Diffusion of Innovation:

Investigations of Technology Advances on a University Campus

by

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A dissertation submitted in partial fulfillment of the
requirements for the degree of

Doctor of Education
in
Educational Leadership: Postsecondary Education

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Portland State University
2021

Abstract

This multi paper format dissertation contains three separate but related papers. The three papers focus on the Diffusion of Innovation (Moore, 2014) through investigations of technological advances on a university campus. Each of the three papers highlights the work of faculty and staff who received internal university grant funding aimed at increasing innovation in technology use. The first paper covers a program built to address academic integrity issues through the regular and highly structured use of small group video conferencing as a requirement for all courses. The second paper recounts the process of creating an ePortfolio culture on campus through platform selection and implementation, and includes the pedagogical challenges to disseminating ePortfolio practice, campus wide initiatives to support innovative practice, platform procurement processes, implementation strategies, and lessons learned along the way. The final paper in this series is a point-in-time, qualitative research study to describe first-year students' experiences across three cohorts who participated in a high impact practices by completing a physical on-campus 'Campus Equity Walkthrough Evaluation' of Portland State University over a three period of time.

Acknowledgements

I offer my deepest thanks to the co-authors of my three papers, Erica Wagner, Domanic Thomas, Jeanne Enders, Oscar Fernandez, Gail Ring, Andrew Lawrence and Candyce Reynolds. My esteemed committee Pat Burk, Matthew Carlson, Andy Job and Candyce Reynolds have my gratitude for their support and thoughtfulness around my dissertation itself, but also its reflective ePortfolio format. I would like to recognize those in my life who have encouraged me to access and participate in education, notably Carolyn Lanes,, Ryan Bley, Kevin Brake, and Eric Sellers. I would also like to honor those who sustained me through my learning journey by being caring and enthusiastic educators, Cory Pressman, Hunter Shobe, Heather Burns and Toby Hemenway. Thank you to my dearest Denissia Withers and my fellow UNST peer mentors who walked alongside my journey while on their own, together our journeys enriched one another immeasurably. I offer my thanks to those colleagues who are fearlessly reshaping education for inspiring me every day, Jeanne Enders, Candyce Reynolds, Toeutu Faaleava, Sonja Taylor, Gail Ring, and so many more. All my love and gratitude to my siblings, Shane, Heather, Megan, Azure, Robyn and Zoe, you are the limbs on my body. To my lady tribe, there is no way this day would have ever occurred without you, Jolina Kwong, Jessie Ovendale, Yvonne Casey, Constance Valandra and Cory Chambers. Thank you to my husband and to my son Levi - you are the beating heart in this chest of mine, my hope for you is that education can help you to achieve your dreams and goals.

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Introduction: Higher Education and Innovative Practice

Higher education is filled with meetings, summits, and professional organizations dedicated to "responding" to rapid technological, social, and educational changes. In search of processes that can continue to be adaptable and effective for stakeholders, these gatherings often focus on strategies for how our institutions can best respond to change in order to meet the current needs of our faculty, scholars, employers and communities. To facilitate advances in technology use in higher education, leaders have sought to create opportunities for faculty, staff and students to experiment and design new learning environments (e.g. Gaimaro et al., 2019; Hart et al., 2016; Henard, et al., 2000; Knight 2011). Such research, programs, initiatives and directives are meant to fuel the diffusion of innovative practices and technology use on higher education campuses. It is now common to see the introduction of technologies and innovative practices unfold in live teaching and learning environments by utilizing the technology users to refine both product and practice through real time use and feedback. Rogers (1995) theory of the diffusion of innovation looks at innovation through the lens of active uptake and institutionalization of those practices at the organizational level by a majority of its stakeholders and practitioners. Rogers (1998) indicates that "diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 5).

At Portland State University (PSU), the reThink Provost initiative is one example of an opportunity to gather innovative ideas from its stakeholders (i.e. Rogers 'social system')

and implement those ideas in a supported and funded environment. The reThink PSU project was a campus-wide effort to deliver a liberal education that serves more students with better outcomes, while containing costs through curricular innovation, community engagement, and effective use of technology (ReThink PSU, 2015.). This multi-article dissertation focuses on lessons learned in the process of the reThink grant project. Three articles will be provided as case studies of two distinct reThink projects: 1) video conferencing, and 2) implementation of an eportfolio program.

An Innovative Higher Education Climate: The PSU (Rethink) Project

The following information is excerpted from an archived webpage in regard to the scope and descriptions of the reThink Provost challenge at PSU ("About Provost's Challenge," 2015).

> In the US, public institutions for higher education face an increasing amount of obstacles, including declining funding, changing models of educational delivery, shifting student population demographics and more. Realizing that the university is not immune to these changes, Portland State University created the Provost's Challenge in 2013 as a proactive response to these concerns. The challenge was the first project in the university's reTHINK PSU initiative - which aimed to deliver an education that serves more students with better outcomes while containing costs through curricular innovation, community engagement, and effective use of technology.

With the $3 million in one-time funding, the Provost's Challenge was supported by 24 faculty and staff initiated projects in order to make them sustainable and create lasting change at PSU. The premise was that these projects would help PSU use technology in innovative ways to deliver a high-quality, affordable education and improve student success.

The purpose of the Provost's Challenge at the onset was to solicit ideas and allow the institution to imagine and implement changes that provide leadership in response to issues in higher education. Over one third of the faculty and staff engaged in one or more of the over 160 concepts submitted. This "crowdsourcing" effort created many important campus conversations. The funded projects are designed to create "hot spots" where the work would continue to be public and create additional opportunities for exploration and rich conversation. The Provost's Challenge is part of a larger initiative to reTHINK PSU. It was made possible by one-time funds collected from online fees. These fees were restricted funds; they could only be used for efforts to enhance the curriculum via technology.

The challenges were framed across two project types, the first was a *Reframing and Acceleration Challenge* called for projects that reflected a diverse portfolio of ways in which Portland State University faculty and staff envisioned using technology to empower learners; while at the same time enhancing the important role that faculty and staff play in the delivery and support of our mission. The second call for the *Inspiration Challenge* was modeled on the success of the *Last Mile* initiative at PSU, which had shown that it was possible to have a large

impact with very modest costs when we are inspired to collaborate around an opportunity or issue that affects our students. The Inspiration Challenge projects offered a variety of solutions that use technology to lead to improved student success and graduation.

The three articles in this dissertation are case studies of two distinct reThink projects:

Article 1. Wagner, E., Enders, J., Pirie, M., & Thomas, D. (2016). Supporting academic integrity in a fully-online degree completion program through the use of synchronous video conferences. *Journal of Information Systems Education*, *27*(3), 159.

A case study of: Video conferencing fully online - reThink Proposal # 158 (Acceleration Challenge) *Expanding the PSU Sphere of Influence: A Vision for Increased Access Through Highly Effective Online Programming in Business Education* Proposer: Jeanne Enders, Associate Dean for Undergraduate Programs SBA, Formerly the School of Business Administration, currently the School of Business

Article 2. Reynolds, C., & Pirie, M. S. (2016). Creating an eportfolio culture on campus through platform selection and implementation. *Peer Review*, *18*(3), 21.

A case study of: Implementation of an eportfolio - reThink Proposal # 169 (Reframing Challenge) *Making Learning Visible: An Eportfolio Initiative to*

Transform Learning and Assessment at Portland State University

Proposer: Yves Labissiere, Interim Director, University Studies Program

Article 3 (accepted for publication in 2023). Fernandez, O., Pirie, M., Ring, G., Lawrence, A. *Leveraging a Campus Equity Walkthrough Evaluation (CEWE) ePortfolio to Assess First-Year Students' Equity-Minded Learning and Campus Belonging*. (volume) Creating Global Citizens through High Impact Practices in Education, (book series) Innovations in Higher Education Teaching and Learning (IHETL) by Emerald Group Publishing

Implementation - reThink Proposal # 169 (Reframing Challenge)

Scholarship demonstrates that ePortfolios enable students to collect work over time and reflect upon personal, academic, and career growth. The purpose of this point-in-time, qualitative research study is to describe first-year students' experiences completing an on-campus physical walkthrough utilizing a Campus Equity Walkthrough Evaluation (CEWE) learning ePortfolio.

To understand the broader context for this multi paper dissertation project, I will now provide background information on: Harasim's (2012) historical perspectives on technology in education; both Rogers' (1995) and Moore's (2014) diffusion of innovation models; and Weick and Quinn's continuous change model (1999).

Technology And Education

Technology and education have a set of historical relationships that have often been bound together by the predominant learning theories utilized in educational settings. In *Learning Theory and Online Technologies*, author Harasim (2012), explores this history of education and technology. Harasim describes the relationship between technology and education, beginning at its roots with behaviorism in the industrial age, into experimental cognitive practices where students were viewed as "processors", and then on to more constructivist approaches where the learner is more actively involved in a joint enterprise with both teachers and peers in constructing knowledge. During the 1980's and 90's, Harasim describes education as "experiencing a revolution" in technology software that was designed to "support the variety of ways learners construct their own understanding" (p.73).

When talking about the rate of proliferation of innovative technologies over the last decade, one can often see a clear division between the thought processes that drives constituents to participate. Although there are variances in why higher education stakeholders have wrestled with balancing instructional techniques and learning theories with new innovative technologies and practices, it remains consistent that selecting and applying technologies that may result in advancing innovative practices that support student development and curriculum revisions have proven challenging. Harasim (2012) echoes this challenge with a call for new theory by stating,

> "The 21st century Knowledge Age signals the need for a theory of learning that emphasizes knowledge work, knowledge creation, and the knowledge community by emphasizing creative, conceptual work with no right or wrong answers where

there may be many right answers, requiring knowledge workers to collaborate to identify and create options. The role of the instructor becomes one of a moderator, mediating learners and the knowledge community" (pp.83-4).

We now exist in a knowledge age that is complicated by social and health concerns where we are essentially required to have the ability to communicate and interact meaningfully with one another outside of our previously physical learning environments. Aside from the multiple reasons why we undertake innovative practices, *how* we are going about doing so is another matter altogether, and as a collective group of higher education practitioners, "how" we participate with technology and innovative processes as a set of members that form an organizations' 'social system' are even less well understood (Bringle et al., 2009; Hasanefendic et al., 2017; Hoidn et al., 2014). In order to understand some of the variables that exist within the majority of social systems in higher education stakeholder groups, we can look to the theory of the diffusion of innovation for some insights (Rogers, 1995; Moore, 2014).

Theory Of The Diffusion Of Innovation

"Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1995, p. 5). Wood (2017) shares with us that "the purpose behind the theory is to understand the reasons, methods and rates of how new innovations spread into society". The diffusion of innovation theory posits it is the communication of new ideas that is at the root of social and innovative change. This theory draws upon the technology adoption life cycle across the fields of research such as education, rural sociology and medical sociology. The

practical purpose behind Rogers' theory is to support a more comprehensive understanding of the adoption rates of innovative practices.

It is suggested by Rogers that, regardless of type, when innovation or innovative practices are introduced into an organization, those organizational community members can be allocated into five "typologies" (figure 1). Wood (2017) further synthesizes these as "adopter categories . . . split into five psychographic profiles: Innovators (2.5%), Early Adopters (13.5%), Early Majority (34%), Late Majority (34%) and Laggards (16%)". Each of the five typologies has different motivations around innovative practices.

