance, Simon said his “go to” had been Camtasia “because I’ve used it so many times.”

Time demand. The time demand for giving feedback was a significant factor in nonuser decisions not to use screencasting. Nicole claimed “it’s still faster just to mark it [in text].” However, if they started to perceive that screencasting could save time, they said they would be more open to using it.

Natalie was keenly interested in the ability of screencasting to give group feedback in discussions, which could be time demanding for her to respond to student posts one by one: “If you’re doing a comment on the discussion thread for an entire group, but then I think that’s definitely a time savings over putting a comment in every person’s post.” Because most nonusers indicated in their SoCQ responses that they lacked information, the potential to use screencasting to save time may not have been that clear to them, and additional information or training could help them make decisions to adopt the method.

To sum up, the interview revealed that some nonusers were not necessarily against using screencasting itself, but they were more concerned with evidence-based advantages for student learning, the convenience, complexity, and familiarity of the new method, as well as its demand on their time. They also showed dissatisfaction with their existing method of giving feedback, which, when combined with the advantages of using screencasting, represented great opportunities to increase adoption of the method as an addition to their teaching toolkit.

Training and Support

Catsville provides training and support to faculty through the Teaching and Learning Center, the Educational Technology Department and the Media Lab. Teachers can also learn to

use software applications through LinkedIn Learn. The fourth research question to be addressed for this study is Q4: What type of training and support would best address faculty concerns in using screencasting to give feedback? To answer this research questions, I asked these interview questions:

- What type of support would you need if you chose to use screencasting to give feedback?
- How do you learn to use a new method in teaching?
- What type of tools, including software and hardware, would you need if you chose to use screencasting to give feedback?
- How could we support you better in your feedback and in your teaching in general?

Three codes emerged from the analysis: learning method, satisfaction with support and training, and need for support and training. Here is a summary of these three themes:

Learning method. I asked specifically how they learned a new method in teaching.

Answers included the following:

The Internet. Most participants, such as Noah, Naomi, and Natalie were used to “Googling” (Nicole) for training on the Internet, especially on YouTube. However, Natalie claimed that she liked the “little videos” that the Teaching and Learning Center produced, as these videos are more targeted toward needs of the university.

Colleagues in the same department. Usually these colleagues are innovators or early adopters of innovations (Rogers, 2003). Nick, for instance, learned a lot of tools from a colleague, an advanced user of videos.

Professional conferences. At professional conferences, professors hear for the first time about a new method in teaching or a new teaching tool. None of the nonusers who had been

interviewed is a professor of educational technology, while they took advantage of their professional conferences to learn new tools in educational technology, which shows how pervasive technology is in teaching in various disciplines.

The Teaching and Learning Center. Nathan said he checked the RSS feed of blog posts from the Teaching and Learning Center on the university's online portal since he has to visit the portal everyday anyway. When nonusers run into issues, they sometimes consult the instructional designer at the center for suggestions. The center also offers training sessions on various ways of teaching and uses of educational technology, but Natasha said training alone was not always sufficient; training ought to have some follow-up initiated either by the faculty or the center: "I can't catch everything in class, so that's why I emailed the instructional designer and asked him."

Trial and error. Some users said they learned through trial-and-error and they heard of certain applications and they just went ahead and tried them out. However, Naomi mentioned that as faculty, they did not always know what the best practices for using certain tools were. Self-exploration may not reveal the full spectrum of functions they could take advantage of.

Nathan expressed similar thoughts:

I like to get in and play with it, play with it myself. And learn that way, but sometimes you don't find huge functionality you're not even aware of because if you don't happen to stumble upon it, then you don't even know it's there. So training is helpful, but then I also wanted to just spend time trying it myself.

Satisfaction with training and support. I asked how they could be better supported in using screencasting to give feedback, with the intention to identify if nonuse results from the lack of training and support, but I have found that even among nonusers of screencasting for feedback, there was high satisfaction for the training and support available to them.

According to Nick, nonuse was not necessarily related to the lack of training in using the technology, and he said, “To me the technology has always been easy.” Natalie praised the trainers for doing a great job: “I don't feel there's any lack of availability or accessibility. I feel that they're provided frequently and conveniently.” Noah said he relied heavily on the instructional designer when he started to use a new technology in teaching: “I usually call him or ask him questions a lot. And, of course I always seek his advice when I am adopting a new technology.” Nick said he was ready to use the new method.

Nonusers' hesitation in using the screencasting was attributed to reasons other than training and support: Nick explained that he was not using it yet and he would want to see research evidence supporting its use. Natalie's specific struggle was not “having enough time to utilize all the resources.” Noah said he would just need to give it a try: “The only thing is that we probably need to be bold and try more. Sometimes it might not work very beautifully, but we never know if we don't try.”

Needs in training and support. In spite of the satisfaction, the interviews still revealed certain needs, or gaps between the current and desired states of things (Kaufman & Guerra-López, 2013). One specific need was for the university to give professors choices in computers. Nick had always been a Macintosh user, and he heard that the university sometimes considered if Macintosh's are too expensive, and his hope was that they would not choose to switch to other computer brands. He would rather that the university gave the faculty choices: “I'm hoping the university will continue to say if you want a Mac and you get a Mac. I am sure that other non-Macintosh computers can do the job.”

Nicole hoped that the university would make it known which service to call for specific technological problems, as support was distributed all across campus in a confusing array of services. Faculty members were not sure who did what when a technology issue occurs. It would help to have a centralized place where professors can navigate the complex and constantly evolving support structures the university has: “We do use a lot of technology in our department, and sometimes I have the experience of something not working and I don't know who to call.” (Nicole) However, Nicole expressed sympathy toward support teams as she realized that employees were overworked as there were not many Helpdesk professionals after the university eliminated some positions during the previous year. Another professor discovered that staff resources were spread out too thinly as well: “Usually when we have a squeaky wheel, if it's squeaky enough, they tend to fix things and they just redid some stuff in the classrooms and made it much easier to do the technology” (Naomi).

Naomi indicated that she would need training, but “I'm not sure about that because I'm not sure what I'm lacking,” since the university did not provide some diagnostic tool or an overview of the training that would be available. “I had been trying to figure out how to use some of the tools there [in Canvas], but I'm not an expert by any means. I know there's a lot more I could do, but I just don't know how.” The issue that faculty members “do not know what they do not know” (Savannah) could be addressed by having a brief faculty showcase of their teaching through a conference-style mingling each semester. Currently, the Teaching and Learning Center provides Catsville professors a one-day session one week before the semester starts to be quickly exposed to tools and methods of teaching. However, communication about all tools still seems insufficient.

Another gap in support and service is the targeted populations the university serves. While faculty may feel they are well-supported and trained, teaching assistants, course facilitators, some of whom work as part-time faculty, rely on the professors they work with to get training and support. Nathan found that he constantly had to use TAs “assigned to me,” and “my work requirements are so sporadic. I felt bad because there'd be weeks or there's almost nothing for them to do and then there's way too much for them to do.” It would be best to have an administrative assistant coordinate their work and training, but unfortunately, his department did not have a dedicated full-time administrative coordinator. Noah found that contrary to the belief that students are more tech-savvy than professors, many students did not know how to use basic educational technology tools: “And sometimes I asked them to do something through Canvas and they are not ready yet. I still need to spend some time to train them how to do that through Canvas.” Such technical training should not have been the tasks of professors. Support teams should better serve such needs as they often have greater expertise. In addition, having support teams provide such training also increases the consistency of use for such tools.

In conclusion, the interviews revealed that nonusers learned through a variety of channels, some within the university and some through professional venues such as conferences. They perceived Catsville University as having superior support and training for faculty, but they have also raised the issues that staff members are overworked, that resources are scattered, and that support could be better communicated more frequently and strategically.

Summary

In this chapter, I have revealed faculty responses to the SoCQ and found that faculty members who were not using screencasting to give feedback displayed similar trends in their

concerns. Most of their concerns were concentrated in the “unconcerned,” “informational” and “personal” categories. The interviews confirmed that they need better communication about what the screencasting tool does.

Most of the interviewees showed interest in using screencasting to give feedback. If they chose not to use it, the choice did not result from negative perception or the lack of resources. Rather, the university should continue to raise awareness of the method by providing information that comes from research and best practices from users. Having provided the software and some previous training would not be sufficient.

While they showed satisfaction with training and support, there were blind spots in the training, specifically how screencasting could be used to save them time and what the research said about it. In addition, the university support teams should do a better job training students, teaching assistants, and part-time faculty in using technology tools as well as instructional methods (such as using screencasting to give feedback), specifically for TAs and part-time faculty.

Chapter 5: Analysis of Users

Like the nonuser participants of the study, other participants had been exposed to screencasting as a teaching tool through license ownership, group sessions, and individual coaching. Some of them had moved on to become users of screencasting for feedback. In this chapter, I will describe their experiences with feedback, screencasting, and the training and development they received.

Among the 51 unique potential participants whom I had contacted for the study, 21 completed the SoCQ and eight professors self-identified as users of screencasting for feedback. As described in Chapter 4, two participants mistakenly self-identified as nonusers in the questionnaire, but they had not used screencasting to give feedback. I changed their categorization to users to ensure accuracy in records. Among the 10 users, one indicated in the questionnaire that he did not want to participate in an interview. In the end, I reached out to all nine available users for interviews and all nine were interviewed between May and July 2019.

Summary of Questionnaire

The SoCQ results showed that the greatest concerns among users ($n = 10$) were unconcerned (81%), informational (69%), personal (65%), refocusing (52%), and collaboration (48%; see Figure 7).

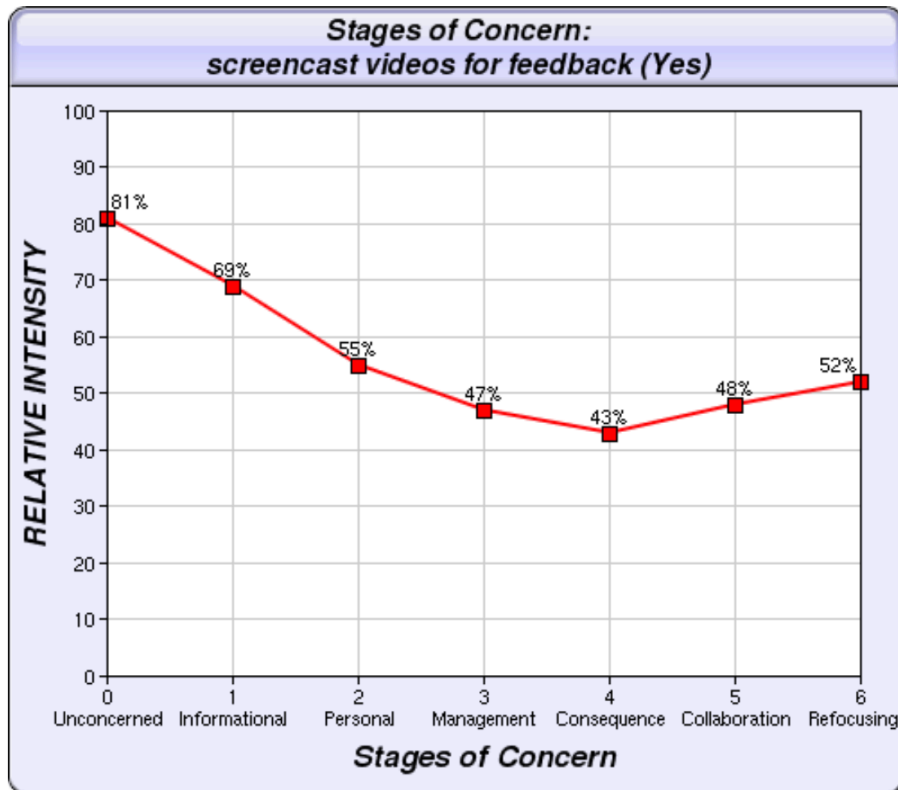


Figure 7. A line graph of aggregate SoCQ results for users

Three patterns emerged from the aggregate results: First, self concerns remained high, followed by impact concerns, while there was a lower “task” concern. Second, there was greater internal diversity among users compared to nonusers, showing that users were concerned with different factors in the use of screencasting for feedback. Third, there was great interest in “refocusing” concerns.