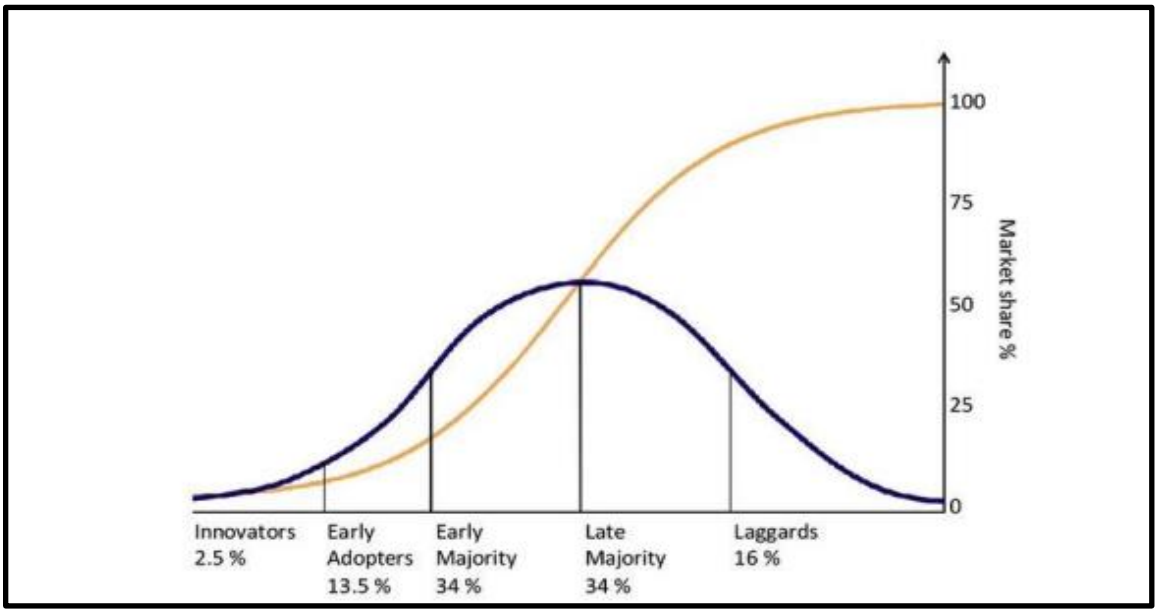

Figure 1. Rogers' theory of the Diffusion of Innovation and its five psychographic profiles (1995)

There are multiple adaptations to Rogers' (1995) original model and his diffusion of innovations theory. A more recent adaptation is Moore's (2014) 'crossing the chasm' theory, which made a concerted effort to address concerns that perhaps Rogers' initial adoption typologies lacked a cohesive trajectory and intersecting lens of social behaviors that can also impact progressive adoption rates (Figure 2).

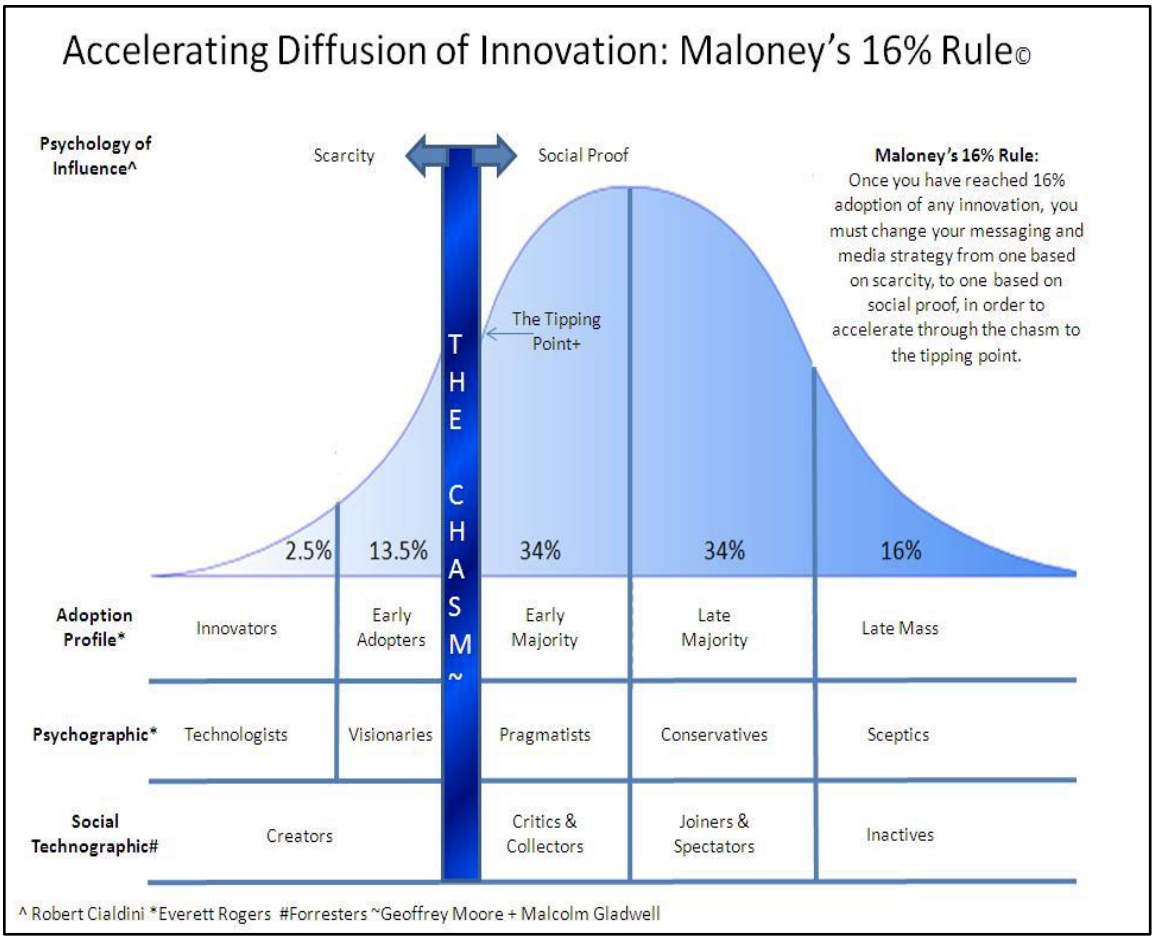

Figure 2. Moore's (2014) Accelerating Diffusion of Innovation: Maloney's 16% rule

Moore (2014) worked at surfacing the largest gap between "early adopter" and "early majority" typologies, appropriately named 'the chasm', as it is at this "chasm" point in the diffusion of innovation where many innovative undertakings lose traction. In simple terms, a failure to move innovative practices across the chasm causes unsuccessful diffusion; in this case failure is distinguished by an innovation that fails to exceed 16% of the social community intended to adopt the practices. Maloney (2011) makes the claim that the difficult transition from a model of 'scarcity' that attracts early adopters and innovators to participate in the innovative practice in the first place, then fails to generate

enough ‘social proof’ to move the practice beyond those two adopter groups forward into the early majority of adopters- creating a failure of innovative diffusion.

In brief, Moore (2014) describes his version of Rogers’ typologies as: the ‘Technology Enthusiasts’ (Innovators) who acquire new technology and pursue innovative practices aggressively; the ‘Visionaries’ (Early Adopters) who are seeking innovative practices but may have caveats around there use and application; the ‘Pragmatists’ (Early Majority) who often make up the largest section of an organization forward momentum, but prefer to access well- vetted, qualified, and centrally supported innovative practices; the ‘Conservatives’ (Late Majority) who tend to have high caution around innovative practices but are essential to incorporate for institutionalizing and cementing innovative practice as a new mainstay of the organization; and the ‘Sceptics’ (Laggards) who rarely participate with innovative practices until they have become a mainstay of the overall practices of the organization, and the sceptics adoption is often based on required participation.

Maloney (2011) goes on to say that the adoption of innovative practices can be made attractive to innovators and early adopters by messaging around the ‘scarcity’ of opportunities to try out innovative process and products, and these innovators and early adopters also bear the bulk of the responsibility for generating the ‘social proof’ of the innovation. In regard to both of the reThink PSU case studies in article 1, 2 and the proposed topic of article 3, there was an intentional focus on the model of the diffusion of innovation at both formal and informal levels in the discussion and implementation plans. An understanding of the ‘chasm’, and a concerted effort at carefully selecting early adopters and innovators that could generate social proof, with the the goal of

institutionalizing at the program or degree level the new practices being put into place, was clearly stated and acknowledged. When an innovative product or practice has effectively crossed Maloney's chasm, and 'social proof' is sufficient enough to bring in the next wave of the early majority we see stronger abilities to overcome pending concerns of the 'sceptics'. In this way, successful diffusion of innovation can be achieved by careful selection of innovators and early adopters who can help create a shared vision for incoming participants grounded in a culture of evidence and social proof. Although we have explored the diffusion of innovation theory, it is important to consider what that theory looks like under the constant pressures of external and internal change. Merging the exponential and continuous changes that we experience in the knowledge age with the goal of diffusing effective innovative practice requires we examine the intersection of the two more closely.

Exponential and Continuous Change in The Digital Landscape of Higher Education

The current climate of exponential change requires leadership that can be effective in moving through digital and cultural landscapes while maintaining a hold on the mission of their institutions. Hendrickson, et al. (2013) reminds us of the discipline it takes for a leader to "understand and adjust to the changes in their external environment while remaining in alignment with the core values of their college or university and interpret change through the lens of their institution mission" (p.12). It is this very mix of discipline and flexibility that makes for providing effective leadership in a higher education environment difficult to navigate. In the case of technology, leaders are not only monitoring external change, but also tracking internal processes and capabilities in

tandem with instructional shifts in their larger communities of teaching and learning practice.

Taking into account the rate at which the technological and educational world are now experiencing change, one could conclude that we are entering into a period of almost certain continuous change. Weick and Quinn (1999) provide a synthesis of prior publications around the attributes and frameworks in the continuous change process,

> Images of organizations that are compatible with continuous change include those built around the ideas of improvisation, translation, and learning. The image of an organization built around improvisation is one in which variable inputs to self-organizing groups of actors induce continuing modification of work practices and ways of relating. Improvisation is said to occur when "the time gap between these events [of planning and implementation] narrows so that in the limit, composition converges with execution (p.375).

They go on to make clear that if the gap between planning and implementing narrows, the need for improvisation widens. As previously mentioned, it is now a 'new normal' to see technology product development and innovative practices happening in real time by utilizing the technology users themselves to refine products through use and feedback in real time environments. Current leaders and educators must be able to negotiate practices where "composition converges with execution" in a way that promotes best practice, prevents system failures while providing untested processes, and manage "self-organizing groups of actors that induce continuing modification of work practices and ways of relating" (Weick & Quinn,1999, pp. 375-376). In both reThink PSU initiatives covered in

these case studies, the composition of the innovative practices were happening in tandem with their execution, with user feedback on the innovation coming from faculty, staff and students and was occurring in real time. In this composition/convergence model, continuous change can be viewed as mini episodes of change that exist between temporal milestones, dissonance between beliefs and actions, and the substitution of the newer practices of novices for older vetted practice.

The two most important issues of continuous change may be those of continuity and scale. When discussing continuity around continuous change, we are associating it with organizational culture that has often codified behaviors and traditions into undocumented patterns of behavior that serve the everyday functions of our institutions. Overseeing the consistent progress in technology use over time can be complicated in two ways, 1) the tendency to hold onto quickly outdated platforms and modes of instruction, and 2) the urge to rapidly shift both platforms and instructional techniques to the detriment of the quality of both. In face to face instruction the 'tendency to hold onto outdated modes of instruction' is often true, with classroom techniques echoing decades old teaching practices. In our recent move to distance education delivery under COVID 19 restrictions, we could see the second complication of the 'reduction in quality' in the forced and rapid delivery of educational content and methods.

When dealing with practices that are embedded in exponential and continuous change, remaining stable while executing change and progress is a difficult position for decision makers and key players in the diffusion of innovation. The wide variety of digital technologies, apps and platforms has created literally thousands of micro-practices

and processes around their use in higher education. In a climate of continuous change when discussing the role of a leader or change agent Kotter (1996) asks the question, is change something one manages or something one leads? Weick and Quinn argue that to manage change is to tell people what to do (a logic of replacement), but to lead change is to show people how to be (a logic of attraction) (p.380). But the primary role of a change agent in continuous change becomes one of "managing language, dialogue, and identity" and becoming sensitive to discourse (p.381). It is also important that educational leaders be able to make sense of change once it is already underway. Dixon (1997) also argues that the most powerful change interventions occur at the level of everyday conversation. As we lead changes that are in progress, either by 'the logic of replacement' or the 'logic of attraction', as a group of social players in an organization we increasingly use our daily lives and conversations to scaffold change and implement new practices. Capturing these conversations, (both formal and informal) and documenting any small changes in our system processes can mean all the difference to the diffusion of innovation to the next set of players, such as the early and late majority. These documents can often equate to social proof that when subsequently shared with a larger network of change agents can be essential in promoting best innovative practices and technology applications to be successfully adopted.

In the continuous change model we see a great promise as a framework for discussing the environmental factors that surround technology use in higher education. We can also begin to see the relationship between continuous change, the change agent, and the functional "actors" or frontline practitioners and the practices surrounding innovative approaches. Weick and Quinn conclude their discussion on continuous change

by saying,

> Most organizations have pockets of people somewhere who are already adjusting to the new environment. The challenge is to gain acceptance of continuous change throughout the organization so that these isolated innovations will travel and be seen as relevant to a wider range of purposes at hand and . . . whether one's viewpoint is global or local makes a difference in the rate of change that will be observed (p.382).

The limitations of the continuous change model are connected to what is not specifically called into play in the theory. For instance, based on what we know of the diffusion of innovation theories presented, in what ways can a leader or change agent open up the all-important discourse between the selected "super-users" early adopters and innovators into the realm of early and late majority users, both intercampus, and cross institutionally? What tools can one use to track change that is in progress and make meaning that has an impact on a variety of perceptions, lenses, and affiliations? How do initiatives and participants assess the efficacy and impacts of these new practices and technologies and generate the all important 'social proof' to successfully cross Maloney's (2011) "chasm" as put forth in Moore's (2014) model of the theory of the diffusion of innovation?

The three papers in this multi-paper dissertation proposal (the two published papers and the third accepted book chapter) aim to synthesize some of the approaches and strategies involved across two reThink PSU case studies. The following three case studies are presented below.

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

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Abstract

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

Introduction

For many years, scholars interested in university-based learning and teaching have investigated topics under the umbrella category of academic integrity (c.f.e. Aasheim, Rutner, Li and Williams, 2012; Faidhi and Robinson, 1987). More recently, research studies focused on online learning within higher education have been published (c.f.e. Bliemel and Ali-Hassan, 2014; Jahng, Krug, and Zhang, 2007) and since 2008 the US government has required that all distance education courses/programs have methods in place for verifying that the student registered for the course is the one actually taking the course and receiving the academic credit (The Higher Education Opportunity Act [HEOA]-Public Law 110-315). This context is the backdrop for the growth of software products and services designed to increase academic integrity compliance including plagiarism detection software, remote proctoring devices, and browser lockdown technology. Such services are sold along two lines: identity management and plagiarism detection – in other words – determining the student is who they say they are, and that they are doing their own work. At the same time, approaches aimed to prevent academic dishonesty before it starts are developed internally by online programs and courses. As such, there are calls for further investigation into effective strategies for decreasing the risks of academic dishonesty that are inherent to so-called virtual environments (Grijalva, Nowell & Kerkvliet, 2006).

In our School of Business at a large urban university, we have chosen to address academic integrity issues through an inexpensive technology approach that deploys video conferencing in an otherwise fully online and asynchronous degree program. The program was sponsored by a larger institutional initiative which called for "reThinking"

the institution by designing programs that are flexible, student-centric and apply technology to pedagogy. The School of Business was awarded a $296,000 grant to build a fully-online degree completion program (junior and senior years of the business degree). To be as flexible as possible, the program was designed for students who may never be able to come to campus. Inspired by the work of Richard Light (2001) which showed the most powerful undergraduate experiences include small group "face time" with faculty, the new program integrated the mandatory use of regular small-group video conferencing in all courses. While some have suggested that synchronous elements in an online course are counter-intuitive and antithetical to the distance learning ideas so often associated with MOOCs, recent commentary on highly regarded and innovative online programs shows evidence of a shift toward such synchronous video-based elements in online courses, in large part to address issues of academic integrity and high level student engagement with course material. For example, at the University of North Texas (UNT) fully online degrees in business now play a more significant role moving forward, in that they are placing a greater emphasis on video strategies (Hayes, 2014). Additionally, Minerva, one of the most innovative and forward thinking fully online schools in the U.S., showcases "a proprietary online platform developed to apply pedagogical practices that have been studied and vetted by one of the world's foremost psychologists, a former Harvard dean named Stephen M. Kosslyn", also uses short (45 minute) synchronous video conferencing with faculty and small groups of students to explore topics and solicit succinct discussions and interactive pop quizzes around course content (Wood, 2014, para. 2). What is the value of such sessions? Wood (2014) who is an author for *The Atlantic*, had the opportunity to visit Minerva and try out the online platform. He

describes this experience as fast paced and intense, or not at all like what he had experienced in “an ordinary undergraduate seminar” (para.3). Wood (2014) expands on his experience saying, “In an ordinary undergraduate seminar, this might have been an occasion for timid silence, until the class’s biggest loudmouth or most caffeinated student ventured a guess. But the Minerva class extended no refuge for the timid, nor privilege for the garrulous. Within seconds, every student had to provide an answer, and (the instructor) displayed our choices so that we could be called upon to defend them” (para.4). The ability to ensure that each student, regardless of personality type or propensity to talk or be quiet, meets the same demands by the instructor, or what Woods (2014) refers to as, “a continuous period of forced engagement” where “I was forced, in effect, to learn”, is a level of rigor that produces great value in terms of authenticating and verifying that knowledge is being gained, and that scholarly insights, conclusions, and connections can be made in live environment on demand (para.6). This description illustrates the multiple roles video conferencing can play in fully online degree programs or individual courses. Students must keep up on course material and these “face-to-face” video conference opportunities would reveal rather quickly a student who is not familiar with the content of the course.

While such innovations command the attention of online program developers (e.g. administrators), faculty in post-secondary education are generally the front-line implementers of the online course work. He, Xu and Kruck (2014) point to the growth of online coursework in information systems/information technology and the movement from offering courses to offering entire programs online (He, Xu & Kruck, 2014, p. 102). In their article, “Online IS Education for the 21st Century”, the authors review research

on the differences between face-to-face and online coursework and point out that students expect excellent course design in online courses to compensate for the lack of face-to-face interaction. Most importantly, He, Xu and Kruck highlight the role faculty play in online course delivery and articulate Tu and McIsaac's notion (c.f. He, et. al. 2014) that the construct of "social presence" is an "important factor in improving instructional effectiveness and building a sense of community" (p. 103). Therefore, while course design, including the application of a variety of tools for online engagement, is an essential component of online course/program success, faculty training and development in the skills for online teaching will be critical to a program's or course's success as well. Next we consider the literature on academic integrity in online courses, and we then introduce the theoretical framing of social shaping of technology as the lense through which we explain how the video conferences help to address problems in this domain. After a summary overview of the online program and its required conferencing protocol, we present findings related to the effectiveness of this technology for preventing academic dishonesty in online courses[1]. Next, we discuss best practices and areas to consider prior to implementing a video conferencing protocol. We conclude with challenges and opportunities, based on our four years of experience in using this technology in our fully online courses.

Literature Review

Why do members of organizations engage in unethical behavior? Lawrence Kohlberg's classic work considers stages of moral judgement (Kohlberg, 1977) as a key

[1] While there are a number of educational benefits of video conferencing they are the subject of other papers and are excluded here for the sake of clarity.

individual variable in ethical behavior. According to Kohlberg's long-standing model, organizational members are at varying stages of their own moral judgement when facing an ethical decision, such as whether or not to cheat in a course. These three stages include a preconventional stage characterized by a focus on the likelihood of being punished and the instrumentality of the action for one's own interest, a conventional stage which focuses on being perceived as "good" and abiding by laws, and the postconventional, or most mature, stage. In the postconventional stage, the individual may be considering the larger social-contract or the value of adhering to universal principles of ethics.

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

Other research investigates external influences on ethical behavior that serve as a psychological "prime", such as observing someone else cheat or simply mentioning the notion of cheating prior to an opportunity for cheating (Gino, Ayal & Ariely, 2009). Both conditions result in a higher likelihood of the observer engaging in cheating behavior demonstrating that "unethicality does not depend on the simple calculations of

cost-benefit analysis, but rather depends on the social norms implied by the dishonesty of others and also on the saliency of dishonesty." (p. 393). Similar external conditions are central to many models of ethical behavior, or research on intentions to engage in unethical behavior, and often demonstrate that strong structural or organizational deterrents against unethical behavior are key in promoting ethical behavior. Banerjee, Cronan and Jones (1998) specifically studied IT professionals using organizational scenarios common to that profession (e.g. overdrawn account) and found that ethical behavior intentions varied by scenario leading them to a model of situational ethics and a call for stronger ethics policies or conduct codes in organizations.

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

More specific to the context of this study, existing literature on academic integrity in higher education contexts has, as expected, focused on traditional classroom environments until recently when online courses have been the focus of a subset of this focal area. Next, we highlight a number of studies that draw on traditional and online

contexts for their findings that are particularly helpful for understanding our field and upon which we hope to extend the contribution.

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

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

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

Academic dishonesty is an issue of concern for teachers, students, and institutions of higher education. Due to the fact that in most online coursework students and faculty do not interact directly, it is often perceived that cheating will be more abundant in these classes. However, in a survey administered to students who had experience with online coursework Grijalva, Nowell and Kerkvliet (2006) found that academic dishonesty in

online classes is no more pervasive than in traditional classrooms. Nevertheless, Wang Tsai (2016) proposes that the notion that online environments offer "easier opportunities for academic misconduct" (p. 387) still exists and begs the question, how do we mitigate cheating in online course design?

Research Design & Theoretical Framing

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

The study was conducted at our business school which has been offering fully online courses since 2012 including degree completion pathways for two majors: 1. management and leadership and 2. supply and logistics. Between 2012 and Spring 2016 enrollment in online courses totaled 2,957 undergraduate students including a mix of students that are fully-online, and those who take a mix of formats from campus-based,

hybrid, and fully-online courses. 53% of our students identify as male, and 2% do not identify as either male or female. The majority of our students transfer in at the junior year and are residents of the state. The average age of the student population is 27 and more than 70% work while attending school. 10.5% of business undergraduates are international students.

A purposive sample was created from the population of all student course evaluations in the School of Business at our university that are collected regularly in our normal operations. From this population of surveys, those from online courses were selected. Then, we narrowed the surveys to those that had qualitative comments related to the video conferencing feature of the course[2]. Of those students enrolled in an online course, 41% completed an anonymous evaluation (1,201) and this formed our initial sample. However, only 65% of those evaluations included qualitative comments and 420 were later excluded from the sample because of a lack of comments. This comprised the student input for this study. For faculty input, 40 faculty taught at least one course online in the School of Business and 87.5% responded to a short survey that included Likert-scale questions and open-ended responses. Both the faculty survey and the student course evaluations were sent via email with a link to a Qualtrics survey followed by multiple email reminders.

The qualitative comments from faculty and students were converted into two separate text files and imported into a web-based qualitative data analysis application

[2] The sample was collected through a search on the course section field which can be limited for online. We transcribed all qualitative comments from these course evaluations

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

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

Table 1: Deductive Analytical Codes

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

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

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

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

Synchronous Video Conferences

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

A specific strategy currently being employed in the program's undergraduate video conferences is a unique application of the Cloze Procedure (Cloze Procedure, n.d.). Essentially, the cloze procedure "is an informal tool for assessing students' comprehension. Teachers use the cloze procedure to gather information about readers' abilities to deal with the content and structure of texts they are reading. Teachers construct a 'cloze passage' by taking an excerpt from a book-a story, an informational book, or a content-area textbook-that students have read" and then delete sections of passage (ibid.). In this case, faculty are using the student's own work. By reviewing what

the student has submitted prior to the video conference session, the instructor can restate a portion of the students writing or ideas, yet the faculty statement is missing important pieces, words, phrases or points from the scholar's submitted work. The student is then called upon to showcase their work in the video conference with their professor peers, and are requested to 'fill in the blanks' of the statements offered by faculty. Students use their knowledge of their own work to successfully predict the missing ideas or phrases in the text passage, and they are welcome to expand their ideas and discuss the material with their peers. This method is often applied in the first round of questions in a conference, and where there is academic integrity this approach can increase the student's comfort level, and help to build the confidence of the students as they discuss their own work. Where the student is unable to speak to their own work, the faculty are able to take the concerns out of the group video conferencing arena at a later time, and meet with the student one-on-one to assess comprehension and content. By employing specific techniques that focus on comprehension, this retrofitted cloze procedure can reinforce whether or not students are crafting their own materials, and the depth of which they understand and can speak about them.

We required student participation in at least four synchronous video conferences over the course of the term as a minimum requirement for passing any fully online course (see Table 2). These conferences include the instructor and a small group of student peers ranging from two to six students. While synchronous video conferences create some challenges in implementation, we have found they address concerns about academic integrity in three important ways. First, they assist students in keeping up on the course material which may mitigate temptation to cheat. Second, they provide important checks

to avoid impersonation schemes which are a common concern with online coursework. Third, these video conferences can help establish a personal connection between professors, students and student peers (rapport) which may reduce the desire to cheat in a course.