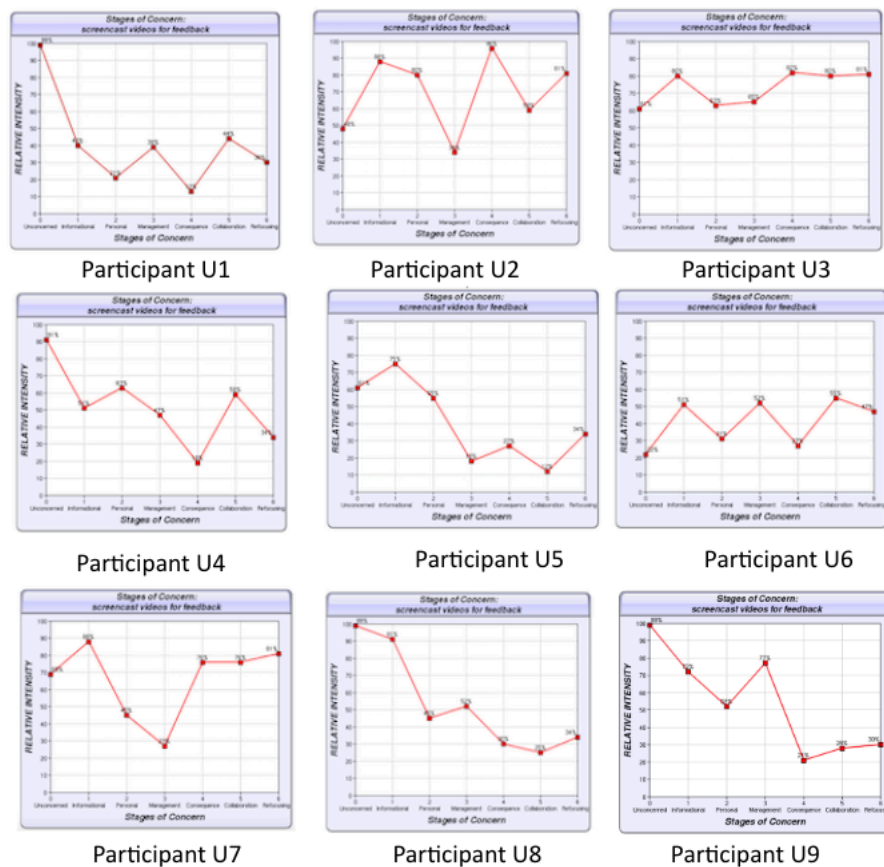


Figure 8. Line graphs showing an overview of SoCQ results for individual users

From their SoCQ profiles, one can see that the “self” category of concerns, consisting of “unconcerned,” “informational concerns” and “personal concerns” are still rather high in the aggregate results, which may indicate that even among users, screencasting for feedback was still a novel approach they were only beginning to use at the time of this exploratory study. Users might be using the method skillfully, but as screencasting for feedback may not have been discussed frequently in the literature that these professors would frequently read, they were not sure whether they were using the method in a way that was appropriate or efficient. They would need information to confirm what they were doing was the correct approach.

The concerns for other factors were also fairly high. Looking individually at these profiles, one could see that individual users had unique high concerns that do not necessarily follow the same pattern, as shown in Figure 8. For instance, Participant U2 had very high concern scores for “consequence” and “information,” while Participant U3 had high impact concerns, namely “consequence,” “collaboration,” and “refocusing” concerns. A concern is not necessarily a factor that worries a user so much so that he or she will not use it. Rather, it is a factor that has registered the attention of a user. In this sense, users seem to be more sensitized toward a variety of factors surrounding the use of screencasting for feedback. Their higher concerns scores may also explain how they were motivated in adopting screencasting as a feedback method. The interview analysis section will provide additional details about their concerns.

Users’ profiles revealed that the “refocusing” concern score was generally high for all users (52%). According to the SoCQ, refocusing concern shows that “the individual focuses on exploring ways to reap more universal benefits from the innovation, including the possibility of making major changes to it or replacing it with a more powerful alternative” (George et al., 2006, p. 8). Some of the users had gone through Camtasia training and learned to use Camtasia to produce digital stories. Using screencasting technology to give feedback is an attempt to refocus the technology for another teaching and learning purpose. Inspired by such past experience in refocusing, users were generally curious what other benefits this fairly versatile technology could present.

Summary of Interviews

Following the questionnaire, I interviewed nine users of screencasting for feedback.

Table 4 shows the profiles of these nine users, with their department names altered and pseudonyms assigned for each professor for easier readability and consistency in narration. All user pseudonyms start with “S,” standing for screencasting user.

Table 4

User Participant Profiles

Professor Pseudonym	Department	Method of Exposure to Screencasting
Samantha	Theology	Camtasia license
Samuel	Theater	Camtasia license Training session Individual coaching
Sarah	Environmental Science	Individual coaching
Savannah	Education	Self-taught
Sawyer	Theology	Camtasia license Training session
Sebastian	Family Studies	Training session
Simon	Arts and Design	Camtasia license
Sophia	Communication	Training session
Stephen	Theology	Training session

These nine users are distributed diversely in seven departments with the exception of three professors in the Department of Theology. The chair of the Department of Theology constantly visits the Teaching and Learning center to lead or participate in sessions. Two of the three theology professors were also academic leaders at the time of this study, and were filling more roles than simply teaching specific courses. Samantha lead the graduate distance learning

programs, which intentionally promote the use of various educational technology in teaching. Sawyer lead a group of professors in the teaching of Christianity and culture, a required general education course in this university. He not only taught, but also conducted professional development for fellow professors. Other professors had adopted a screencasting for feedback method of their own as a pedagogical choice rather than the result of organizational influence. During these interviews, I mentioned that I would like to see some examples of their screencast feedback and student evaluations. Five of them provided me specific examples of giving feedback to students, which helped me understand how exactly they give feedback using screencasting. An analysis of questionnaire results and interviews is presented in the following sections.

When scheduling the interviews, I told the interviewees that I would meet them at a location of their choice to make sure they felt comfortable. Four of them came to the Teaching and Learning Center for the interview. I interviewed four participants in their offices. One professor was in another state at that time and our interview was conducted by phone. In all these scenarios, they were comfortable with me recording the interviews. At the start of the interviews, I shared with them their SoCQ profiles, which included detailed descriptions of the stages of concern, which they had not seen from the automatically generated email summary. I briefly went over each interviewee's profile with them, usually showing the definitions of the concerns and concerns with the highest scores. I also defined screencasting for feedback, emphasizing that I would include synchronous virtual meetings with screen-sharing components as screencasting for feedback as well.

In all interviews except the one conducted on the phone, I showed three video examples of screencasting for feedback: screen capture only, talking head only, and screen capture with a talking head in the corner. As the interviews went on, I added a number of examples from previous interviewees to the repository of examples and showed them briefly to later interviewees, who were mostly users. These videos fall into the same three categories of the previous three, but the later videos were more recently produced. I played each clip very briefly and explained what was going on, including a rationale for choosing the method. For the phone interview, a link to the videos was sent. These methods established a shared understanding of screencasting for feedback. Showing these examples increased the clarity of the concept, increased curiosity among nonusers, and confirmed to users that they were in a larger community of fellow users of screencasting for feedback. Such demonstrations also made it possible to have deep conversations because there was not a need to spend additional time during the interview to explain what screencasting for feedback meant and the types of feedback that were available, as it was possible to reuse the previous examples as a frame of reference using language like “as you have seen from so-and-so’s video.”

After I had transcribed each interview, I also wrote memos to capture any additional observations that had not been recorded in the transcript. Interview transcripts were then coded first using in vivo codes to record themes that emerged. With a second pass coding I organized them into categories which were linked to the research questions as well as the theoretical framework. The coding process was completed for each interview regardless of their user or nonuser identification, using the same categories of codes to ensure that the two groups could be compared. In the end, I created the following categories of codes.

1. Process codes linked to RQ1
2. Concerns codes linked to RQ2
3. Adoption codes linked to RQ2
4. Training and support codes linked to RQ4

Further details about these codes are available in Chapter 4 of this dissertation.

Process: How Users Give Feedback

As in the case for nonusers, the EAT framework by Engeström (2000) was used to guide the coding process answering the question about how users give feedback to students. Figure 9 shows a brief summary of the themes that emerged:

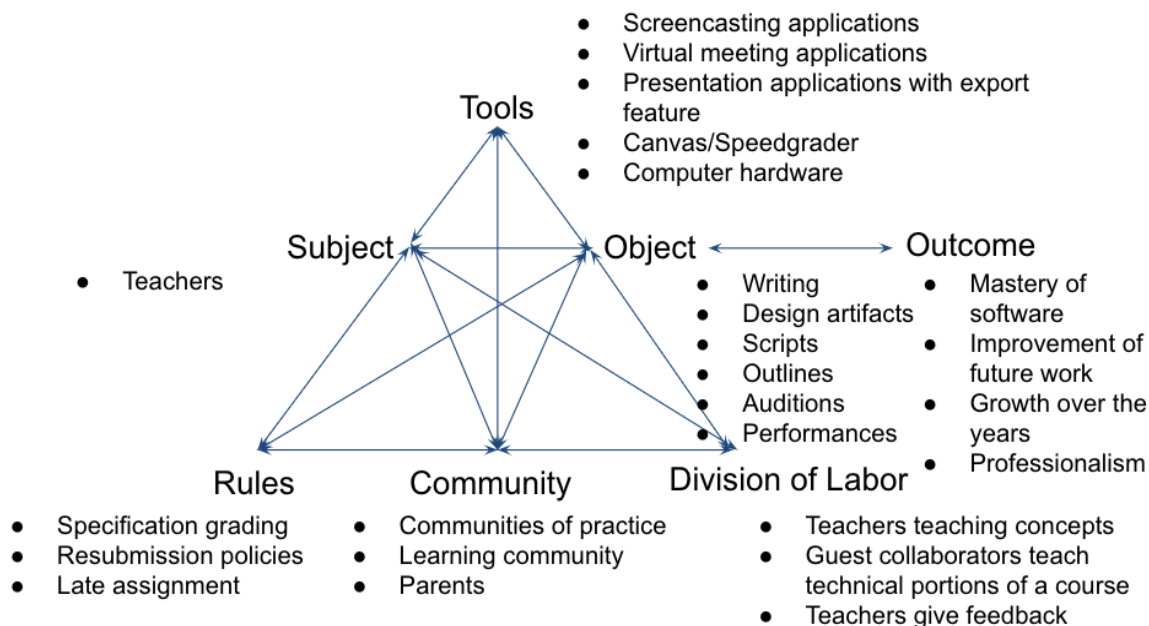


Figure 9. A diagram of extended activity theory (EAT) framework for users. From “Activity Theory and the Social Construction of Knowledge: A Story of Four Umpires” by Y. Engeström, 2000, *Organization*, 7(2), p. 303. Copyright 2000 by Sage. Adapted with permission.

Subject. Teachers are the subjects in the activity of giving feedback. In giving feedback, users of screencasting orchestrated different elements to deliver the greatest outcomes for

students. In giving feedback, they took into consideration the subject matter at hand, using text for some and videos for others. For instance, Stephen chose his medium of giving feedback based on the nature of the message, which he categorized as “informational,” “affective,” and “spiritual”:

If it's just informational, I will often just send an email. Okay. But if there's something that might be a little more personal or a little more emotional, or something where there might need a little more of a personal touch, I might record a video so that they can see my face. . . . If there's something where I need to display some content, you know, I might just do the screen grab video. (Stephen)

They chose to give some feedback individually and some to the entire class. They also were mindful of their own time and energy commitment in the method they chose to give feedback, which is explained further in the section about their concerns in using screencasting to give feedback.

Objects. Teachers used screencasting to teach courses that collect *objects*, or student assignments in multiple formats. Samuel taught acting and directing and his assignments included scripts, outlines of scripts, recording of auditions, and recording of live performances. With screencasting, he was able to pause a student recording, comment on the details, and then move on. Such screencasting feedback makes his comment specific and closely tied to every detail in students' work.

Simon taught graphic design. In one of Simon's screencast comments, he opened a student's file, which was the design of a table in AutoCad. He was able to rotate the table to show the tabletop, legs, and notches. He explained the problems with dimensions, thickness, and alignment as he was operating the software to demonstrate the strengths and weaknesses of the design. He made suggestions on where improvements could be made. He also praised the student

for her effort to create a beautiful tabletop. The demonstration of the 3D model on the screen accompanied by his audio narration was direct and easily accessible, even for the non-major such as myself. It would have been very difficult to use only text to explain his feedback on the design. Professor Simon indicated in the comment that he had sent an email earlier to the student, but obviously, this video was a follow-up attempt to further illustrate his thoughts on the student's work, which shows that emailing with text would be inadequate to help a student understand how the design could be improved.

Sophia taught speech and she also found it helpful to use screencasting to comment on specifics of student work. She became so skilled at it that she used screencasting to comment on student writing as well, including their speech outlines. In one of the examples she shared, I found that she commented on a student's outline for 7 minutes and 33 seconds, which translated to 1296 words when transcribed (see Figure 10). She produced such comments with Screencast-O-Matic and attached the video directly in SpeedGrader, where students can just click and play to hear her feedback. In writing, she may not be able to produce as much feedback in the same amount of time. In this specific example of a comment, she went over the outline, pointing at different things in the outline, including format, which made her comment specific and easily understandable.

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T couples meet them ("Child," 2016).

Play Media Comment

interest in having children soon, and I would want that process to run as smoothly for them as possible.
D. Thesis - Equality across many aspects is important to Americans, so LGBT parents should be given the same opportunity to adopt as heterosexual parents
E. Preview - Adopting is a difficult process, but it is worth it to the parents who want to build a relationship with their adoptive children.

(Transition: The time and effort that goes into adoption is not something that everyone is willing to do, but to others it means everything to them.)

II. First Main Point The adoption process can already be very long, and it should not be made more difficult for LGBT couples (Parris, 2017).

A. First and foremost, adoption should be in the child's best interest, not in the parents' (Thorsen, 2010).
1. If an LGBT couple can provide what is necessary to raise a child, then they should have the chance to do so.
2. If single parents are allowed to adopt, then two parents should also be able to also if they are qualified, regardless of sexual orientation.
B. There are many requirements that need to be met to be a qualified parent, and many LGBT couples meet them ("Child," 2016).