In the first week of term students are required to complete a technology test with a program administrator to insure their hardware is sufficient for the video conferences that follow. The video conferences with faculty begin in weeks two and three of the term. Faculty time is of concern and the rationale for group size and number of conferences per term is that faculty: 1.) have no more time in video conferences than they would otherwise spend in classroom lecture in a ground campus course (e.g. four hours/week) and 2.) have the opportunity to offer "make up conferences" in week ten within the four-hour per week maximum expectation on faculty time.

Week One	Weeks Two & Three	Weeks Four & Five	Weeks Six & Seven	Weeks Eight & Nine	Week Ten
TEST conference (administered by technology support administrator)	30 min conferences with each student group One conference per student and approximately eight to ten meetings for faculty over two weeks.	30 min conferences with each student group One conference per student and approximately eight to ten meetings for faculty over two weeks.	30 min conferences with each student group One conference per student and approximately eight to ten meetings for faculty over two weeks.	30 min conferences with each student group One conference per student and approximately eight to ten meetings for faculty over two weeks.	Make up conferences

Table 2: Distribution of video conferences across the 10-week term

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

Overview of Conference Protocol

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

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

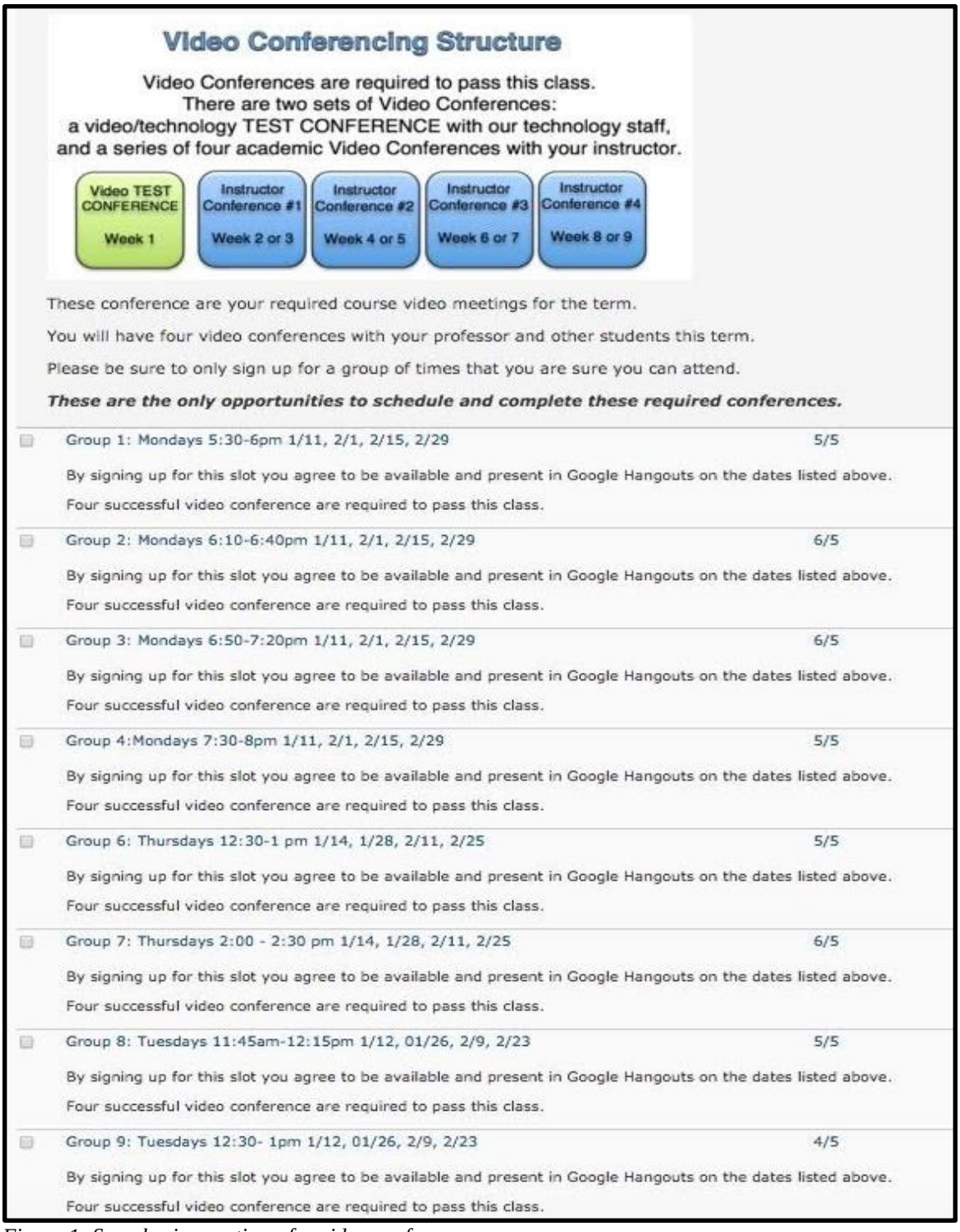


Figure 1: Sample sign-up times for video conferences

Faculty prepare for the video conferences by reviewing student work submitted thus far and formulating some general questions about the course material up to the point of the

conference. Conferences should not be specifically linked to any particular assignment and they should not be lectures. This is because the conferences will occur for students across a two-week period, or in some cases, a student may be making up a conference in week ten. Linking conference content to specific course assignments is not advised as it makes it complicated to perform make up conferences later in the term.

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

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

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

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

"*Harry, you earned full credit on the quiz about [business plans]. Tell us a bit about [business plans].*"

or

"Sally, I'm holding the [paper] you submitted last week here in my hand. I really love the way you [conducted your field interviews]. Can you describe this to the other students?"

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

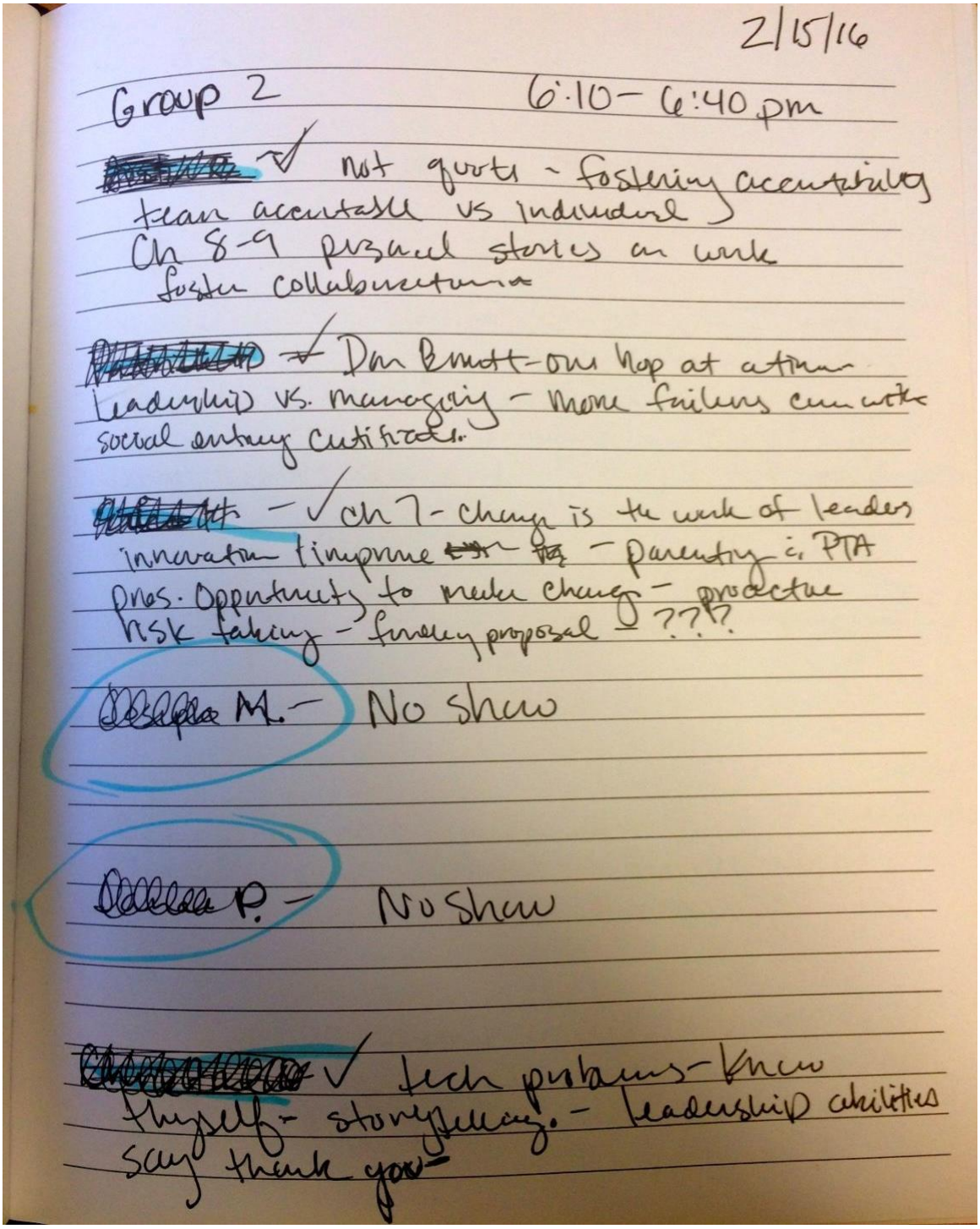
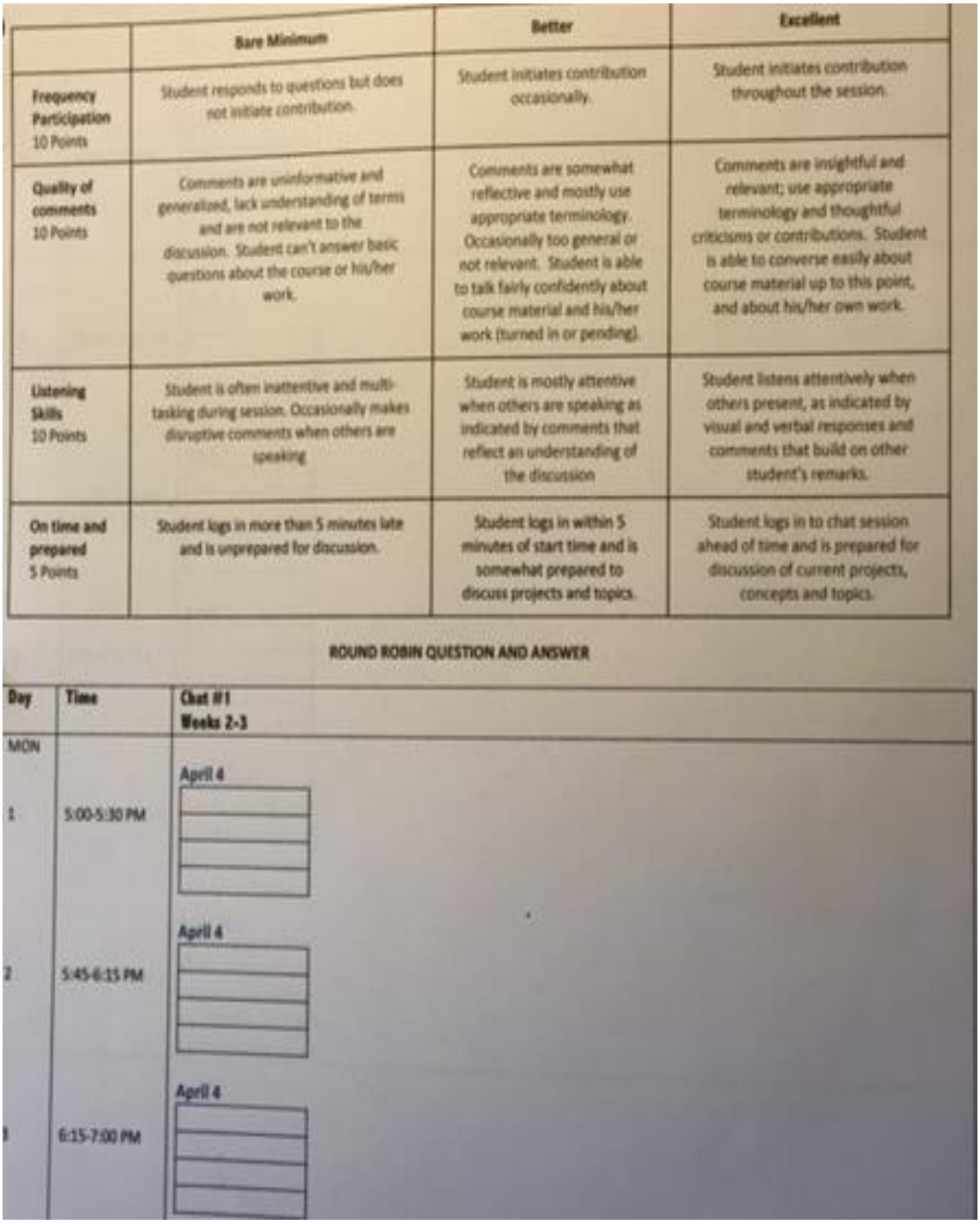


Figure 2: Sample Notetaking



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

ROUND ROBIN QUESTION AND ANSWER

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

Figure 3: Rubric with Note format below

To promote professionalism and help faculty to avoid "video conference fatigue", the protocol requires faculty to stop conferences at the thirty-minute mark. We recommend

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

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

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

Sally, for full credit, be sure in future conferences to come a few minutes early so you don't risk being late. You were about 5 minutes late to today's chat (10/31). It can be challenging to be put on the spot with the course questions but you'll want to bring notes, read ahead, watch all lecture video so that when asked, you can provide an answer to questions like "What did you find most interesting in the readings for this week?"

Excellent job discussing your project submission and sharing a problem you had with a research source. Be sure to come prepared to discuss concepts from this course. While the concept of flexibility is interesting, it isn't something that is in our reading for this class. For the next conference be sure you are prepared and can demonstrate a strong connection to the course material up to this point.

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

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

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

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

Findings

While these synchronous video conferences involve some labor in implementation, evidence suggests they address academic integrity issues in three important ways. First, they provide a structured space for faculty to be present with

students in a face-to-face manner. Second, they provide important checks to avoid impersonation schemes which are a common concern with online coursework and third, they assist students in keeping up on the course material which may mitigate temptation to cheat. We consider each of these findings below.

Faculty Presence & Development of Personal Relationships

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

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

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

Faculty presence in face-to-face video conferences, helps connect students to the instructor. Several faculty mentioned how the class sees one another at home, in leisure-

wear, for example, and also get insight into bedroom and kitchen décor. The faculty remarked that this creates a warmth and familiarity amongst the group members:

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

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

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

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

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

The best video chat sessions I have experienced. I have done video chats in 5 other courses, and this was by far the best. First the time slots were varied greatly which allowed everyone to find one that worked comfortably into their schedule. Second, she

was very open, friendly, and constructive in the chats. She made it feel more discussional rather than like an oral test as some of my other classes had done. [Online Course Evaluation by Student]

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

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

Student Conduct highlights the importance of faculty presence for starting conversations with online students about issues of academic integrity:

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

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

Authentication of Work

Fundamentally instructors of online courses must be able to authenticate work if the program is to have a reputation for quality. And for students to demonstrate scholarly capacity in online courses beyond just written work, video conferences offer the opportunity for such demonstration. Online courses in the School of Business have a higher withdrawal rate than the ground campus equivalents and the program

administrators attribute this to students who, upon reviewing the syllabus, realize the course will be quite demanding and will require regular video conference sessions throughout the term. In this way one might say that the technology itself does mitigate cheating. We argue it is a bit more nuanced. The effective protocol and its implementation by diligent faculty is likely to encourage dishonest students to drop the course. This is not a case of technological determinism where the mere presence of video chats in a course leads to positive social outcomes. As Brent and Atkisson (2011) note online course designers and faculty have responsibility for structuring courses to mitigate cheating. Video conferences are part of such a structure. As noted by the Student Conduct director:

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

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

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

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

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

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

Assessing Student Capacity at Regular Intervals

The research shows that, in online environments, it is important to assess student capacity at regular intervals by giving multiple assignments and personal, reflective assignments throughout a term, and that this makes students less likely to plagiarize

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

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

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

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

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

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

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

A Demonstration of the Process for Using Video Conferences to Address Academic Integrity

The following story demonstrates the power and nuance of using video conferences as an authentication tool. It is shows the importance of an integrated process that uses evidence from the conferences as a trigger for action but then accesses multiple sources of information and approaches student integrity issues with sensitivity and an open mind. The following is a transcription of an interview with one of the online faculty in our program.

"…So in the Google Hangouts, his English was very broken. It was difficult for him to discuss the concepts and the topics in a way that flowed or made sense. So I had a very hard time discerning his level of understanding of the content. And then at the same time he was turning in work, he was turning in papers and discussions and projects that were much more fluent, their English and all that. And so I felt like there was a discrepancy.

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

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

multiple opportunities for the faculty member to identify, address and resolve issues of academic integrity.

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

Best Practices

The following set of best practices provide important markers for those embarking on online course/program development (See table 2). Just as landmarks on a map provide touchstones for orienting oneself, these recommendations are meant to help start discussions and reflective practice. They are not meant as a list of success factors or mandatory requirements. As Walstrom (2014) states in his article "Lessons Learned from Migrating to an Online Electronic Business Management Course", such studies are "limited by the best practices and learning management systems available now. Better practices and improved learning management systems will change perceptions" in the future (p. 145). First, as stated above, look for the similarities rather than differences between online and classroom based courses. Doing so will carry tried-and-tested tenets forward into online distance education contexts, rather than reinventing the wheel. In addition, be cautious when implementing academic integrity functions that do not have

meaningful learning outcomes attached. As SST reminds us, people will always find a way to work around a technology if they are so motivated. Instead of relying on technology alone (like ID checking, public record entry), consider building engagement with the course content and the instructor to deter cheating.

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

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

Table 2 lists the best practices in summary form for using video conferences in fully online courses. This list is intended to serve as a catalyst for conversation about

how to use video conference at other institutions and in other contexts, rather than a comprehensive prescription for all contexts.

Look for the similarities between online and classroom-based courses when designing.
Be cautious when implementing academic integrity functions that do not have meaningful learning outcomes attached.
Although course assignments may be referred to within authentication contexts, the video conference content should be independent of the timeline of assignments and teamwork to allow for ultimate flexibility.
Keep the focus on "inspiring confidence in the fact that the student work submitted is the work of that student".
Do not use video conferences as a time for lecture - let students do the majority of the talking.
Cease grading student work when they miss a conference until the student has made up the missed conference or attended the subsequently scheduled conference.
Video conferences can be conducted in three parts: oral quiz, focus on student work and a kind of fun "tension release" where students share their own experiences.
There must be standard practices and protocols across courses in a program.
Missed appointment policies should be consistent across the program with opportunities for faculty and student make ups within reason.

Faculty should only schedule the number of video conferences per week that would amount to the number of in-class teaching hours per week were they teaching in a ground campus course.
Student groups should not exceed four students per regular conference assuming conferences are about 30 minutes in length.
Program administrators and school leadership must support instructors with reasonable course caps and be invested in a high quality educational experience for the student.

Table 3: Best Practice for Effective Video Conferences

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

Conclusions

In this paper we have provided an overview of the design and procedure for the video conferencing element of our fully- online degree completion program. Framed by a review of existing literature, we provide detail on the video conference protocol as

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

Investigating how students taking online classes and faculty teaching these courses frame their experience enables an examination of both their subjective understandings of these experiences and how a pedagogical tool such as regular video conferences addresses concerns about academic integrity. By accessing these accounts though end-of-term course evaluations and a solicited faculty survey, we are able to capture the message they are attempting to send to those with authority over the course design. Our qualitative analysis allows us to examine what the participants themselves consider to be important to communicate. A limitation, however, is that it is not possible to correlate the students' academic performance with their comments. However, our School of Business online program has been using this video conferencing practice for

over four years to address concerns about the quality and integrity of our online programs and the comments collected via the methods in this paper reflect the general success of the tool for use at this time. By providing specific descriptions of the consistent aspects of our video protocol including grading rubrics, grading comments for various levels of performance and contingencies for students who do not participate, we endeavor to spare the reader the failures from which we learned (e.g. continuing to grade student work when a student neglects to attend the video conference and facing an end-of-term dilemma about credit earned for submitted assignments) such that the future of many forms of online instruction might be especially successful in higher education, in particular in courses teaching information technology topics.

Supplemental Material

Faculty Survey

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

Faculty Interview Protocol
Interviewee (Title and Name): _____

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

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

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

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

4. How have these video conferences supported academic integrity in your course?
Probe: Is there a particular example that exemplifies this?
Probe: Are there strategies you apply to help support the goal of academic integrity in your video conferences?

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

6. Are there challenges to these video conferences?
Probes: How do you think these can barriers be overcome?
Do you see opportunities that could be maximized? What are these and how?

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

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Creating an Eportfolio Culture on Campus through Platform Selection and Implementation

By: Candyce Reynolds and Melissa Shaquid Pirie

Given the initial excitement in the early 2000s about the potential of eportfolios for advancing integrative learning and authentic assessment in higher education, one might imagine that eportfolios would be ubiquitous in the academy, replacing final exams, cumbersome assessment processes, resumes, and even transcripts. The reality is much more meager. A recent Educause survey (Dahlstrom, Walker, and Dziuban 2013) reports that 57 percent of higher education campuses have "made some use" of eportfolios, but only at a program or course level. However, the promise of eportfolios as a broadly used tool for enhancing student learning and advancing authentic assessment is yet to be seen. The rate of eportfolio adoption follows Rogers' (2003) Diffusion of Innovation theory, which describes the process of adopting of new technologies over time with the standard bell curve illustrating the process. The theory asserts that innovation starts with innovators, of course, and that, by definition, they are limited in numbers. The next group to follow a new technology are the early adopters.

It is at this stage that many campus eportfolio projects get stuck. A few enthusiastic stalwarts rally their colleagues and harangue their students to adopt this amazing learning tool but often end up continuing to talk with each other at that next eportfolio faculty development event. The theory posits that there is a breaking point, called the chasm, that must be gotten through to get to the pinnacle—early and late majority adoption of technology. (At the tail end of the technology adoption model are the laggards.) The question becomes, how do we spread the use of eportfolios beyond our

innovators and early adopters? This article describes one institution's current attempt to move a long-standing practice of eportfolios to a majority of users, along with what we have learned in our journey. Perhaps our lessons will help those who also wish to move their eportfolio use in higher education forward.

The Portland State Story

Portland State University (PSU) is an urban campus located in the heart of downtown Portland. It is the largest university in the state, with more than 28,000 students enrolled in undergraduate and graduate programs. It is Oregon's most diverse state university and also boasts a large transfer population.

In 1994, PSU launched its four-year interdisciplinary general education program, University Studies. From the start, portfolios were seen as a way to enhance student learning and assess the program. In 1998, we started using eportfolios in University Studies' yearlong Freshman Inquiry courses. Soon, nearly all of our Freshman Inquiry courses were using eportfolios. Despite the technological challenges encountered in these early days of web-developed portfolios, faculty and students saw the value added in using eportfolios. Labissiere and Reynolds (2004) highlight the advantage of an eportfolio over a hard copy portfolio. Especially relevant is the impact on student intellectual and personal growth. An eportfolio allows students to consider multiple audiences, forcing a critical lens on what they share and why. With the ability to hyperlink on a webpage, students are also more easily able to make connections between and across what they have learned, creating opportunities for deeper critical thinking.

Our intention was to carry the eportfolio into all levels of our University Studies courses and beyond. This happened on a limited scale. Some of our Sophomore Inquiry

and Senior Capstone courses began to use eportfolios. Some individual courses in majors also began to use eportfolios. But the hope for a proliferation of eportfolio use was not achieved. While the majority of Freshman Inquiry students (more than 1,000 students each year) created an eportfolio, few encountered one again in their academic careers. If they did, it was unlikely that the portfolio would be related to their previous portfolios and would probably be hosted on an entirely different web platform. The dream of creating a rich portfolio process that could follow students through their academic career was just that, a dream.

We in the eportfolio field often say that it is the pedagogy that matters, and while this is still true, the technology matters too. Some of our difficulty in moving an eportfolio initiative across our campus was related to not having a university-wide supported technology platform. The investment a faculty member and a student must make to learn and manage a technology tool might just feel too large.