(Transition: There is more to adoption than simply meeting requirements.)

III. Second Main Point Adoption should be based on the relationship that children can have with their parents, not their sexual orientation (Barlow, 2013).

A. LGBT parents only add to the many wonderful ways a family can be diverse.
B. Because of the difficulty that LGBT couples have to go through, they must truly be committed to being a parent if they are willing to endure the adoption process ("Arguments").

(Transition: Like any other good parent, LGBT parents would love their children no matter what.)

04:03 07:33 1.00x

Submitted Files: (click to load)
21%
Nation_Issue_Speech_Outline_Draft.docx

Assessment
Grade out of 100
100

Assignment Comments
See video for detailed feedback on what to improve.
Dena Counts, Jul 4, 2018 at 2pm
Add a Comment

Figure 10. A screenshot showing a screencast video comment for student writing.

Tools. Like nonusers, users also utilized Canvas and the SpeedGrader to give feedback. Some also used Turnitin Feedback Studio, an assignment management tool that also includes a plagiarism detection function. Teachers made choices between course or assignment management platforms such as Turnitin, Canvas, Google Classroom, and others. Such choices were dictated by instructional purposes. For instance, while Canvas was the default method to use, Savannah chose to use Google Classroom, as her students would be K12 teachers, many of whom would use Google Classrooms in their future work.

In producing screencast videos, users had a larger toolkit of applications they used as opposed to the nonusers. Screencasting applications that users had taken advantage of included Camtasia, Screencast-O-Matic, Explain Everything, QuickTime, Keynote, the screen recording function of a MacBook laptop, and the screen recording feature of an iPad in conjunction with the Teacher app of Instructure.

Users also used a variety of synchronous tools for screencasting, including Google Hangout, Canvas Conference, and Zoom. Such usages extended the classroom. For instance, Samuel was able to use Google Hangouts for theatrical production:

When I have production meetings, I remember for *Wonderful Town*, K. B. was in California, so she was going to be our new costumer. J. H. was in Georgia and he was going to be our new tech director, does the scene designs, and then my two stage managers were in, one was in California when the other was in another place. So I used Google Hangouts. And then the guy who was designing it was in New York City. So I had everybody in the Google Hangouts so that the students, I wanted them to be a part of it so they could hear what was being said in the production meeting and they could be taking notes. (Samuel)

Similarly, Savannah, a Teacher Education professor, used Google Hangouts to gather students and music professionals for her music education course: “I also teach a one-hour class for Music Education majors. And so in that class this past semester we also used Google Hangouts to talk to a band director in Houston and another band director here locally.”

Generally speaking, the interviews showed that there was much creativity in the use of tools for teaching purposes, including giving feedback, but a tool was often used for more than one purpose. Teachers who became accustomed to using screencasting to give feedback also used it to give lectures when they were out of town. Some professors started by using screencasting to give lectures due to sickness, travel, or inclement weather, but found that they could use it to give feedback to students as well. As shown in one of the videos I shared at the beginning of interviews, one of the professors at Catsville taught online and had to read and respond to numerous student comments in the discussion forum, and he started to create summary videos to share with the entire class. Such creative uses save professors time and create additional opportunities for learning.

When users chose tools, they did not necessarily base their choice on the sophistication of a tool's functions. Rather, they chose tools that met the majority of their needs; simplicity often trumped functionality in their choices. Savannah said she chose Screencastify, a Chrome extension, as it was fairly simple to use. She said she simply did not need all the "bells and whistles" of other programs. Stephen chose to use QuickTime to produce screen videos, even though the only editing function he used was trimming the beginning and the end. He was confident in his ability to articulate his thoughts during the recording process.

Outcome. For users, the learning outcomes for feedback were multifaceted. Other than mastery of content, students also learned computer applications by seeing professors demonstrate it. In the case of Sophia, video comment on a speech outline was part of a larger project of creating a speech. Video comment on the outline was projected not only to improve the outline as an artifact, but also to improve future work, including the live speech in front of class. Samuel taught performances using screencasting videos to point out quirks and idiosyncrasies in student directing or acting. "For beginning acting, it is a lot about how they're bringing their own personal mannerisms and idiosyncrasies and imposing those on the character, and they are not aware that their leg is bouncing or that they're slapping their thighs to punctuate every moment" (Samuel). By using screencasting, it was possible to point out such issues so that behaviors could be changed for year-to-year progression in skills and levels of perfection. Samuel said he could observe the "breakthrough" moment as students journeyed through their college career if they received quality feedback.

Outcomes may also include professionalism. Students learn from professor feedback how to negotiate the terms for their evaluation, as in Sebastian's example of specifications grading.

They learned to be punctual in submitting their work (Sophia). They learned from the professors' examples in the feedback how to communicate professionally. Savannah, for instance, said she used her own feedback to show her students, future teachers in the K12 setting, how to give feedback effectively, efficiently, and caringly. Similarly, Stephen wanted students to learn from his feedback in order to learn how to give their future clients feedback in a way that is constructive and not mean-spirited.

Rules. In the screencasting examples that users provided, users often explained the rules that governed assignments. Sebastian used the specifications grading method that required students to contract for the letter grades they would like to get, while also giving them the flexibility to choose their separate paths to learning by giving them tokens to spend, a method described in *Specifications Grading: Restoring Rigor, Motivating Students, and Saving Faculty time* (Nilson & Stanny, 2015). Sebastian gave students the freedom to choose what they would like to do, which worked only when the rules were clear. In his syllabus, he told students how many tokens they could spend in a semester. In the interview, he explained that

I use a specifications grading model, which includes the option, which includes grading [with] *complete* and *incomplete* rather than giving points or percentage grades on a lot of student work. And so that means that I also give options for revising and resubmitting if a student gets an incomplete. (Sebastian)

Such rules are not always obvious to the students who might be used to traditional methods of grading. Sebastian said he spent extra time to “craft specifications for each assignment” to describe expectations and to create clear rubrics. Screencasting is a way, he claimed, to tie the expectations, rules, rubrics, and learning outcomes all together and it exemplified the visible learning principle promoted by Hattie (2015). In his screencast videos,

Sebastian sometimes explained how his rules of grading would work and the choices students could make:

If you want to use a token to resubmit the essay questions for Chapter 1 you can do so. You can just resubmit questions and answers to the assignment here on Canvas. I encourage you to leave a comment with your assignment, letting me know that you're spending a token to resubmit those. They'll show up in my to-do list on Canvas to re-grade, so that I'll take a look at them again, of course, if you want to do that. It's up to you whether you want to resubmit these to try to get a complete grade. (Sebastian)

Stephen also used specifications grading, but instead of correcting and clarifying after the fact, he used what he called “prefeedback” or “anticipatory feedback,” using examples from the past to help current students prepare for their work. In other scenarios, users of screencasting explained why students got certain grades. For instance, Sophia made it clear to students that she would not accept late work. However, instead of using videos to give feedback to catch students off guard, she created a video to explain her rule:

I don't take late work unless there is a written documented excuse that is like medical, major, major surgery, family death, that kind of thing. I don't take late work. So I usually, especially in online classes, have a video that I go through my syllabus and I highlight that because I'm like, if it's after my deadline is 11:59 PM and you turn it in at 12:15, I'm not going to take it. (Sophia)

Communities. Users of screencasting for feedback had a more complex repository of terms to describe communities in the process of giving feedback. Teacher-student relationship is a key part of the sense of community. Stephen recollected a strategic session the university held a few years ago when professors, staff, and students were engaged in a strength, weakness, opportunity, and threat analysis of the university. One of the strengths that all three groups agreed on was that “one of our strengths is faculty-student connection.” Stephen was aware of the need to build connections in most of the things that he did as a professor. When he was teaching students that were not on campus, he once used Skype. For him, such concurrent

sessions fulfilled the need for connection more than it did for content mastery. Sebastian said that by using screencasting, it was easier for him to communicate to students that “the work is what I’m criticizing,” instead of the person. Sarah taught some of her course online and she always wanted to find out how to “develop a learning community” and “relationships” in an online setting. For Simon, the community went beyond the university to involve parents and friends:

So, so I imagine that, for example, if I critique a piece of work and [the] student goes home and disagrees with the grade and they want to show it to their parents or they want to show it to a friend. Well, I don't mind. And it could be that the parent or friend or other teacher, whoever opens it, they can say, oh yeah, he's right. Or they can go, I know he's wrong. These are reasons. (Simon)

It seems that screencasting affords another opportunity for professors to promote a sense of community among students. Video comment is a multimodal exposure of a professor to his or her students. While text can be presented in a matter-of-fact fashion, there is an opportunity for a professor to project more personal care toward students in using screencasting. Savannah claimed that there was less “perceived harshness” when she was talking to students. Sebastian focused on the student communities by using screencasting when giving feedback: “I feel like I can use tone of voice, you know, and, and facial expression if their faces are on there, to convey that I feel warmly toward the student personally.”

Division of labor. Division of labor was also present for users of screencasting. For instance, Samantha designed a Hebrew sequence of courses to be taught online, but others taught these courses. Simon worked with what he called “moderators” or “collaborators” who graded his assignments:

I don't know how Catsville call them, but you know, how we have the graders and so on, work with Canvas courses. I always tried to get one of those moderators or collaborators to be familiar with the discipline. And I think that type of collaboration with somebody

else in this field or somebody else with experience on the subject. It reinforces the subject matter, or reinforces the idea that I try to be conveyed in the course. (Simon)

These moderators or collaborators were professionals in the art and design fields who had been asked to teach a portion of the course, especially the highest technical aspects of an application such as Adobe Photoshop. From the example that Simon provided, Simon gave students feedback using screencasting. He could open a design assignment a student submitted, and he could just comment on it, thus integrating what he taught in class conceptually and what the students learned from moderators and collaborators.

Concerns: Users Concerns With Using Screencasting to Give Feedback

In order to answer RQ2:—What are the student feedback experiences of faculty members at a southwest private university who currently choose screencasting to give feedback on student assignments?—I asked users to compare tools, describe how they used them, why some were chosen but not others, their concerns in choosing some tools, and the courses in which they used these tools. Their profiles showed greater diversity in their primary concerns compared to nonusers, and such diversity was confirmed in the interviews.

Unconcerned. The aggregate score for “unconcerned” is still the highest among users, at 81%, but it is substantially lower than the score for nonusers (99%). This means that for users using a particular tool to give feedback did not seem to register much attention as compared to other teaching, research, or service activities in their roles. However, during the interviews, we were able to talk at a microscopic level about feedback, which caused some users to raise their attention to both screencasting and feedback.

Informational. For users, there was very little need for information about screencasting; there was no coded data for users in this category. Users had chosen to use the method to give

feedback and most of them were aware of what screencasting did, and they really did not need to know everything there was to know about a screencasting application in order to start using it. I mentioned a few alternative tools they could be using, but users were mostly satisfied with what they already had, and they did not express particular motivation to switch to another tool. However, they were all curious about Instructure's Studio, which is now located in Canvas and the proximity could mean greater convenience for them.

Personal. Users expressed more concerns related to personal demand, their sense of self-image, or self-efficacy. Time and the speed to produce continued to concern users just as they concerned nonusers. Interestingly, as discussed in the literature review, there is no consensus that screencasting would always save time. Sophia vacillated between text and screencasts in giving feedback as she said she types fast as well. Stephen expressed similar concern that sometimes screencasting can waste his time despite its usefulness. "I type really quickly and so I can get a lot, I can say a lot of things in a very short period of time with my fingers." In addition, even though recording did not take that much time, it often wasted his time to update Java, upload a video, or re-produce a video after the first one failed to be saved. Stephen also complained that slow Wi-Fi could be an issue for video production, especially at home. He also preferred to complete all his grading in the office and save time at home for his family. Stephen used two terms to succinctly summarize his personal concerns: "technology bandwidth" and "personal bandwidth," with the former meaning Wi-Fi or data speed and the latter referring to his time and energy.

The personal concern with talking head videos was greater than the concern for screen capture videos, as a number of participants worried about their personal appearance in the video.

Some did not feel confident they looked all right in a video, even though raw, authentic videos may appeal to students as much as, if not more than heavily edited and polished videos.

However, other users had become very comfortable recording themselves, as they had come to the realization that some videos were consumed only once by particular students, instead of publicly shared and seen by the world for an extended period of time.

Another personal concern came from the setting for recordings, but the approaches could be quite varied. Sophia mentioned that she had to get the background “decent” in order to record. Sawyer, however, just recorded in his backyard with activities going on and family members appearing because such natural setting shows a personal side of him as a professor. He considered this to be valuable for his teaching.

Management. The management score was high for Stephen as he was concerned with the coordination of resources and processes. When asked about his use of the office hour to give feedback to students, he emphasized that there was process complexity, which could be resolved by making the office hour optional:

Have students come to their office hours. But all of my classes are just too big. And so it's really hard to imagine that there could possibly be time to do that. And both on my end and on the students. I mean the logistical challenge of trying to arrange appointments and things, especially if it's required; if I made it optional, they'll be a lot easier.
(Stephen)

Different resources in the university are available to support faculty, and management concerns can result in the utilization or nonutilization of such resources. Most users came to the Teaching and Learning Center for sessions, which often took place during lunch time, with the exception of two users: Samuel said he would not find the time to participate in group sessions. Rather, he found one-to-one sessions with the staff members at the Center to be more useful.

Sophia said she did not attend group sessions as she already knew many of the tools taught in these sessions. Stephen preferred to get help from the Teaching and Learning Center rather than the Educational Technology Department as he saw the latter to be more helpful when his work involved “big, large” technological innovation projects, while he was more preoccupied with “teaching and learning tech,” which he believed were not the domains of the Educational Technology Department.

I asked if users had come to the Media Lab where there is less distraction and a more professional background for audio and video recordings, as well as professional software and hardware. Few seemed to be doing that, even though users acknowledged the influence from the staff, especially the director of the studio who is also a professor. Natasha said she did not come to the studio because it would take an extra trip and it would involve scheduling, which could add to the complexity of what could be an impromptu feedback video on individual assignments. They preferred to come to the studio for videos that would stay longer in their course, such as a welcome video that could be reused semester after semester.

Users also expressed concerns with the teaching load. Generally speaking, professors found themselves to be constantly doing more with fewer people. A year before the study, the university negotiated contracts for some professors to take early retirement, which reduced the number of professors in many departments. Users could be frustrated if the university would not address management concerns about personnel shortages. Sarah is a new faculty member who had to take an additional course after the sudden death of one of her colleagues. She was under much pressure to simply complete the tasks of teaching with many students in her multiple classes. Therefore, she did not feel motivated to continue using screencasting to give student

feedback. She specifically mentioned that “management” of teaching tasks was one of her concerns.

Consequence. The interviews showed that users viewed feedback modality as having an impact on student receptiveness to feedback and eventually their learning. While Stephen and Savannah perceived screencasting feedback as less harsh than text feedback, Simon was concerned that he might sound negative in his video comments: “The drawback is, for some reason I am too critical or too negative at the moment. On the feedback . . . they have a record of how negative I was.” Sebastian said he sought to address the issue of harshness of feedback by telling students that his criticism was related to the work, not the person. The conflicting reports seemed to suggest that the modality of feedback might not necessarily be related to perceived harshness. However, users considered video feedback as having an obvious advantage of producing a greater volume of content as compared to text alone.

I find that when I'm just typing the feedback, I tend to be more succinct. I'm more likely to focus on just the essential that I want to convey, which might be just that they need to change something and resubmit their work. (Sebastian)

By using screencasting, he could talk to students more about their work and address their concerns with his criticism, if any. Sebastian also expressed the advantage of videos to give more of himself as a professor. His students appreciated his video feedback as shown in some of the comments in his teacher evaluation:

Dr. S, I just saw your video comment along with my graded essay 1 questions. I wanted to say thank you for providing good and helpful feedback, I have never had a professor give me such helpful feedback for an assignment. Thank you so much, I really appreciate the time you took to do that. (Sebastian's Student #1)

I very much enjoyed his video feedback because I felt as if he truly graded my assignment and it wasn't just busy work. (Sebastian's Student #2)

I thought the way that you provided feedback on all our assignments at the beginning of the semester was very helpful. It showed me what I was doing correctly and what I could do to improve. (Sebastian's Student #3)

Mr. S, I want to say that I love and appreciate the media feedback! It was so helpful and very useful. Thank you. (Sebastian's Student #4)

Collaboration. Following a recent personnel adjustment, there were fewer full-time professors and it was common for professors to work with part-time faculty and teaching assistants, but supervising them would take additional "personal bandwidth" (Stephen). Sawyer's SoCQ shows that the highest concerns were "informational," "management," and "collaboration," as he was wanted to know how to best work with the other professors he hired and led to teach a course. Both Stephen and Sawyer worked with large classes as some of their courses are required for all freshman students and this required both of them to work with other professors and teaching assistants. They both felt "crunched" by time and they were constantly looking at methods to optimize the process of their teaching.

I'm very confident that I could figure it out. What I'm not confident about is training my seven teachers who live in Fort Worth and New York and Houston and Abilene, how to use these tools and, and expect them to use them because they're adjunct teachers. But I want them to give feedback. So, so for example, I've told my teachers, you must give video feedback Monday, Wednesday, Friday, or at least a video talking about the day and the assignments. I've given them two choices, iMovie and the Canvas video, I haven't told them about Photo Booth, which might be the easiest solution. Yes. So I need to know about this information or even the screen capture that you have on Mac. And train them when they're not here. So that's my biggest challenge. Training other teachers. (Sawyer)

In such cases, the support services, such as the Media Lab, the Educational Technology Department, or the Teaching and Learning Center could provide targeted training for part-time faculty and teaching assistants to relieve this burden from the professors. Some professors chose to reconfigure the ways they work with their collaborators by optimizing the subprocesses of

their work. Simon, who worked with a course facilitator, simplified the coordination by asking the facilitator to teach only the technical parts, while he gave feedback on student work.

Refocusing. There was great interest among users to refocus—to use an innovation in additional or alternative ways. Faculty using screencasting to give feedback also used it to provide orientation to the course, to make announcements, to explain assignments beforehand, or to produce lectures. The use of screencasting for feedback increased their versatility as professors. Having seen the benefit of such feedback, Sophia even asked her students to learn to use screencast:

I used to have a group project where it would take two weeks for my groups to make the presentations because I had a final project that would take two weeks of class time to do. ...I changed the assignment last year to a screencast. So every student has to do a screencast or the final project. It's a 15-, 20-minute presentation for concepts in the course. (Sophia)

Similarly, Samuel asked students to send recordings of them acting or directing so that he could comment on it at any time. Encouraged by the success of using screencasting to give feedback, he also wanted students to learn more technical tools, including Adobe Premiere, which he believed to be helpful to students as they grow professionally. Screencasting for feedback opened doors to innovative teaching practices for these users.

Adoption: How Users Adopt Screencasting to Give Feedback

To answer RQ2—What are the student feedback experiences of faculty members at a southwest private university who currently choose screencasting to give feedback on student assignments?—I asked users what led them to consider changing their method of giving feedback, and if there are methods they have heard of but have not adopted. In the following section, I describe their concerns with existing methods of giving feedback, perceived

advantages of using screencasting, and their interest in continuing to use screencasting to give feedback.

Concerns with existing method. The existing method is the current way professors give feedback, whether or not that entails using screencasting. Often users seek out alternative methods to give feedback when they identify issues with an older method. Users usually start using screencasting after they see problem with text comments, as they see typing text as overwhelming. For instance, Sophia said: “In my class, I have 30 students. And so if I have 30 students write a six- to seven-page paper. Time. . . . It is hard to grade all of those and give as much detailed feedback as I'd like to.”

Sebastian said that students did not come to his office hours as much as he would like them to, which would have made it easier for him to give detailed feedback. Sawyer was also frustrated that students did not necessarily talk to him before or after class if they had a problem, and he could not be sure if students actually read his written feedback on assignments.

However, users also showed concerns with screencasting as well after having used it for a while. Simon’s main concern with the use of video was that “I generally sound too formal or too dry on feedback. I'm kind of matter-of-fact, whether it's written or recorded.” In a similar way, Samantha mentioned that she could sound harsh, frustrated, or tired when she used videos to grade for some time:

Whenever I use that media comment in Canvas. I always want to make sure that I'm controlling my tone. If you've been grading papers all day long and you're tired and maybe a little frustrated, sometimes you can sound a little harsher than you intend. Or you (deep sigh) can be telling the same thing to the 15th student about this thing. And so sometimes that's the mode that I'm in if I have been grading for a long time. I recognize that I'm getting a little frustrated then I'll try to do more of a handwritten or a typed response to students because that helps to avoid the tone that . . . It's not the student's fault that they're the 15th paper that I graded that day, and I'm getting tired. (Samantha)

Perceived advantages of screencasting for feedback. For many users, there were benefits when using videos to give feedback, such as tone of voice and richer emotional content. Sawyer started to use videos to give feedback because he had seen the problem of purely text-based course as lacking in personal touch, emotions, and a sense of community. “Text can be precise, but it also can be misunderstood whereas you can see someone's face, you have nonverbal language, eyebrow movements and whatever else, smile and tone of voice. Video, I think, is better.” With only text in communication, students could fail to engage sufficiently as a result. From his perspective, video usage should not be a one-way transmission but a two-way feedback:

One of the challenges in online education is getting feedback from students. We got to talk about it two ways. I need feedback from students to know are they engaged, are they tracking with me, are they understanding? And I can't see their face. I can't see the body language or the behavior. And so I have to interpret their work, their submissions. And it may be like two, if there are like three or four assignments and they didn't do the last two, that's when I notice. Oh, they're not engaged. But that was two days ago that they stopped being engaged. And so there's a lag. There is, there's a little bit of time that is a challenge. It's not, we can overcome this. This is okay. But it's a challenge to recognize when students become disengaged. And I can see that face-to-face when they don't show up, they're not engaged. But I don't see that they didn't submit an assignment until a day or two later sometimes. (Sawyer)

User dissatisfaction with screencasting to give feedback. Users were not satisfied with the technical restrictions they sometimes experienced when using screencasting to give feedback. For instance, Samuel was happy with the screencasting method in general, but the LMS he used restricted single videos to no more than 500 megabytes in size and that forced him to sometimes find alternative methods to store the videos, which could be frustrating:

That's a problem, because my, our scenes are long enough that they usually move past 500 megabytes. If it's a monologue, it's no problem. But if it's a scene that is seven to ten

minutes long, we move beyond 500 megabytes. And so then it's easier then to critique it on Camtasia and upload the link to Vimeo, which is what I've been doing. And then attach . . . You've seen that. Then I attach the Vimeo link. So then they . . . but the problem is that the more that a student has to click, you're taking that number down of how many are going to actually look at that video. If it's right there in Canvas where they see it and they, they'll watch it right there. (Samuel)

Technical problems such as software updates during the process of recording could also discourage users. Compared to text that is automatically saved, videos will have to be produced, sometimes trimmed, and then uploaded, resulting in processing time that offsets the benefit of the spoken message creating greater volume of content as compared to typed messages. These issues did not necessarily prevent professors from using screencasting:

As far as struggles with screencasting, a lot of times just the time for upload and all of that can be a little less pleasant than the simple just commenting in a doc and resending it. Because, you know, you take the time to actually record yourself and then it has to, you know, upload into either Drive, or when I use Screencastify, onto their platform. And just that kind of time. It's a little unpleasant, but not so much that I don't use it. (Savannah)

Decision factors. The interviews revealed the factors that influenced faculty decisions in choosing to use using screencasting to give feedback, usually a combination of perceived advantages and disadvantages. When making their choices, users asked the same questions nonusers ask: Is the new method complex? Is it convenient? Is it familiar? Does it save me time?

Complexity. Sophia attributed “ease of use” to the factor that influenced her decision, citing the DOI theory (Rogers, 2003): “And you know, when you look at Rogers’s research on why innovations are adopted or not, one of the hurdles is, it's just too difficult.” Stephen also expressed that ease was an important factor for decisions among his colleagues in the department: “Everybody around here just generally feels crunched for time and so if it's, if it's

simple and easy and can be as quick as what they do, I think they would be at least motivated to investigate and listen.”

Flexibility. Simon used screencasting to give feedback, as he had to travel out of state quite a number of times a semester. He simply could not be available to students all the time for feedback. Screencasting provided a great avenue for him to continue his teaching without interruption.

Familiarity. If a faculty member has learned to use a particular software application, he or she would often try to find other scenarios to use the same application. For instance, Simon said his “go to” has been Camtasia “because I’ve used it so many times.”

Time demand. Time demand continued to be a large concern for users as it is for nonusers. Sebastian’s rationale for using screencasting was that “it takes less time than typing.” Samuel expressed the similar motivation for using screencasting:

And that class, we do a lot of group discussion. So, everyone reads each other's scripts and then we talk about them in a group. But then there are times where it's just me giving feedback and at those times I'm really looking forward to using screencasting to accelerate, to cut down the amount of grading time that I spend. (Samuel)

However, users also had some additional decision factors that nonusers did not mention in the interview, for instance, standardization of the assignment, importance of nonverbal elements, course delivery modality, and individualization of the feedback.

Objectivity of the assignment. Users made choices about the modality of feedback based on the type of assignment they gave. If an assignment is standardized and objective, it seems to be better to write or type a comment. However, when the assignment is more subjective and the feedback has multiple layers, it is more likely for a user to choose screencasting. According to Samantha, if it was a translation assignment, she could simply type her corrections, as this would

be “very objective.” She said essays for one of her classes were more “subjective” and “interpretive,” and a screencast video would provide more elaborate feedback and the talk would be like this:

I can I see where you're coming from. I can understand how you might have arrived at that conclusion. Why don't you think about it this way or have you ever considered . . . this aspect of the thing that you're working on. It's less about this is wrong. And this part is right. It's more about helping to expand their horizon. (Samantha)

Nonverbal elements of assignment. Users saw screencast videos as adding nonverbal elements to their feedback, which is an affordance screencasting has, while text is not as advantageous in this aspect. Savannah used to teach elementary school students and she was enthusiastic about the full spectrum of verbal and nonverbal messages in a face-to-face meeting, which text alone did not provide. Screencasting became the next best choice. For Simon, it would be unthinkable to provide the equivalent amount of detail and clarity about what the students did right and wrong in their design work. He had he been using text alone without producing a demonstration video. Similarly, screencast video allowed Samuel to point out specific places in a student performance video what they did right or wrong. Videos also come with facial expressions and tones and allow professors to be more emotionally and communally connected with students. Stephen said he made choices about the feedback modality depending on whether the feedback was “informational” or “affective and spiritual.” For the latter, screencast videos seem to be more appropriate.