Without a shared platform across campus, several problems had arisen. For students, it meant that they could not use their eportfolio across programs and courses. In addition, they often had to learn a new platform, which focused them on learning the technology rather than learning through the content and process. Without a shared and supported platform, there was no technical support for learning or troubleshooting problems. This lack of centralized support also contributed to faculty reluctance to invest in the eportfolio process. In the almost twenty years since our initial foray into eportfolios, interest and use had grown, but to move its use beyond the early (and now middle-aged) adopters, we needed to address the technology issue.

An Opportunity and a Strategy

In 2013, the PSU provost, Sona Andrews, announced her Provost's Challenge to fund projects aligned with "reTHINK PSU," a PSU presidential initiative. This initiative is a campus-wide effort to deliver an education that serves more students with better outcomes, while containing costs through curricular innovation, community engagement, and effective use of technology (ReThink PSU, n.d.). A group of faculty proposed a project, Making Learning Visible: An Eportfolio Initiative to Transform Learning and Assessment at PSU. The proposal was primarily to obtain funds to acquire and support an eportfolio platform. But, in addition, we aimed to develop an eportfolio culture on campus through the process of acquiring the platform. The project leadership team consisted of a small group of faculty and staff who were already eportfolio users and enthusiasts. The team decided that we would organize our work around three general steps: platform procurement, early implementation, and expansion. We will describe the process and the lessons learned in each step.

Procurement

The procurement process started in fall 2013 and culminated in purchasing an eportfolio platform, PebblePad, which PSU begun to pilot in fall 2015. We could have created a quicker process, but in the time we took to engage our community in selecting the platform, we gained excitement and momentum in using eportfolios on our campus. We decided to involve all possible stakeholders. There were certainly individuals in the institution who had some interest in eportfolios and they were, of course, invited in the conversation. However, we also identified those who might possibly be interested in eportfolios and invited them also. Early in the process, the leadership team held small

meetings inviting these stakeholders to think about the possibility of eportfolios. You might call this intrusive inclusion. We then held several large meetings with the intent of asking these stakeholders and potential stakeholders for their help in selecting a university-wide eportfolio platform. Both the small and large meetings served as an opportunity to educate our community about eportfolios and the potential they have to improve learning and assessment on our campus. We also gave those involved an opportunity to imagine possibilities of using an eportfolio in their context, something that many had never considered.

From these early discussions, the project leadership team decided that we needed three work groups to help name the criteria we would use in our Request for Proposal (RFP) to eportfolio vendors. These work groups were Pedagogy, Assessment, and Technology. Stakeholders selected the work groups they wanted to participate in, and each group was facilitated by a leader. These meetings were held once every two weeks. There was good participation, and faculty and staff were eager to learn and share ideas about what should be included in the RFP. It was a learning experience for all of the participants. For example, it was impossible to talk about the requirements for pedagogy without talking about pedagogy in general—sharing ideas about assignments, addressing diverse student needs, and talking about concepts such as student-centered learning and self-directed learning—as well as the role an eportfolio could play in a student's learning experience at PSU. Participants left these meetings feeling energized, inspired, and knowing that their ideas could make a difference.

The ultimate RFP was unwieldy and asked for way more than any software could deliver. However, the discussions allowed stakeholders to consider with some depth what

was possible and what was most important. In the end, participants felt their voices were heard and their constituents' needs were being addressed. The RFP was released, and six vendors expressed interest. We invited four vendors to come and present to the campus community. We made sure that these big public forums were advertised widely. The events were well attended and were videotaped so that those who couldn't come were still able to participate. We solicited opinions about the platforms via an online survey, but participants were encouraged to give feedback in whatever way they wanted. These events, again, were learning opportunities for our community. Those who had not been involved, but were curious, learned more about eportfolios and their potential for learning and assessment in their context.

Ultimately, the project leadership team recommended to the Vice Provost in charge of the Provost's Challenge that we use PebblePad. PSU is one of the first North American schools to work with PebblePad, which is located in the United Kingdom and used widely in Europe and Australia. We were attracted to the idea that the platform is actually more than an eportfolio tool; it is a personal learning environment. It is a place where students can plan and document their experiences and thoughts as well their achievements. While not designed to be a Learning Management System, it has the capability of delivering content and managing submissions and online conversations. In addition, being one of their first customers in the American market meant that we could have a collaborative relationship in future development of the product. More information about the procurement process through the Provost's Challenge project can be found at https://www.pdx.edu/oai/provosts-challenge-projects-169.

Lessons Learned

The biggest lesson we learned is that the involvement of many people, current and potential stakeholders, worked. There was a buzz on campus. We had the advantage of being one of the Provost Challenge projects and people were curious on that basis alone. They may have gotten in the door on the basis of their curiosity, but they stayed because we invited them to actively participate in a process that could or would have an impact on their practice at the university. Through our intrusive inclusion of multiple and perhaps unlikely stakeholders, ownership of the eportfolio on our campus broadened. It wasn't just one of those things that some departments did; it became something I might do in the near future. This process created new eportfolio champions on our campus—programs and people who were eager to engage in an eportfolio process and use the platform. We were also reminded of the need for and reward gained by creating the time and space to discuss issues of learning in the academy. The small and large group meetings, the work groups, and the public forums all provided opportunities to connect and learn across departments and disciplines.

Implementation

At the tail end of the procurement process, the project leadership team began to plan for the next stages. While procurement of a platform was the aim of the Provost Challenge project, just purchasing a product would not be enough to support our movement beyond initial adopters. Leadership for the project has shifted. There is now shared responsibility for the eportfolio process in centralized offices on campus. The Office of Academic Innovation (OAI), our faculty development center, is now responsible for helping onboard and support faculty who want to use PebblePad, and the

Office of Information Technology (OIT) is now responsible for supporting the technical backend of the product as well as students who are using the platform. A faculty-in-residence for eportfolios and Integrative Learning in the initial pilot year was established. In addition, a Stewards group was formed with those from the project leadership team who wanted to continue and expanded to include newly identified eportfolio enthusiasts with the role of stewarding the project forward.

With this authority in place, a roll-out plan was developed with the Stewards group. We agreed that it would be best to start with a diversity of programs developed by those who wanted to be in a pilot group and would commit to participating in a several-day PebblePad Academy at the beginning of fall term and ongoing community of practice meetings. We included groups in the pilot projects that represented a variety of uses of the platform with the idea that we can create use-cases from which others on campus could learn. Some are from academic programs, offered both face-to-face and online; some are extra-curricular programs. One pilot involves faculty using PebblePad to create their own Promotion and Tenure eportfolios. In addition, OAI has organized professional development activities involving eportfolios and PebblePad. Two of the most recent campus-wide events included international speakers on eportfolios. The platform is available to any PSU faculty, staff, or student, and while not widely advertised yet, word of mouth has brought new users to OAI to learn about the new platform and how it can be used.

Lessons Learned

Beyond the initial procurement process, the university has invested in the new platform by centralizing services to faculty and students through OAI and OIT. The impact of this

has been great. Faculty and student questions are addressed quickly. Staff in these offices are eager and able to create resources. Prior to this, program, faculty, and students who wanted to use eportfolios were on their own. This centralized support in well-established services on campus will make the integration of the new platform sustainable. In addition, we have learned the importance of maintaining and nurturing the learning community that developed in our PebblePad Academy. Those of us who are actively using the tool contact each other to celebrate our successes and help each other with problems. In addition, OAI has hosted initial adopters' reunions. One such reunion was focused on a discussion of possible research agendas that could be developed from these projects. Lastly, we have learned that faculty and students are interested in learning more about how to use PebblePad. As more people learn about the platform, the numbers of calls and emails have increased.

Expansion

The Stewards group is currently refining our original vision for the eportfolio project as well as our five-year plan. We have identified constituents we would like to engage in eportfolios, including our partnerships with high schools, community colleges, and alumni. One important area that seems to have potential for creating an eportfolio culture is the use of PebblePad for promotion and tenure and other appraisal processes. As faculty and staff become familiar with the software, they will likely see the utility of using PebblePad with their students. While we had wondered if we would need to do a lot of outreach and education to get buy-in, it is clear that, instead, we will have to manage the demand for getting involved.

Lessons Learned

We have learned that we need a clear process for onboarding new projects using eportfolios and PebblePad. Learning new software and changing pedagogical practices is challenging. Acquiring a platform is not the end of this journey. While we chose the platform because it offered more than just an eportfolio, it has not been easy learning about and using all of its functionality, even for our professional staff in OAI and OIT. Also, in bringing in a system that is student-centered, we are needing to redefine how we provide support services to our students. OAI is focused on providing support for faculty, while OIT is tasked with providing support for students. However, OIT's focus has been on supporting students with use of the technology and not on supporting them with the learning process. The boundaries of the platform demand that we consider student learning and support outside of the traditional classroom context. Finally, we are learning that to sustain and continue to grow interest and use, we must continue to promote and support new users. Without this, we will have a few more initial adopters, but we will not get to a "majority" user status.

Conclusion

Selecting a centralized and supported eportfolio platform has paved the road for PSU to fully realize the promise of eportfolios in advancing learning and creating authentic assessment. Faculty and students now have the basics for creating a rich and connected learning experience. Our journey with eportfolios started with a focus on student learning and the development of processes that were aided, but sometimes hindered, by the lack of an easy to use, single platform. With the introduction of PebblePad, we are addressing this issue. The future, however, is dependent on how we

use this new base to further to innovate and support our campus community in continuing to put student learning first. The platform remains a tool for learning; the work behind the tool is still most important.

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Leveraging a Campus Equity Walkthrough Evaluation (CEWE) ePortfolio to Assess First-Year Students' Equity-Minded Learning and Campus Belonging

by

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This research is supported by a fall 2020 Residential Research Group Fellowship Grant from the University of California-Irvine's Humanities Research Institute. Co-author Fernández shared initial findings at the 2018 American Association of Colleges and University National Conference in Washington, D.C., with a presentation titled "Co-Developing an Electronic Campus Equity Walkthrough Evaluation (CEWE) to Assess Students' Sense of Belonging and Equity Mindfulness."

The co-authors' 2017 Campus Equity Walkthrough Evaluation (CEWE) learning ePortfolio would not be possible without the 2015 paper-based Student Equity Walkthrough Evaluation Tool by Dr. Veronica Keiffer-Lewis, then-department chair of International, Peace, and Justice Studies, De Anza College (Cupertino, CA).

We have no known conflict of interest to disclose.

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Abstract

Scholarship demonstrates that ePortfolios enable students to collect work over time and reflect upon personal, academic, and career growth. However, a discussion on whether ePortfolios helps first-year students describe their equity-mindedness or document their campus belonging perspectives remains mostly unexplored. The purpose of this point-in-time, qualitative research study is to describe first-year students' experiences completing an on-campus physical walkthrough each spring quarter of 2017, 2018, and 2019. All first-year students were enrolled in a yearlong Freshman Inquiry course at Portland State University in Oregon. This study utilizes Saldaña's in vivo coding approach to analyze students' survey responses and summative essays. The research design begins with students answering an anonymous pre-learning survey each spring quarter, then completing an on-campus walkthrough during the same spring quarter utilizing a Campus Equity Walkthrough Evaluation (CEWE) learning ePortfolio, and concludes with students writing a summative reflective essay. The study found three themes: 1. Before completing the CEWE, students defined equality and equity interchangeably with fairness; 2. While completing it, students showed surprise at the variety of on-campus student resources; and 3. After completing the CEWE, students identified inclusion and exclusion experiences on campus based on their social identities. The results suggest that the CEWE shifts first-year students' understanding of equity-mindedness in three ways: 1. First-year students identify racialized structures and practices on campus; 2. The equity-minded ePortfolio framework develops students'

capacity for self-reflection; and 3. Students determine that racialized structures and practices on campus impact their campus belonging.

Keywords: critical pedagogy, equity walkthroughs, first-year students, high-impact practices, learning ePortfolios

Leveraging a Campus Equity Walkthrough Evaluation (CEWE) ePortfolio to Assess First-Year Students' Equity Learning and Campus Belonging

Leveraging ePortfolios to assess first-year students' equity-mindedness or sense of campus belonging is understudied. Scholarship on ePortfolios primarily demonstrates how such portfolios enable students to collect work overtime, reflect upon their personal, academic, and career growth, and make connections across various educational experiences (Light et al., 2012; Reynolds & Patton, 2014; Yancey, 2019). However, a discussion on whether ePortfolio practice in first-year courses also helps students describe their equity-mindedness (Bensimon & Malcom, 2012; Dowd & Bensimon, 2015) or document their perspectives on seeing themselves represented on campus remains mostly unexplored. The purpose of this point-in-time, qualitative research study is to describe first-year students' experiences completing an on-campus physical walkthrough each spring quarter of 2017, 2018, and 2019—before most U.S. universities closed campuses in the spring of 2020 due to COVID-19. All first-year students were enrolled in an Immigration, Migration, and Belonging Freshman Inquiry course, an interdisciplinary, yearlong first-year University Studies seminar. The results suggest that the CEWE shifts first-year students' understanding of equity-mindedness in three ways: 1. First-year students identify racialized structures and practices on campus; 2. The equity-minded ePortfolio framework develops students' capacity for self-reflection; and 3. Students determine that racialized structures and practices on campus impact their campus belonging. The study found three themes:

1. Before completing the CEWE, students defined equality and equity interchangeably with fairness.
2. While completing it, students showed surprise at the variety of on-campus student resources.
3. After completing the CEWE, students identified inclusion and exclusion experiences on campus based on their social identities.