Delivery modality. Sophia said she gave screencast feedback to her online courses, because “it helps me teach” and “explain concepts.” She used screencast videos less frequently in face-to-face classes, but she saw the opportunity to add a video component to increase student exposure to the content:

We have somebody read. We have somebody take a quiz. And we have the instructor explain it, so that the student is exposed to a concept in different ways. So that maybe with the three different exposures, one of them they will get it. I see. So I think screencasting gives me another level of exposure, I guess we could still call it that. (Sophia)

Individualization of assignment. Sophia said she made choices about the way she gave feedback based on the individualization of problems in assignments. In one course she taught multiple times, there was a paper requirement, and she saw similar problems over the years. She gave in-class instruction before the assignment to tell students what problems previous students had had as well as feedback after they had submitted to point out issues that are common to the current class. She also taught internship classes where the problems were more individualized, and it would make it more appropriate to meet with the students or give feedback using screencast videos.

To sum up the analysis of RQ3, the interviews showed that users increased their tools to give feedback as they were dissatisfied with using text alone to give feedback. They still had dissatisfaction with using screencasting to give feedback, but they simply made choices between different modalities of giving feedback based on the nature of the assignment, the class, their familiarity with and the complexity of tool, and flexibility and time demand for them as professors.

Training and Support

Catsville provides training and support to faculty through the Teaching and Learning Center, the Educational Technology Department, and the Media Lab. Teachers can also learn to use software applications through LinkedIn Learn. The fourth research question that was addressed for this study was Q4—What type of training and support would best address faculty

concerns in using screencasting to give feedback? To answer this research questions, I asked these interview questions:

- What type of support would you need if you choose to use screencasting to give feedback?
- How do you learn to use a new method in teaching?
- What type of tools, including software and hardware, would you need if you choose to use screencasting to give feedback?
- How could we support you better in your feedback and in your teaching in general?

Three themes emerged from the analysis: learning method, satisfaction with support and training, and need for support and training. Below is a summary of these three themes.

Learning method. I asked specifically how users learned a new method in teaching. Answers included the same things that nonusers use: the Internet, colleagues in the same department, professional conferences, and the Teaching and Learning Center. However, users seemed to be more enthusiastic about trying new tools.

Samuel actually modeled the way of learning new tools, which he saw as an essential part of a student's professional skills. He trained himself to use certain tools and then he trained students:

I could experiment myself how to do it, and start training myself. And then I did our season announcement, announcing all the shows on Premier Rush and I'll be using, and I'm going to, I'm about to learn Premier Pro. So that in my Directing class, they have to do a portfolio that's a video portfolio, and then I'll be requiring them to, so I'm going to train them how to use either Premier Pro or Premier Rush to create that. So I kind of like jumping on things like that. (Samuel)

Sophia is a learner herself, and she used a variety of ways to learn new things. She would try it herself. If she could not use it, she would then Google some tutorial and as a last resort, she would call someone for help:

One of my personality traits and strengths is activator, which means I get really impatient. . . . But when I tend to do as, I do not like sitting around and I'm like, why? I know that. I already know that. Oh, okay. If I can figure it out on my own. I'll usually Google it, figure it out, or I'll, I'll email the instructional designer. (Sophia)

Similarly, Stephen learned new tools by attending the pedagogical sessions of his guild conference where he heard about certain tools or methods. "Once I hear about something, if I'm interested, I'll try to read about it online, watch videos and things and then just begin to experiment."

Users also benefited from communities of practice when they adopted new technologies. Stephen came to the Teaching and Learning Center frequently to learn new ideas from colleagues, and he also said that "hallway" conversations within the department helped each other learn:

Usually more just casually in the hallways. Well you know, if we have the door open, either I might ask or someone might ask me or I hear someone talking in it, kind of poke my head out. I've got this problem and I think I've heard that you do. So how can you tell me about how you did that? How would you solve this problem? And then someone else joins the conversation. And so we do a lot of shared resourcing. (Stephen)

Structured training programs for professors helped some professors to learn. Sebastian said he went through a "teacher mentor" program where he "probably learned more tools for good teaching just in that year than any other given year because it was just so focused." The program also sent an observer to observe his class and give feedback. He especially appreciated the feedback he received from the class observer that the teacher mentor program arranged for him. The observer was an education professor who used to be a school principal and who knew

how to observe and give feedback. Sebastian would like to have more structured programs like this to help him grow as a professor.

Some users learned from students by proactively seeking their feedback in the middle of a semester. Sarah sent an anonymous survey to students to encourage them to leave her feedback and suggestions. Such feedback provided her great insights about the methods that she used, and she sometimes discussed issues with the teaching and learning specialist in the Teaching and Learning Center to search for better ways to teach.

Satisfaction with training and support. Users showed great satisfaction with the training and support. Users appreciated the fact that the university purchased 24/7 support for Canvas so that they could call for help any time they needed it. They also appreciated what the Media Lab and Educational Technology Department were doing to get them the software they needed and provide the training for such software.

For professional development, users saw the Teaching and Learning Center as a hub where best practices were exchanged:

I've learned the most in the Teaching and Learning Center and I've attended a session where something was presented, something was described or one of the book clubs where different methods and tactics were described. I haven't necessarily sought out that particular method. I've learned it there. Sometimes there's been a book like specifications grading, for example, was presented in the Teaching and Learning Center and there was a book that was available and I read the book. (Sebastian)

Sawyer also showed appreciation for the Teaching and Learning Center and encouraged it to “keep doing what the Teaching and Learning Center does well, sharing teaching and learning strategies that help faculty and students. So that just that, that's the biggest help that I need.” He also liked how the university supported him and his teaching by “giving me time and

space to create content.” Samantha said she had everything that she needed and she showed understanding that not all sessions were attended:

You set the table and you invite people to come to the banquet, some people come and some people make excuses. So it can be hard to say. We have all of these resources that everyone's welcome to use and yet there's only a small percentage of people who make good use of those tools. But it's not for lack of opportunity to learn. (Samantha)

Need in training and support. When asked what they needed in training and support, users shared the following issues. Samuel wanted the university to have a “team of people” that professors could call. Currently Samuel only relied on one instructional designer, whereas in the past, there used to be three instructional designers, any of whom could help him. Having only this one individual subjects teachers to the availability of his time, which can become challenging when that individual leaves town for a vacation or a conference.

Sophia wished for the university to include items in course evaluations specifically about course feedback. Currently most of the course evaluation forms are related to faculty teaching and lectures, but not a specific item about the method of giving feedback, which she thought as limiting in the perception of teaching: “Most of the time when we hear teaching, we think about, at least I think so as a faculty member, I think about standing up in front of class lecturing and doing group things.” However, she thought that feedback should be a great part of a professor’s job and it should be evaluated appropriately.

Sebastian wanted better technical support for screencasting technologies. He was very happy with the 24/7 support for Canvas and would like the same approach for other technologies professors use for teaching and learning purposes.

Sometimes users still wanted to have additional training. For instance, Sawyer recorded talking head videos to give feedback to students, and he did not have training in producing screen capture videos showing things on the screen to students. He had also heard of Camtasia, but he would need training to be able to use it. Even though he was familiar with video technology, he still thought that “the hardest part is the learning curve. Just spending the hour or so that it takes to learn the program, get used to it, and use it, and then start using it consistently.” Sawyer also thought that adjunct faculty should be paid more. It is challenging for lead professors to ask adjunct faculty members to learn specific tools to teach when they are paid below the industry average for their work.

Summary

Unlike nonusers, faculty members using screencasting to give feedback showed diverse concerns, some of which have moved beyond “self” to “task” or “impact,” showing that users’ application of screencasting for feedback has sensitized them to various impacts that the method could have in the teaching and learning process.

Users still had reservations about using screencasting to give feedback, citing concerns such as time and bandwidth as causes for them to worry. However, most of them would not give it up. They made sophisticated choices about their feedback method, varying the modality of their feedback based on student need, the nature of the assignment, type of class being taught, and their own time and flexibility in using the tool. Users showed great satisfaction with training and support and they had been active users of university services. However, as they pondered better ways to use screencasting to give feedback, some still needed to be trained in new tools that have emerged since they first became familiar with using screencasting. In the following

chapter, I will compare users and nonusers and seek to address the research questions for this study.

Chapter 6: Comparisons Between Users and Nonusers

In this chapter, I compare participant responses to the SoCQ and interviews in terms of their schools, usage, concerns, adoption patterns, as well as training and support. In such comparisons, I address the four research questions in terms of similarities and differences between users and nonusers. Further discussion of the analysis and comparisons are offered in Chapter 7.

Comparison by School

Before sending out the SoCQ, I developed a custom prompt to ask for users' departmental affiliations, which included specific departments participants identified with. I contacted 51 potential participants from 27 academic departments for the research and 21 participants eventually completed the questionnaire. At the analysis stage, I consolidated the 27 departments into the five schools (Arts, Humanities, and Social Sciences; Science, Technology, Engineering, and Mathematics; Business Administration; Education and Human Services; Theology and Others, so that it would be easier to show trends and patterns if there were any.

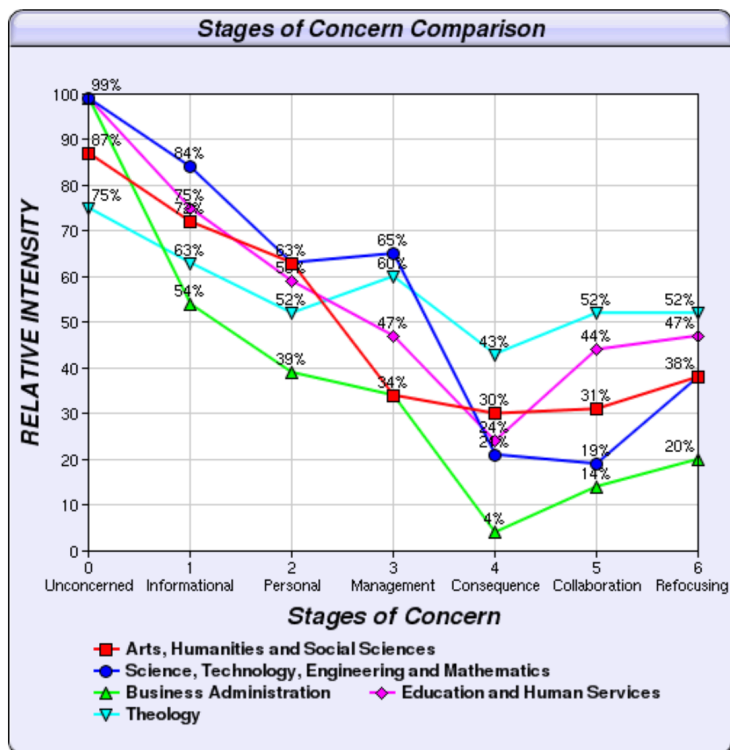


Figure 11. A line graph showing the comparison of SoCQ profile by school

As shown in Figure 11, schools were highly similar in the general trends of the stages of concern distribution. This is evidence that it was more of an individual decision for faculty to adopt screencasting for feedback as an innovation. However, the comparison chart shows the Department of Theology as having higher “impact” concerns as their department chair has been a frequent participant in the Teaching and Learning Center sessions and he has generally sought out advice on ways to optimize teaching practices in his department. Academic leaders’ active involvement in professional development activities for their academic units seemed to make a difference in increasing awareness and adoption. In this case study, all three participants from the Department of Theology used screencasting to provide feedback to students.

The comparison charts also show that there is general interest in “refocusing,” which indicates that people may be familiar with the screencasting technology and its application in producing digital stories and narrated lectures, but there is a gap in information about its application in giving feedback. From the interviews, I found that a number of nonusers used screencasting to produce narrated PowerPoint presentations or podcast videos for flipped classroom innovations but not for feedback. Once feedback is added to their list of instructional activities, they would benefit from having more choices in feedback modality.

Comparison by Use

In the SoCQ, the second prompt asked the following: Do you currently use screencasting to give feedback to students? The three response choices were “Yes,” “No,” and “Not sure.” A definition of screencasting for feedback was provided at the beginning of the questionnaire, which reduced the ambiguity of the term. As a result, participants chose either “Yes” or “No,” and no one chose “Not sure.”

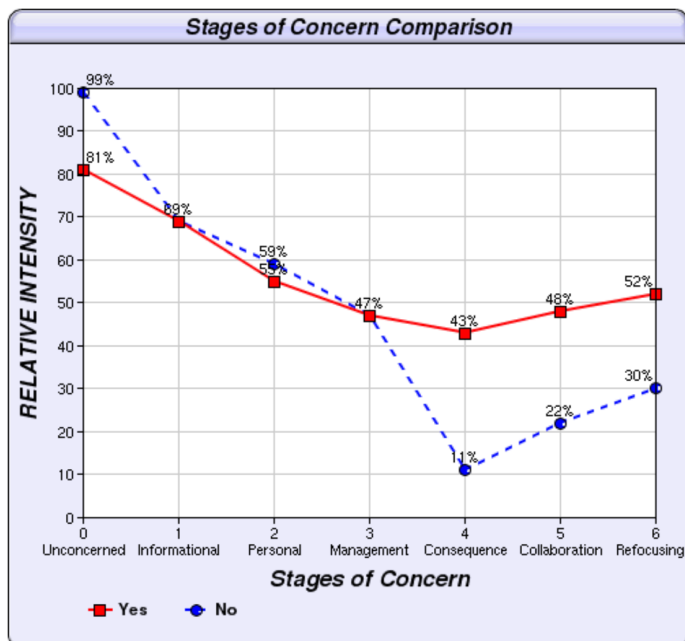


Figure 12. A line graph showing the comparison of SoCQ profiles between users and nonusers

When the user and nonuser profiles are presented concurrently, one can see that in both cases, lower stages of concerns receive higher scores. “Self” concerns, including “unconcerned,” “informational” and “personal” concerns received the highest scores. Users and nonusers were almost identical in their informational and personal concerns, but nonusers were more “unconcerned” with the innovation.

In both groups, “consequence” concerns were the lowest. According to the SoCQ, this concern shows that “the individual focuses on the innovation's impact on students in his or her immediate sphere of influence. Considerations include the relevance of the innovation for students; the evaluation of student outcomes, including performance and competencies; and the changes needed to improve student outcomes” (George et al., 2006, p. 8). My interpretation of this low score is that the majority of professors perceived screencasting to have higher value on their own personal productivity, but they were more cautious in asserting that it could affect

learning. After all, the participants were professors who had been trained to make conclusions based on verifiable evidence.

Even though the consequence score was low for both groups, the variance with other concerns is not as drastic among users. Figure 12 shows that there was greatest variance in the consequence concern between users and nonusers, indicating that there was more willingness to accept that the use of screencasting to give feedback may affect at least the process of student learning. For one particular user, Samuel, consequence was the highest concern as he claimed that the use of screencasting to have fundamentally changed his way of giving feedback to students. In the past, there had not been a feasible way to give prompt feedback to student acting and directing without showing the recordings to the entire class or to individual students, either of which involved logistical or pedagogical challenges. To show highly individualized feedback to the entire class would waste some students' time. But to meet one-to-one with students to go over their recordings would involve busywork in scheduling, and sometimes cancelling and/or rescheduling, which could be overwhelming for both the students and the professor without adding value to a student's learning experience. Screencasting dissolves the need for showing all student assignments and all the professor's feedback to all students in class, and it provides a method to give personalized feedback without the hassle of scheduling individual meetings.

Comparison of Feedback Choices

In trying to answer RQ1—How do faculty members make choices about feedback they give to students?—I asked all interviewees questions about what they taught, the modality of their teaching (online, face-to-face), the importance of feedback, the type of message in their feedback, challenges they faced, and alternative feedback methods they had considered. I used

the EAT framework to guide the analysis of their responses and I report the similarities and differences below.

Similarities. Both users and nonusers of screencasting for feedback considered feedback as highly important in their teaching. The terms they used included “important,” “very important,” “critical,” and “crucial,” “one of the things that I think distinguishes face-to-face teaching” (Sawyer), and “more important than the actual assignment” (Savannah).

Both users and nonusers made choices about feedback instead of using one method for all assignments and all classes. Each professor interviewed seemed to have their repositories of feedback methods, varying by medium (face-to-face, text, screencasting video), size (to one individual, to groups, or to the entire class), and level of detail.

The theme about time demand for feedback emerged for both users and nonusers. Increasingly, professors have been asked to teach more students and their personal sense of responsibility urges them to give multiple assignments to ensure student mastery of learning. These factors make it necessary for them to spend a great amount of time in giving feedback. Typing the same comments over and over again was seen as “tedious” and “increased my workload exponentially” (Naomi), which eventually leads to a sense of burnout, but it makes things easier for professors to increase the number of tools they can skillfully use.

Another finding from the study, whether or not participants use screencast, was that teacher feedback, often wrapped up in terms like “assignment comment,” actually consisted of a rich array of instructional messages. Professors used at least three broad categories of feedback messages: 1) cognitive messages that appealed to cognitive responses from students; 2) affective messages that appealed to emotional responses from students; and 3) macrofeedback that were

not tied to one assignment, but addressed student's overall performances throughout the course or even their degree program. Each of these categories includes a number of subcategories, as summarized in Table 5.

Table 5

Taxonomy of Feedback

Category	Type	Definition
Cognitive	Staging	Messages preparing students for assignments, including future assignment.
	Correcting	Messages that correct mistakes students make in their writing.
	Citing	Messages that guide students to use citation styles properly.
	Demonstrating	Messages that point and show details in a graphic, movement, step, or process.
	Connecting/clarifying	Messages that refer students back to assignment prompts, rubrics and course requirements.
	Rationalizing	Messages that explain to students why they get certain grades for the assignment.
	Suggesting	Messages that offer suggestions for change for the present as well as future work.
	Reflecting	Messages that reflect on student's strengths and weaknesses in an assignment.
	Directing	Messages that offer direction to students for future work or growth.
Affective	Affirming	Messages that affirm what students have done right.
	Cheerleading	Messages that offer general encouragement for work that is well done.
	Disciplining	Messages about student violation of rules, including academic cheating.
Macrofeedback	Behavior modification	Messages that offer general suggestions about behaviors that should be modified (such as consistent idiosyncrasies in acting that persist throughout courses).
	Course progress	Messages about where the students stand in the course and what could be done to make greater progress.
	Academic progress	Messages about where the students stand in the degree program and what could be done to make greater progress.

All of these categories of feedback messages come from coding, especially for the question about the type of message they gave when giving feedback, but participants who gave these messages may use these messages unconsciously. Most such categories come from users and nonusers alike, an indication that the message itself is not necessarily tied to the medium used during an activity of feedback giving in a majority of cases. The exceptions are described below in the differences section. The intent of the table above is to provide a rough taxonomy that could encourage future faculty to use such messages more consciously and consistently.

Differences. Users and nonusers differed in a number of significant ways. First, while both users and nonusers made choices about their feedback methods, users often had a larger set of tools to utilize. In addition, once they became familiar with a screencasting tool for one purpose of teaching (such as giving feedback), they could easily move laterally into another function (such as creating an announcement) using the same tool, thus maximizing the usefulness of a particular tool and the initial investment in learning the tool.

Though both users and nonusers used tools in their teaching, nonusers often made choices using tools they are familiar with through colleagues or conferences they go to, but users often sought out the best tools to address a particular need. For instance, Samuel actively searched for tools to give comments about students' acting. Simon sought tools with which he could provide feedback involving demonstrations of software. Savannah switched from one tool (Screencasting-O-Matic) to another (Screencastify) because she wanted something to be more closely linked to Google as her students had to be certified Google users.

Users and nonusers also differed in how they orchestrated the elements in the EAT framework. Most nonusers viewed screencasting as a substitute for text and some needed to be

convinced why such substitution was necessary or beneficial. Those who had learned to use screencasting to give feedback adapted their tool choice to the object and outcome of their feedback activity. For instance, when Sebastian used specifications grading, he found it necessary to use screencast videos to clarify his rules. Sometimes when the object of feedback activity changed, their tool choice changed as well. Both Sophia and Sebastian used screencasting for some assignments and some classes, but not for others. For instance, Sebastian adapted his feedback method to lower level classes with a large class size by using more standardized testing, while reserving the personalized screencast video feedback for smaller but more advanced classes. Such agility was acquired through prolonged use of varied tools.

In the previous section, I discussed that users and nonusers have mostly similar messages in their feedback. However, users gave examples that showed screencasting to have a great advantage in demonstrating graphics, movements, steps, and processes. It also seemed easier for users to use screencasting to communicate affective messages. When using videos to give feedback, usually professors addressed the students by name and show more informal tones, which could improve teacher-student relationships, especially when there were criticisms students would find hard to receive through text communicated in a matter-of-fact fashion.

Comparison of Concerns

RQ2 and RQ3 are both related to faculty concerns:

- What are the experiences of faculty members at a southeast private university who currently use screencasting to give feedback on student assignments?

- What are the student feedback experiences of faculty members at a southwest private university who currently do not choose screencasting to give feedback on student assignments?

The responses from participants on the SoCQ had partially answered these questions but responses in the interviews provided further confirmation. In order to probe deeper into their concerns, I asked users questions about their tool choice for both synchronous and asynchronous video feedback, courses in which they used screencasting, their rationales, their specific concerns, changes they may have made or considered in giving feedback, and some examples of their feedback. To nonusers I asked if they were aware of screencasting tools, what they knew about them, and whether they would consider using them.

Similarities. Both users and nonusers of screencasting for feedback were aware of the ability of using screencasting or simply videos to give feedback, which was quite impressive. Such awareness of the media feedback option is not shared among other users. In a presentation I gave in the 2019 Instructurecon, an annual user conference organized by Instructure (the developer of Canvas and Studio), I asked participants how many of them were familiar with the media comment feature. No one raised their hands. At Catsville, there seemed to be greater familiarity with video tools thanks to years of training effort by the Media Lab, the Educational Technology Department, and the Teaching and Learning Center. However, as the results of the SoCQ showed, the “unconcerned” score is still the highest, showing that video use in giving feedback might not be the most important thing in a professor’s schedule.

Both users and nonusers seemed to be reluctant to adopt a tool just because it sounded trendy. Catsville University uses a huge variety of technology tools. There is an app for almost

everything—Concur for travel expense documentation, Digital Measures for faculty activity recording and reporting, Taskstream for workflow management, Adobe for graphic design, Amazon Prime for purchasing materials, among others. “It’s just hard to find time to take advantage of all of them” (Natalie). As a matter of fact, it can become frustrating to have so many tools to deal with. From the interviews, I even sensed a degree of tool fatigue in the responses. For instance, one participant complained of the complexity of making purchases using an app that is tied to her school account, which cannot be merged with her personal account for easier access. Faculty members use tools only when they have to, and for those that do not have to use it, they want to be convinced of its usefulness as compared to the traditional ways of doing things.

Both users and nonusers were concerned about the complexity of the workflow in using screencasting to give feedback. There are a wide variety tools available (Explain Everything, Screencast-O-Matic, Jing, QuickTime, and Mojave); multiple storage options (Canvas, YouTube, Vimeo, Google Drive); and sharing options (via embedding, URL, uploading to a page, and email), which creates multiple paths to deliver video to students. These paths vary in complexity, which can be frustrating, especially when one takes the path with the most steps. Most of the interviewees disliked the “clunky” steps that screencasting feedback may involve. The Studio tool in Canvas makes it easier now to produce screen capture videos, but SpeedGrader, where professors give most of the feedback, does not include a screen capture option, which would greatly increase and enhance usage.

Other than the technical steps one has to take, there was also a shared concern between users and nonusers about the size and storage limit for video use in courses. Nonuser Noah

hesitated in using screencasting as the processing time for video was too long and he was concerned that he was allocated only a certain size of storage per course. User Samuel was concerned that Canvas would not allow him to upload individual videos larger than 500MB. A number of interviewees, user or nonuser alike, also expressed the concern with Internet speed when using videos. Stephen and Nathan both felt that sometimes their Wi-Fi, especially at home, was too slow for video production, as Catsville is located in a town with one predominant Internet provider, which does not always have the best offering due to the lack of competition.

Both users and nonusers experienced and felt “stretched” (Nathan) as the class sizes grew; there were also more tasks beyond teaching that they had to face, such as teaching assistants or coordinating with course facilitators. User Stephen coined the term “personal bandwidth” which vividly described the capacity a professor feels that he or she has, and it also demonstrates the dilemmas professors face between giving quality feedback and the quantity of time such feedback entails. The time demand motivated both users and nonusers to be open to methods that have proved to be efficient and effective.

Users of screencasting often described it as a way to save time, as I discussed in the literature review chapter. However, in the interview process, both users and nonusers felt ambivalent about the timesaving benefit. Users and nonusers alike said that they also type very fast. Even though it is possible to produce more content in speaking, producing videos also has the potential of wasting time, for instance, the time for editing, processing, uploading, and above all, the time that could be wasted if the videos fail to save. Even the users did not always use screencasting to give feedback for large classes for which standardized testing may seem to be a better option for assessment, rather than feedback-heavy assignments. All factors being equal,

speaking does produce more words than typing, but all factors are not equal. There were contextual factors such as Internet speed, recording background, and personal appearance that participants considered when choosing the modality of feedback. Rather than comparing text and screencast videos, professors also compared paper assignments to standardized tests, which could auto-grade.

Users and nonusers were equally frustrated with students not reading their feedback, and the current study did not show whether the use of videos prompted students to view the feedback more. However, a few users provided some student evaluation comments in which students showed great appreciation for the video feedback.

Differences. Even though nonusers and users were both concerned with the complexity of workflow, this concern was a major factor preventing some nonusers from adopting, while for users, the complexity was tolerable after they had weighed the advantages (Savannah). Almost all but one user (Sarah) continued to use screencasting to give feedback, and Sarah, too, wanted to try it more in the future when she would not have to teach an additional course beyond her regular workload. She did not give it up. She just wanted to pause individualized feedback due to a crazy schedule.