This study describes how students utilized the CEWE to document their sense of belonging in physical university spaces before COVID-19. The study provides a fascinating case study for university leaders interested in utilizing student-centered assessment to re-examine and modify post-pandemic college students' physical spaces (The Chronicle, 2020). Further, anyone involved in ePortfolio design, curricular development, and critical pedagogies (Freire & Ramos, 1970) may benefit from an equity-minded ePortfolio design. Similarly, faculty benefit from seeing a real-world example of a critical hands-on activity focused on students' equity-minded learning. Motivated by the need to describe what first-year students learned from an on-campus physical walkthrough, the co-authors collected pre-learning surveys and students' completed CEWE learning ePortfolios for three consecutive spring quarters (2017, 2018, and 2019). In this chapter, we begin by describing why co-author Fernández created the CEWE after University Studies revised its twenty-year-old diversity learning goal in 2016—now the Diversity, Equity, and Social Justice learning goal (Fernández et al., 2019). We then identify the study's three main themes. Next, we discuss how this CEWE

ePortfolio shifts students' critical analysis of university spaces. Throughout, we suggest ways that educators and university leaders may use the CEWE as a student-centered assessment tool when examining and modifying physical spaces for the post-pandemic college. Finally, we suggest that the CEWE is one way to decenter Eurocentrism in ePortfolio thinking (i.e., in curriculum and design) so that diverse students utilize ePortfolios to reflect on their cultural wealth to transform the university.

Definition of Terms

"CEWE" refers to a digital Campus Equity Walkthrough Evaluation, a term coined by co-author Pirie. The 2017 digital version of the CEWE by Fernández is based on a 2015 paper-based Student Equity Walkthrough Evaluation Tool by Dr. Veronica Keiffer-Lewis, then-department chair of International, Peace, and Justice Studies, De Anza College (Cupertino, CA). The paper-based walkthrough tool is used here with written permission. Between 2016-2017, co-authors Pirie and Lawrence utilized PebblePad, Portland State University's centrally supported ePortfolio platform, to adapt the paper-based walkthrough evaluation into the CEWE.

We define an "ePortfolio" as a single digital document containing evidence of the authors' accomplishments, experiences, and reflections (Garrison & Ring, 2014). "Learning ePortfolios" refers to ePortfolios that surface learning through self-reflection, monitor growth over time, and act as a means of understanding and developing intellectual and digital identity (Chen, 2016).

“Equity-mindedness" refers to a concept created by the University of Southern California's Center for Urban Education to describe "actions that demonstrate individuals' capacity to recognize and address racialized structures, policies, and practices that produce and sustain racial inequities” (Bensimon & Malcom, 2012; Center for Urban Education [CEU], 2021; Dowd & Bensimon, 2015).

The “Office of Academic Innovation (OAI)” refers to a centralized team of academic professionals supporting and fostering teaching and learning communities at Portland State University.

“Self-reflection” (also known as self-authorship) refers to the capacity of learners to “internally define a coherent belief system and identity that coordinates mutual relations with others” (Baxter Magolda & King, 2004, p. 8).

“Student-centered teaching,” also known as “learner-centered teaching,” refers to a teaching philosophy that shifts the instructional focus from the educator to the student, including active learning, cooperative learning, and inductive learning (Felder, 2016). “Transformational learning” refers to a teaching philosophy whereby faculty establish a shared vision for courses, challenge and encourage students, personalize attention and feedback, create experiential lessons outside the classroom, and promote reflection opportunities (Slavick & Zimbardo, 2012, p. 571).

“University Studies” refers to Portland State Universities’ general studies program, including Freshman (FRINQ), Sophomore (SINQ), and Senior Capstone courses built on four learning goals (Hamington & Ramaley, 2019).

The term “walkthrough” (also “reflective or learning walkthrough”) generally refers to principals observing teacher-student relationships in classrooms (Archer, 2005). However, this study’s “walkthrough” refers to college students walking the campus’s physical space without faculty present and while answering equity-minded questions using the CEWE.

Institutional Context

Co-author Fernández initiated this study as part of his inaugural role as diversity, equity, and inclusion (DEI) coordinator (2017-2020) in University Studies. In 2017, then-University Studies Executive Director Dr. Maurice Hamington created the DEI coordinator position to aid faculty after the faculty senate’s 2016 approval of University Studies’ revision of a twenty-year-old diversity learning goal—now called the Diversity, Equity, and Social Justice (DESJ) learning goal. The revised learning goal now reads, “Students will explore and analyze identity, power relationships, and social justice in historical contexts and contemporary settings from multiple perspectives” (Fernández et al., 2019). Given that as DEI coordinator, co-author Fernández was also teaching first-year courses, he created the CEWE in 2016 to help students describe their equity-minded learning and become familiar with the revised DESJ learning goal.

This research was conducted within one academic unit, University Studies, and exclusively with first-year students taking a yearlong course taught by co-author Fernández. All students in this study were enrolled in co-author Fernández’s

Immigration, Migration, and Belonging (IMB) FRINQ, a course theme he co-designed in 2014.

Literature Review

ePortfolio Thinking as Transformational Learning in University Studies

University Studies utilizes high-impact practices that build upon the experiences and beliefs their learners hold, including first-year seminars, common intellectual experiences, learning communities, collaborative assignments and projects, diversity/global learning, and ePortfolios (Kuh, 2008). Such high-impact practices can support transformational learning stages (Hamington & Ramaley, 2019; White, 1994). The literature on transformational, student-centered teaching focuses on reframing the learning process from being faculty-centered to student-centered. Such educators provide students with guided opportunities to interact and learn from each other (Cunningham, 2012; Kolb, 1984; Mezirow, 1981; Millis, 2010; O'Sullivan, 1999, Weimer, 2013.) Transformational learning is typically aimed at reflection and student-centered pedagogies. Although O'Sullivan's (1999) expectations for transformational learning require students to understand "relations of power" and "interlocking structures of class, race and gender" (O'Sullivan & O'Connor, 2016, p. xvii), it is not clear how students first become aware of such interlocking structures in classroom assignments. The set of equity-minded questions in the CEWE is one way for students to become aware of such interlocking structures in first-year seminars.

Utilizing ePortfolios to Assist Students' Identification of Racialized Structures and Practices

The existing literature on confronting equity issues in higher education (i.e., reducing academic gaps for racial and ethnic groups) mainly focuses on how university leaders, staff, and faculty can implement institutional change. Such change asks leaders to identify racialized structures, policies, and practices on campus (Bensimon & Malcom, 2012). Scholars discussed that identifying such racialized structures would create campus-wide Diversity Scorecards—as first coined and developed between 2001 and 2005 by Marta Soto, Georgia Lorenz, Michelle Bleza, Melissa Contreras-McGavin, and Lan Hao (Bensimon & Malcom, 2012, p. 7). In 2005, the Diversity Scorecard was renamed *Equity Scorecard* to underscore the original developers' intent to focus on racial equity (Bensimon & Malcom, 2012, p. 8). More recently, the University of San Diego further developed the Equity Scorecard by framing it as a set of twelve questions for campuses to create a "practice of Equity Minded Indicators" (CEU, 2021). Although university communities benefit when leaders attend to campus-wide equity-minded indicators and adopt university-specific Equity Scorecards, a literature gap persists when describing student-centered *and* equity-minded campus assessments.

The literature on documenting learning with ePortfolios demonstrates how keeping ePortfolios enables students to collect work overtime, reflect upon their personal, academic, and career growth, and make connections across various educational experiences (Light et al., 2012; Reynolds & Patton, 2014; Yancey, 2019). Such literature

generally identifies the "e" in ePortfolio as *electronic* to signify its electronic or digital medium (Reynolds & Patton, 2014, pp. 101-02). The "e" is also understood as *evidence of experiences* to document students' educational career-related skills to help them develop "opportunities for career and professional development" (Light et al., 2021, p. 124). Additionally, the "e" is understood as examining self and self-*efficacy* to help ePortfolio creators identify their overlapping societal identities and discover their whole self (Carey, 2016; Fisher, 1994; Taylor, 2020). However, while the literature describes essential academic, professional, and personal learning associated with creating ePortfolios, there is less understanding of how ePortfolios assist users in documenting their knowledge of *equity-mindedness* on campus—the missing "e" in ePortfolio.

In University Studies, the literature on its ePortfolio student learning curriculum also describes how this general studies program utilizes first-year student ePortfolios to annually assess its general education learning goals (Reitenauer & Carpenter, 2018; Reynolds & Patton, 2014, pp. 13-14). Despite University Studies' long history with using portfolios to assess—in part—its program (University Studies Annual Assessment Reports: 2005-2017, 2021; White, 1994, p. 207), there is less literature addressing how individual University Studies' faculty utilize ePortfolios to describe students' equity-minded learning.

Utilizing ePortfolios to Develop Students' Self-Reflection and Describe their Campus Belonging

The existing literature describes how the ePortfolio process is a high-impact practice that supports students' self-reflection by documenting their personal and academic growth (Kuh, 2008; Reynold & Patton, 2014; White, 1994). However, there is less understanding of how embedding equity-minded questions in self-reflection assignments help students develop self-reflection practices and discuss their sense of campus belonging with peers.

Although many areas across campus offer support services, a student's willingness or desire to access these services on campus can be impacted by having a sense of belonging or a sense that they do not belong (Strayhorn, 2018). Moreover, students report that their sense of belonging can be larger when they socialize with peers whose backgrounds and social identities differ from their own (Maestas et al., 2007). The factors that influence students' sense of belonging include peer interactions, peer mentoring, and faculty encouraging positive interactions among students in learning communities (Kuh et al., 2005). However, comparatively little is known about differences in college students' sense of belonging related to their social identities and campus environments that can support that sense of belonging (U.S. Department of Education, 2006).

Methodology

The Internal Review Board (IRB) for the Protection of Human Subjects of Portland State University approved this study. The data collected span three spring terms (of 11 weeks each), collected once every year. The data set included a Pre-Learning

Survey (2018, 2019; n = 45) and direct responses to the CEWE itself (2017, 2018, 2019; n = 48). At the beginning of each spring term, students completed a pre-learning survey. Students walked to specific campus areas in small groups during weeks 4-5 of the spring quarter (generally three to four students). Co-author Fernández, this study's instructor of record, generated a list of possible areas for the group to visit, including but not limited to student resource spaces (e.g., Queer Resource Center, Veterans Resource Center, Women's Resource Center), athletic buildings, the library, and specific building areas associated with disciplines (e.g., Math, Engineering). The walkthrough consisted of students individually answering short-answer questions and completing one summative essay in the CEWE. By week 11 (Portland State University's finals week), each student submitted their individually completed CEWE.

Three sets of data were collected:

1. An anonymous pre-learning survey containing five questions: (a) Define "belonging," (b), Describe an experience of belonging, if at all, on-campus, (c), Describe an experience of not belonging, if at all, on campus, (d) Define "equality," and (e) Define "equity."
2. Responses to CEWE's short-answer questions.
3. One summative essay—also in the CEWE.

To reduce visual bias when assessing the ePortfolios' media (e.g., images and video), only the text in pre-learning survey answers and summative essays were coded. To reduce educator-related bias given co-author Fernández's role as educator and research

designer, co-author Lawrence was invited to code as he did not teach or implement the CEWE.