There were also differences in concerns among nonusers. For instance, Nick was concerned about the lack of scientific evidence proving the superiority of one modality of feedback over another. Nicole was concerned about the potential of cheating if too much feedback was given. Users also differed in their concerns: Samuel was mainly concerned with how screencasting videos impacted student learning. For him, giving quality feedback was a way to propel student change not in one or two assignments, but throughout their college career.

Sawyer was interested in training or coaching for the adjunct faculty members he led and co-taught. Sebastian's main concern was to get his feedback to work in sync with the pedagogy he had chosen for his course.

Some nonusers actively considered or even implemented screencasting for other purposes, for instance, for a "flipped classroom" (Naomi and Natalie), or for lecturing while they could not be present in class due to the weather, a conference, or illness (Noah and Nathan), while users apply screencasting for both class-wide broadcasts and individualized feedback.

Users of screencasting praised the advantages of the screencasting modality that nonusers had not been able to experience. For instance, Sophia claimed that "when I do written feedback, it's not nearly as specific as what I can give in screencasting feedback." A number of users, such as Sebastian, Stephen, and Sophia, emphasized that screencasting feedback is affectively richer as it comes with tone of voice and facial expressions. This was especially important for online courses where students did not get to see the professors (Sophia). Sebastian said that when he was giving feedback with videos, he was able to "give students more," including useful insights, directions, and encouragement, whereas with text he was more "succinct" and "matter-of-fact." Sawyer took such rich video interaction a step further by proposing that the feedback should be "two-way", which could be enabled by some synchronous video conferencing tool or screencasting videos from students:

I need feedback from students to know are they engaged, are they tracking with me, are they understanding? And I can't see their face. I can't see the body language or the behavior. And so I have to interpret their work, their submissions. And it may be like two, if there are like three or four assignments and they didn't do the last two, that's when I notice, oh, they're not engaged. But that was two days ago that they stopped being engaged. (Sawyer)

In conclusion, users and nonusers both felt stressed with the time demand for giving student feedback, but they did not always agree that screencast videos would be a time-saving alternative. Users tended to see screencast videos as offering better quality feedback, such as greater specificity and more affective content. Technical complexity was a concern that users and nonusers shared, even though it did not seem to bother users so much that they would stop using the method. Generally speaking, screencasting holds great potential not necessarily for the quantity of time-saving but for the quality of feedback.

Comparison of Training and Support

In order to answer RQ4—What type of training and support would best address faculty concerns in using screencasting to give feedback?—I asked participants what kind of training, support, and tools they would need in order to use screencasting to give feedback. In the section below, I compare the users and nonusers in terms of their learning method, their level of satisfaction with training and support, and their training and support needs.

Learning method. I asked both users and nonusers how they learn a new method in teaching. Answers for both groups were similar as the same resources are available to all of them. Professors learn new methods in the following ways:

- Attending sessions from the Teaching and Learning Center, Media Lab, or Educational Technology Center;
- Coaching from staff members of the units above, including the instructional designer and the director of the Media Lab;
- Structured faculty coaching programs;
- Internet resources, especially YouTube;

- Professional conferences; and
- Talk among colleagues in the hallways.

However, not all training or coaching resulted in active usage. Users usually just went ahead to experiment with screencasting to give feedback, and learned from trial and error, while nonusers need to take the step to try. The analysis of nonuser and user methods for learning also revealed the importance of informal learning, such as talk in the hallways. It is also quite interesting to note that users and nonusers alike became interested in learning new things from their professional guild or conferences. This was a finding I had not thought about at all before entering the research.

Satisfaction with training and support. Both users and nonusers showed satisfaction with the current training and support that Catsville University provided, especially offerings from the Teaching and Learning Center, which was seen as a hub where best practices were exchanged. Even though some may have been exposed to new methods through professional conferences or talks in the hallway, it was through the training and support offerings that professors often learned to use a new method with some confidence. All users were active participants in the training programming or individual coaching from the university's support units.

Need in training and support. In spite of the high satisfaction, support and training offerings could be optimized. For users and nonusers alike, continuous training was high in demand. There are limited uses of misuse for all the tools that are available. For instance, some users were comfortable with talking head videos but had never used screen capture videos. Some

nonusers did not know the most optimal tool to use when producing screencast videos as so many tools had been shared with them; they were at a loss how to make the appropriate choices.

Users and nonusers alike also would like to have more people to support them, including more instructional designers and helpdesk staff. The university keeps buying new tools, but not hiring enough people to support the use of such tools. As a matter of fact, the university has experienced substantial employee attrition that makes it sometimes difficult to get the support professors need. Instead of an app for everything, there should be a person for every question. The use of a tool is only as good as the support and training that go with it.

Summary

The study showed that as a whole, Catsville University provided great conditions for adopting screencasting as a feedback method. Of the 16 professors interviewed, nine have gone on to use the method, which is quite impressive. The majority of nonusers also expressed interest in starting to use it. As a matter of fact, one nonuser asked very specific questions about screencasting for feedback after the interview. The university's long exposure to video in instruction through work by the Media Lab, Educational Technology Department, and Teaching and Learning Center has resulted in innovative ways to teach. Nevertheless, there were still concerns, including the complexity in workflow and time commitment. Continuous training and support would address some of these concerns. For instance, professors should be made aware of the variety of tools to use for different scenarios, because one tool can be simpler for one context while other tools work better for other scenarios. Chapter 7 will share more details about the implications of these comparisons.

Chapter 7: Discussions, Conclusions, and Recommendations

The purpose of this study was to identify faculty concerns in using screencasting to give feedback. I conducted a case study at Catsville University, which offers licenses for the screencasting software Camtasia and training for faculty to use screencasting to give feedback. I administered an SoCQ, which showed the distribution of concerns in stages ranging from unconcerned, personal concerns, tasks concerns, to impact concerns. I interviewed participants using an interview guide, asking questions tied to four research questions. An analysis was presented in chapters 4, 5, and 6, showing results respectively for nonusers, users, and their comparisons. In this chapter, I discuss the results of the study, draw conclusions, give recommendations for faculty and faculty developers, and make recommendations for future research.

Discussion

Feedback is an essential part of teaching, which could benefit from the use of screencast videos. This study explored how faculty members made choices in using or not using the method, their intention to adopt, and training and support that would support their usage. Below are results I found from the analysis of the data.

There is generally a strong case for using screencasting to give feedback, as screencast videos include rich cognitive and affective messages to enhance learning. The study found that screencasting did have the ability to enhance understanding by providing more details, greater complexity, and nuance in feedback as several other studies have claimed (Arif et al., 2017; Bissell, 2017; Hattie, 2015; Henderson & Phillips, 2015; Kay & Edwards; Planar-Erta et al., 2016). The study also confirmed that screencasting-based feedback can be more personal, richer

in tone, and conducive to building faculty-student rapport, as several authors pointed out (Bissell, 2017; Borup et al., 2015; Heath & Heath, 2017; Henderson & Phillips, 2015; Sprague, 2016; Turner & West, 2013). As I discussed in the literature review, even those researchers who had not found differences in student performance suggested that there would be qualitative differences in the messages included in feedback.

As Krantz (2018) and Simon (2017) have pointed out, small private universities face pressure to offer more to students with fewer resources, including faculty members. This study confirmed that most faculty members felt stretched and screencasting offered a viable alternative to give text-only feedback as the screencasting modality could break the monotony and tedium of typing the same comments. For experienced users, there was also the possibility of saving time in screencasting while offering more feedback to students.

This study showed that savings in time can be huge for screencasting to give feedback as the literature has indicated (Cann, 2014; Henderson & Phillips, 2015; Sprague, 2016; Woodard, 2016; van Haren, 2017; Cunningham, 2019) because in one minute, a professor can produce more words and thereby give more to students. When transcribing some media comments provided to me by the users, I found that one minute of video translated to around 175 words in text on average. Within five minutes, a professor could produce around 800 words, which can take much more time to type. This result even surpassed my expectations based on the study by Phillips (2015), which stated that in speaking, one produces approximately 625 words in five minutes.

However, there is also the potential to waste time using screencasting to give feedback as it can cost time to edit and upload the videos, and to redo videos if a previous recording fails to

save. It is more possible to save time after prolonged usage, when professors have become familiar with the process to minimize the time around screencast production, avoid technical issues, and become comfortable producing quick videos for individual use.

When professors make choices about feedback, they do not necessarily compare videos with text, and they could compare one type of assessment versus another, for instance, quizzes versus written assignment, depending on the size of the class and the number of assignments they can realistically handle. This finding enriches the understanding about decision factors of giving feedback using screencasting videos as existing studies often focus on the effectiveness of screencasting as compared to text (Ali, 2016; Alvira, 2016; Dunn, 2015) or student perceptions of screencasting as a feedback method (Bissell, 2017; Borup et al., 2015; Henderson & Phillips, 2015; McCarthy, 2015) without giving much attention to faculty choices in feedback modality.

Users in the study mostly enjoyed using this method, and students appreciated faculty members who had given them feedback using screencast videos. For a few users, screencasting provided an essential method for them to interact with feedback that they would not have been able to accomplish this through other methods, as screencasting made their demonstrations clear, direct, and specific. Such feedback was also logistically convenient to produce: Professors can create quick screencast videos anywhere and anytime as long as they have a computer and WiFi, for there are multiple free or cheap tools to produce decent screencast videos.

The study also showed that using screencasting to give feedback did not have to depend on strong technical expertise in using software. Most users in this study did not edit their videos, as they felt comfortable showing quickly produced videos to make a comment that would be consumed for a short time by one student. Such videos do not have to be polished and heavily

edited to be used over a long period of time. Users were often content with current technologies, such as Screencast-O-Matic, QuickTime, and Mojave, which do not have sophisticated editing capabilities. Nonusers were not necessarily intimidated by technology either, but they just did not know very well how the technology could be used for feedback. The only technical barriers were the complexity of workflow, size limit of videos, and Internet speed.

Participants actually gave a variety of messages in their feedback that included cognitive, affective, and macro messages. Users found that it was easier to use screencast videos to communicate affective messages to offer encouragement or cheerleading. Several users observed that there is less harshness in screencast video feedback as it can be more conversational and informal. One user observed that he could use the screencast video to show that criticism is targeted to the work, not the person. This is consistent with findings from the literature about teacher-student rapport (Bissell, 2017; Borup et al., 2015; Heath & Heath, 2017; Henderson & Phillips, 2015; Sprague, 2016; Turner & West, 2013). Using screencasting can enrich student-teacher interactions (Baldwin et al., 2018). One participant in the study, Natasha, a nonuser and chair of a department, saw that possibilities of revolutionizing online education if professors used screencasting to give feedback, as many professors hesitate to teach online due to the lack of relationship and community building. This study enriched the research literature by adding a more detailed taxonomy of feedback, including these cognitive and affective aspects, and the taxonomy could be a concrete guide for professors in giving effective feedback.

There are certain attributes of screencasting in the research literature that this study did not uncover, for instance, improved accessibility (Bissell, 2017; Jones et al., 2012). It is also unclear from this study alone whether the use of screencasting can increase student autonomy

(Cranny, 2016; Bissell, 2017), except that the example of Simon using screencasting to demonstrate the design of a table could lead us to believe that students could easily pause the video to make corrections. Simon cited that students watched him and made changes to their own work.

Researchers in the literature that I reviewed promoted the concept of feed forward (Brereton & Dunne, 2016; Cranny, 2016; Henderson & Phillips, 2015; Jones et al., 2012; Planar-
Erta et al., 2016), but judging from the results of this study alone, feed forward does not come from the use of screencasting per se. Users mentioned a variety of ways to use videos to urge students to improve their future work by giving messages including avoiding bad habits in performance and becoming acquainted with rules that govern grading. However, nonuser Nick also distinguished between several types of feedback using text alone, including feedback that prompted future improvement. He was capable of prompting students to make changes themselves using just text. The study also did not reveal whether students feel distracted with the multiple modalities of feedback in using videos (Ozdemir et al., 2016).

Conclusions

This study was meant to answer the following research questions:

- RQ1. How do faculty members make choices about feedback they give to students?
- RQ2. What are the experiences of faculty members at a southeast private university who currently use screencasting to give feedback on student assignments?
- RQ3. What are the student feedback experiences of faculty members at a southwest private university who currently do not choose screencasting to give feedback on student assignments?

- RQ4. What type of training and support would best address faculty concerns in using screencasting to give feedback?

My conclusions below are based on a single case study with both users and nonusers of screencasting for feedback.

First, to answer RQ1, I have found that giving feedback is an adaptive process. There is not a one-size-fits-all solution to the choice of modality, as McCarthy has also argued (McCarthy, 2015). I tried to put feedback under the microscope to analyze what faculty feedback was really like, what the components were and how they worked together. I found that professors made choices considering the subject matter at hand, the tool they could use, their community, rules, and division of labor. For instance, when it involves co-teachers and teaching assistants, the choice of modality takes into consideration whether these colleagues are familiar with the the new modality as well. The EAT proved to be illuminating in understanding professors' choice-making processes. I found that the use of the EAT framework was able to break the substitution mindset, which would try to paint a picture of screencasting being superior to text. Rather, the choice of feedback modality should be situational, based on the context at hand. Even professors comfortable with using screencasting to give feedback did not always use this method; they may have varied assessment types rather than the feedback modality. For instance, when a professor is teaching a class of two to three hundred students, feedback will often come in the form of test results. This kind of teacher adaptability should contribute to the understanding of how professors make choices about technologies in their teaching.

To answer questions Q2 and Q3, about user and nonuser concerns, respectively, I have found that the most participants were mostly concerned with the lower concerns at this point,

especially personal concerns regarding time demand, learning curve, and process complexity. There were far fewer concerns with management processes as the modality of giving feedback was almost entirely within a faculty member's autonomy with little management oversight. However, the interview process uncovered the diversity among users in their application of screencasting for feedback. Several professors affirmed the impact of screencasting for student learning, which is very encouraging for other potential users. It should also be noted that users had higher concerns in task and impact-related concerns in the SoCQ framework, mostly because they had had more information and experience to know what impact screencasting had upon student learning, collaboration, and the repurposing of the screencasting tool.

While studying concerns, I also found great interest among nonusers to adopt screencasting as a feedback method, which is good news for institutions of higher learning. For residential campuses, screencasting offers a viable alternative to traditional ways to give feedback. The study showed that there was a subtle shift in the ways students sought help. While there is continued issue with the lack of office space for faculty (Borup et al., 2015; Planar-Erta et al., 2016), attending a professor's office hours seems to be less popular for students to obtain help from a professor. Students increasingly use digital methods to interact with professors, including email. However, email is sometimes insufficient, making screencasting to give feedback a fairly compelling choice. For universities pondering the expansion of online programs, it should be noted that the lack of effective faculty-student interaction could be a bottleneck for online-program growth. It could even hurt the justification of a program or university, as I discussed in Chapter 2 about the case of Western Governors University (OIG, 2017). Using screencasting to give feedback offers a multimodal, media-rich way for faculty to

interact with students that could help the justification and growth of online programs.

Understanding faculty concerns would help institutions improve communication as well as training and support to improve adoption.

I should also emphasize that in this study, I discovered that faculty adoption behaviors deviate from the innovators, early adopters, early majority, late majority, and laggards distribution described by Rogers (2003). Some nonusers were actually very early adopters of screencasting. They simply did not use screencasting to give feedback. Similarly, some users of screencasting for feedback did not know of functions or features of certain screencasting applications that some nonusers knew well. It is not helpful to label some people as innovators and others as laggards regarding the use of a certain innovation. In planning change linked to innovations, it may be helpful to supplement Rogers' popular theory of diffusion with the concerns-based adoption model (CBAM), which includes theoretical frameworks about the configuration of innovations and levels of use (American Institutes for Research, 2015) to put diffusion in broader perspectives. Rogers's theory is popular, but it can also limit subtle differences in adoption that could be better explained with alternative theories, including: the CBAM; Mandinach's survival, mastery, impact, and innovation theory; Puentedura's (2012) SAMR model of technology; Siegel et al.'s (2017) MAM; and Clark's (1998) CANE model.

To answer RQ4, I asked about training and support needs among participants. Participants were generally satisfied with the current training offerings that were offered and support they could get. They were especially content with the tools they could use for teaching. Professors would probably be happier if there are fewer tools and more people to support the use of such tools. There is a sense of tool fatigue when new tools are often given to them without

proper support. For Catsville University, however, there seem to be many professors who already use screencasting to give feedback. However, training could still be better optimized to increase small but frequent offerings, such as instructional videos and blog posts, while professors still appreciate regular training offerings and individualized coaching.

This study also has practical implications for faculty and faculty developers. For faculty, screencasting technology opens new doors for innovations in teaching. While it is desirable to talk directly to students face-to-face to increase teacher-student rapport, face-to-face meetings can be time-consuming and students do not seem to come to office hours as often as they used to. Screencasting offers a direct, specific, and personalized option to interact with students to help them learn.

It should also be important to remember that the nonuse or use of screencasting to give feedback says nothing about the ability of professors to give feedback and to teach in general. Those who participated in the study are highly respected among colleagues and by students. The modality of their feedback has no correlation to the quality of their feedback in terms of content. Nonusers of screencasting were also capable of providing effective feedback that not only affects current student work, but their future work as well as personal growth throughout college. However, as the feedback can be a situational and adaptive process, even nonusers can benefit from having a larger toolkit to choose from. There might be situations in a semester when it is easier to use screencasting to give feedback to provide greater directness, specificity, and personalization.

When analyzing the data about training and support, I would conclude that the role of faculty development should not be centered on substituting one modality of feedback (such as

text) to another modality (such as screencasting). Rather, faculty developers ought to enlarge the faculty range of tools within which they can make choices. The high score in *unconcerned* means that faculty developers should continue to raise awareness of screencasting for feedback by offering training and coaching, sharing examples, and promoting peer-to-peer coaching among faculty as the study has revealed that hallway talks and professional conferences seem to matter a lot to professors as a way of learning new methods in teaching.

While continuing to optimize training and coaching, support units of the university should take note that faculty members are not always available to come to training sessions due to their demanding schedules. Some participants in the study expressed appreciation of short videos that the Teaching and Learning Center sometimes produces and shares. Other bite-sized information, such as a blog post about a new tool or method, is also popular. One professor (Nathan) said that he read posts from the Teaching and Learning Center in the university's intranet portal, which aggregates feeds from the center's blog. The center's staff did not know that professors are actually actively reading these entries, so they have not been diligent in updating the blog. Feedback from Nathan renewed interest among staff at the center to update the blog once the information was passed along to the center's director.

Recommendations for Future Research

This is a small case study of a single university with 21 participants responding to the SoCQ and 16 of those 21 participating in interviews. In spite of the useful insights it generated, readers should be cautioned that the case is unique for a small private university with rich technological resources and a strong faculty-training program. The conclusions may not be transferable to other settings, though it could greatly benefit similar institutions. To enrich the

research dialogue, future researchers could probably replicate this study to other settings, such as large public universities.

This study is also limited to a residential university primarily using face-to-face teaching as the delivery method, even though a few participants do teach online courses once in a while. Professors can choose between office hours, class time, or technology-enabled approaches to give feedback. Future researchers could focus specifically on online courses where feedback should present different challenges and opportunities.

In addition, this is a single embedded case study in which I made comparisons primarily between users and nonusers. A between-school comparison was conducted, but not in great detail. Future researchers could investigate other school environments to inquire whether adoption and concern vary with organizational cultures.

Summary

I have conducted a case study at Catsville University inquiring about faculty concerns about using screencasting to give feedback. During this study, I conducted an SoCQ, which showed the pattern of concerns among faculty, as well as patterns between subgroups. Following this questionnaire, I conducted 16 faculty interviews, which generated data to triangulate findings from the questionnaire. I also collected examples of media feedback from users to check how they actually gave feedback in screencast videos.

The study showed that screencasting holds tremendous potential for giving quality feedback, but this method should be added as one of the many methods professors use so that they can have the flexibility to choose among different modalities as the situation would require. The teaching needs should drive the choice of media instead of the other way around. When

professors improve their skills in using multiple technological tools, they eventually could be liberated in time and location. Students could receive multimodal feedback with which they know exactly how to make improvement to their work. When professors see that they can use screencast videos to interact with students, they will also be more likely to offer courses in additional formats, such as hybrid or purely online courses. This could increase the flexibility of institutions to deliver a more diverse portfolio of educational offerings in a fast-changing and technologically ubiquitous world.

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Appendix A: Teacher Contact Email

Dear Dr/Professor _____:

I hope your semester is ending well for you.

I am researching factors influencing faculty decisions in giving feedback, especially regarding the use of screencasting. I am reaching out to you because you have participated in training or coaching session about the use of screencasting, or you have a license for Camtasia, a screencasting tool. You do not have to be an active user of screencasting to participate in the study, as I intend to find out about your decisions in choosing the modalities of feedback whether or not you use screencasting. Your participation is completely voluntary. I will greatly appreciate your participation.

I would greatly appreciate it if you could let me know of your willingness to participate. If you agree to participate, you will be asked to complete a questionnaire that will take around 5-10 minutes to complete, and based on your feedback to the questionnaire, I might contact you later about completing an interview of around 30 minutes. All data collected from you will be treated with anonymity and confidentiality. Your words will only appear in aggregate form in the dissertation and other publications.

If you have any question or would wish to speak to someone about this study, you can contact:

[Names and contacted information deleted here to protect privacy.]

If you can participate, please fill out this consent form. If you have trouble opening it, you can also copy and paste the following URL in your web browser:

[Link to form]

Thank you very much!
Sincerely,

Appendix B: Student Contact Email

Dear Mr/Ms [Student name]

This is [name of researcher]. I am recently interviewing professors for my doctoral study on how they give feedback to students. One of the professors I interviewed is Professor [name of professor] who gives feedback using screencast. She showed me one of the assignments (assignment name) from (course number and title) last summer. I want to analyze her strategies in giving feedback to students. I wonder if it is possible to use yours as an example. I will not identify you in my analysis or write-up. Let me know if that's Okay with you? If yes, could you fill out this form for consent?

[Link to form]

Thank you so much!

Sincerely,
[Name of researcher]

Appendix C: IRB Approval

ABILENE CHRISTIAN UNIVERSITY*Educating Students for Christian Service and Leadership Throughout the World*

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885



May 8, 2019

Bailin Fang

Adams Center for Teaching and Learning

Dear Berlin,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "Factors Influencing Faculty Use of Screencasting to Give Feedback",

(IRB# 19-038) is exempt from review under Federal Policy for the Protection of Human Subjects.

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

Appendix D: Permission to Use Stages of Concern Questionnaire



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 American Institutes for Research
Date: April 29, 2019

By:

22. I would like to modify our use of screencast videos for feedback based on the experiences of our students.																			
23. I spend little time thinking about screencast videos for feedback.																			
24. I would like to excite my students about their part in this approach.																			
25. I am concerned about time spent working with nonacademic problems related to screencast videos for feedback.																			
26. I would like to know what the use of screencast videos for feedback will require in the immediate future.																			
27. I would like to coordinate my efforts with others to maximize the effects of screencast videos for feedback.																			
28. I would like to have more information on time and energy commitments required by screencast videos for feedback.																			
29. I would like to know what other faculty are doing in this area.																			
30. Currently, other priorities prevent me from focusing my time on screencast videos for feedback.																			
31. I would like to determine how to supplement, enhance, or replace screencast videos for feedback.																			
32. I would like to use feedback from students to change the program.																			
33. I would like to know how my role will change when I am using screencast videos for feedback.																			
34. Coordination of tasks and people (in relation to screencast videos for feedback) is taking too much of my time.																			
35. I would like to know how screencast videos for feedback is better than what we have now.																			

Schools

- Arts, Humanities and Social Sciences;
- Science, Technology, Engineering and Mathematics;
- Business Administration; Education and Human Services;
- Theology;
- Others

If you selected “other,” please specify:

Do you currently use screencasting to give feedback to students?

- Yes
- No

Can I interview you for further information?

- Yes
- No

Comments (optional)

Please type your name (first name, last name):

Thank you so much for completing this questionnaire.

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Appendix F: Transcription Analysis Codebook

Codes	Descriptions	Files	References
1. Process	What does the activity of feedback-giving involve?	16	135
Community	What people or groups of people are involved in the activity?	6	7
Division of labor	How work is divided?	6	6
Object	The “thing” or object that people work on in an activity.	13	21
Outcome	Consequence or result of an activity.	2	3
Rules	Rules that govern the activity.	5	11
Subject	The person working on the activity.	4	5
Tools	Technological tools used to mediate the activity.	14	64
2 Concerns	Heightened awareness of a particular factor related to the use of screencasting to give feedback.	15	119
Nonuser Concerns with existing method	Nonusers’ concerns with existing method of giving feedback, not using screencasting.	9	25
User concerns	Users’ concerns with using screencasting to give feedback.	3	5
Unconcerned	The individual is not concerned with the innovation one way or the other.	1	1
Informational	The individual lacks general knowledge about the innovation.	5	6
Personal	The individual is concerned about personal demands, commitment or impact in adopting the innovation.	11	41
Consequence	The individual is concerned with impact on people within his or her sphere of influence.	9	18
Management	The individual is concerned with the organizational aspects of adopting the innovation, such as impact on organizational structure or internal processes.	4	6
Collaboration	The individual is concerned with working with others in using the innovation.	6	9
Refocusing	The individual is concerned with changing the innovation altogether, or substituting it with another innovation.	4	5

3. Adoption	Are participants interested in adopting the screencasting method to give feedback?	15	112
Advantage	Perceived advantages of screencasting for feedback.	11	28
Decision factors	Reason for users to take interest or decide to use screencasting for feedback.	12	51
Interest	Interest in adopting screencasting to give feedback.	7	14
Resistance	Reasons to not use screencasting to give feedback.	5	18
4. Training and Support	What kind of training and support do professors need?	14	96
How people learn	How people learn new tools or methods in teaching.	14	47
Need	What do professors need in terms educational technology regarding the use of screencasting to give feedback.	8	14
Satisfaction	Expressed satisfaction among faculty for training and support.	4	6
Support	Kind of support do professors need.	7	9
Training	Kind of training do professors need.	11	17
5. Feedback	Scrutiny of feedback itself.	16	134
Feed Forward	Using feedback to help students do better work in their future assignments.	5	10
Significance	How important is feedback in teaching?	8	11
Strategies	What are the strategies among faculty to give feedback.	5	18
Student perception	How students view teacher feedback.	7	12
Type	Types of feedback professors give.	14	83