Data Analysis

Data analyses included in vivo coding (also known as "verbatim coding," "natural coding," or "emic coding") and open coding (Saldaña, 2016; Seidman, 2019). In vivo coding consists of utilizing participant-generated words or short phrases from "the actual language found in the qualitative data record" (Saldaña, 2016, p. 105). Open coding consists of looking for patterns and themes in the transcriptions of responses to preliminary learning surveys, CEWE's short-answer prompts, as well as CEWE's summative essay. This study utilized Luborsky's (1994) thematic analysis to isolate prominent themes and interpret the analysis categories. We conducted constant comparative data analysis (Glaser & Strauss, 1967). We ensured triangulation using data from three data sources: 1. a pre-learning survey, 2. short-answer questions in the CEWE, and 3. summative essay. The co-author/participants utilized triangulation in this study to improve internal validity and establish the study's trustworthiness (Merriam & Tisdall, 2016; Taylor et al., 2015).

Results

The study found three themes:

1. Before completing the CEWE, students defined equality and equity interchangeably with fairness.
2. While completing it, students showed surprise at the variety of on-campus student resources.

3. After completing the CEWE, students identified inclusion and exclusion experiences on campus based on their social identities.

The co-authors did not alter grammar or punctuation when sharing student-generated responses.

Theme 1: Students Define Equality and Equity as Fairness

When students defined both equality and equity in their pre-learning surveys, they did so primarily using the words "fair" and "fairness." Moreover, students' definitions of equality and equity were nearly interchangeable. See Table 1.

Table 1

Sample Pre-Learning Survey Responses to "Define Equality," "Defining Equity"

Question: Define equality	Question: Define equity
• "Providing fair, unbiased, and proportional opportunities for all people no matter race, gender, religion, or other attributes." • "Fairness for everyone." • "Everyone being at the same level making everything fair."	• "Being fair." • "Fairness." • "Being fair, everyone getting equal treatment."

Table 1 Sample Pre-Learning Survey Responses to "Define Equality," "Defining Equity"

Out of the 45 pre-learning survey participants across the study's three years (2017, 2018, and 2019), only one student defined equity as distinct from equality. For the survey question "Define Equity," this particular student wrote: "Acknowledging the disadvantages of some in society and providing more resources and help in order to achieve the same opportunities as those without certain disadvantages."

Theme 2. Students Show Surprise at the Variety of On-Campus Student Resources

Students showed surprise at the number of student resources available to them. One student wrote:

> The experience of walking through the building, for me, was very important because in my first year, I only travel to the buildings that my classes are held, which none of them were in SMSU [Smith Memorial Student Union] all year. Seeing all of the resources that are available on campus really made me feel like PSU was inclusive to me.

Additionally, students showed surprise at the number of resources for peers they identified as belonging to different cultural backgrounds and identities. One student wrote:

> After we gathered all the information we needed and finished the evaluation by answering questions on the worksheet, we were surprised that there were actually a lot of resources available for students with different cultural backgrounds, different gender or disability needs. Before we did the walkthrough, most of us just naturally ignored these elements because these resources are not the ones that

we need every day. However, even if they are not useful for everyone, they are indispensable for a certain amount of people.

Theme 3: Students Recognize their Inclusion and Exclusion on Campus

In their summative essays on completing the CEWE, some students identified themselves according to their social backgrounds. In the example below, a student self-identifies as Mexican and describes how some university spaces were welcoming given their Mexican identity:

> Besides feeling a bit weird at first, it was a good experience that taught me stuff I probably wouldn't know or learn on my own. I enjoyed working on worksheet two because we could see how different parts of campus have different racial equity. Some parts of campus were far more welcoming and inclusive of the different cultures while other parts of campus weren't oriented towards that aspect. I enjoyed working in a group because I could see how people of different cultures saw the racial equity. For example, I am Mexican and I may see a certain aspect of campus to be bad or good. Whereas, a member of my group might see it different because of his cultural background. I thought that was cool and interesting because different cultures have different ideas about what it means to be equitable.

Discussion

The study's data suggests that the Campus Equity Walkthrough Evaluation (CEWE) ePortfolio shifts first-year students' definition and understanding of equity on

campus in three ways: 1. First-year students identify racialized structures and practices on campus; 2. The equity-minded ePortfolio framework develops students' capacity for self-reflection; and 3. Students determine that their sense of campus belonging is impacted by racialized structures and practices on campus.

Students Identifying Racialized Structures and Practices on Campus Shifts their Definition of Equity

The Campus Equity Walkthrough Evaluation (CEWE) ePortfolio shifts first-year students' understanding of equity-mindedness. Before completing the CEWE, first-year student participants generally defined equality and equity interchangeably by using fairness as their foundation of reasoning. The co-authors could not locate other studies surveying how contemporary American college students define equality and equity. Given this research gap, we cannot discuss how comparable university student groups define such terms interchangeably. However, some studies demonstrate how some social scientists, university leaders, and faculty use equality and equity interchangeably. For example, Espinoza points out how some scholars use equality or equity interchangeably when defining distributive justice—i.e., how societal members share benefits and burdens (Armstrong, 2012). Espinoza concludes that such practice results in "ambiguity and confusion among those social scientists using these concepts" (2007, p. 359). More recently, however, American high school teachers and principals demonstrate the importance of defining equality and equity as distinct in creating culturally-specific programming for underserved students:

> Educators say that equity in education is not the same as equality. While students should have equal access to high-quality teachers and school leaders, as well as instructional resources, equity means that each student has the individual supports needed to reach his or her greatest potential. (Scholastic, 2020)

Indeed, university leaders and educators often define equity as distinct from equality (i.e., equity gets at providing specific institutional support for students to achieve their "greatest potential"). Other scholars further point out, though, that minoritized students will continue to underachieve in university classrooms. Leaders must further differentiate between types of equity: representational equity and academic equity to reduce their achievement gaps. For example, even if schools and universities change policies to support representational equity (e.g., in culturally-specific recruitment, the examination of affirmative action, and diversification of the student body), such overarching policies may not always support diverse students' academic equity in the faculty-to-student classroom dynamic (Bowen & Bok, 1998). Such scholars ask how faculty member's classroom practices—and their assumptions, beliefs, and values about diverse students—"have great implications for academic equity" for racialized students (Robinson-Armstrong et al., 2002, p. 76).

It is vital for education leaders and faculty to define equality as distinct from equity to guide representational equity (university-wide programming) and academic equity (in the classroom). What is missing from such campus equity discussions is why college students need to define equality and equity as distinct in the first place. So much

of the campus equity discussion is centered on university leaders, faculty, and staff transforming the university through Diversity Scorecards, Equity Scorecards, and equity-minded indicators (Bensimon & Malcom, 2012; CEU, 2021).

In University Studies, one answer to this query is curricular. As a faculty member in University Studies, co-author Fernández co-created the CEWE so that students could apply University Studies' Diversity, Equity, and Social Justice (DESJ) learning goal to a campus setting and help them distinguish between equity and equality. In essence, the CEWE asks students to frame their experiences of evaluating campus spaces by asking them to center their attention on their social identities and then on social identities dissimilar to their own. The CEWE's dual framing is guided by Dewey's injunction that, "To form relevant and effective ideals we must first be acquainted with and take notice of actual conditions. Otherwise our ideals become vacuous or else filled with content drawn from Utopia" (Dewey, 1986/2008, p. 97). Similarly, the CEWE's dual framing approximates the intentions behind Bridgman's "invited ePortfolio." In such ePortfolios, students negotiate "new knowledge, new identities, and new communities largely through building their portfolios and engaging in the reflection that accompanies this building [i.e., building an ePortfolio]" (2019, p. 192).

In University Studies, a second reason why students need to understand the term equity for themselves is pedagogical. University Studies' teaching philosophy focuses on an interdisciplinary, student-focused approach. University Studies' Mission reads, in part: "Our inclusive, interdisciplinary, and inquiry-based pedagogy . . . provokes students to

build self-efficacy through relational learning across difference" (Hamington & Ramaley, 2019, p. 305). This CEWE also provokes students to build self-efficacy (Carey, 2016; Fisher, 1994). For example, the faculty is not present to guide their initial reflections. Instead, students discover their equity-mindedness with peers through individual and communal reflections of their campus observations. In this way, the CEWE is one way for faculty to resist a banking model of education (Freire, 1970, p. 80). In such a banking model, faculty would create important lectures and classroom discussions on equity-mindedness.

A third reason—perhaps the most important one for university graduates—is that the CEWE can inform how they will evaluate non-university systems (e.g., work settings, places of commerce) as equitable for diverse cultures. Without a doubt, embedding a learning ePortfolio with an equity-minded lens is one way to teach students how to read the world around them in a new way. Idealistically, co-author Fernández co-created the CEWE so that students could experience Freire's notion of reading the world and word (1987)—albeit in a campus setting. For Freire, to transform the world—and later the word (e.g., policies, structures, practices)—individuals must first be conscious of what they see, work to transform it, and continuously re-examine their perspectives. Freire writes:

> Reading the world always precedes reading the word, and reading the word implies continually reading the world. [. . .] In a way, however, we can go further and say that reading the word is not preceded merely by reading the world, but by

> a certain form of *writing* it or *rewriting* it, that is, of transforming it through conscious, practical work. For me, this dynamic movement is central to the literacy process. (p. 35)

Foundationally, this CEWE brings together Freire's notion of reading and rewriting the world with Bensimon's institutional change model focused on individuals' awareness, interpretation, and action steps to change systems (Bensimon, 2004). As an illustration, the following student described their experience of completing the CEWE as challenging one-perspective-only world views held by faculty and college students alike: "We, meaning college students and professors, tend to fixate on one perspective or another, when great insight and understanding can come from listening to perspective [*sic*] that oppose our own or the perspectives of those who often go unheard." With such words, the student echoes Pasquerella's aspirations for higher education: Universities should prepare students to "think critically, engage in ethical decision making, and work in diverse teams to address the complex, unscripted problems of the future" (Pasquerella, 2018, p. viii).

The CEWE is an example of an authentic and intentional learning assignment (Herrington et al., 2014) focused on shifting students' understanding of equality and equity through the action of walking campus (or "reading" the campus, Freire, 1987). Dewey reminds educators that the material of thinking is action (e.g., walking the campus), as compared to thought (e.g., defining "equity" in classroom lectures): "The material of thinking is not thoughts, but actions, facts, events, and the relations of things.

In other words, to think effectively one must have had, nor now have experiences which will furnish . . . resources for coping with the difficulty at hand" (Dewey, 1916, pp. 156-157). In their summative essay, one student noted how walking around campus helped them discover racialized structures on campus for minoritized students (e.g., La Casa Latina, Pan-African Commons) and non-racialized structures (e.g., Queer Resource Center, Veteran's Resource Center, Women's Center). One student wrote:

> For my group, we walked through [the] SMSU [Smith Memorial Student Union] building. After we gathered all the information we needed and finished the evaluation by answering questions on the worksheet, we were surprised that there were actually a lot [of] resources available for students with different cultural background[s], different gender [*sic*] or disability need [*sic*]. Before we did the walkthrough, most of us just naturally ignored these elements because these resources are not the ones that we need every day.

Other students described their equity-mindedness shift by examining, instead, on-campus racialized practices (i.e., cultural practices, such as university-specific symbols). Such students examined the university's mascot, the so-called Victor E. Viking: a White- and male-presenting figure with a full beard and a grey helmet with two lateral horns pointing up (Portland State University, n.d.). After completing the CEWE, a student determined ways that the university's mascot included and excluded university students:

> For example, while I was looking at the Vikings logo for Portland State, I never thought about inclusivity nor diversity. I found that the logo itself wasn't really a

> limitation for me nor was it particularly offensive. *But just because I'm not offended by a certain symbol, that doesn't mean someone else isn't.* It is through that level of analysis that needs to be made in order to achieve social justice and equity [. . .] After doing this work [completing the CEWE] for 10 weeks, I am able to see that there is still much to be done. (Our emphasis.)

When the student above writes that "just because I'm not offended by a certain symbol, that doesn't mean someone else isn't," they are making use of an equity-minded lens as defined by Bensimon & Malcolm (2012). In short, the student recognizes that a mascot is a racialized cultural practice. That racialized recognition remains hidden until students utilize an equity-minded lens to uncover a symbol's racialized underpinnings.

Students Developing their Self-Reflection Practice by Responding to Equity-Minded Questions

This study suggests that a guided equity-minded evaluation framework develops students' self-reflection, what other scholars call "self-knowledge." For Reynolds & Patton, ePortfolios promote self-knowledge or metacognition, i.e., the action of "thinking about one's thinking" (2014, p. 98). Similarly, the CEWE aligns with ePortfolio scholarship that demonstrates that students need to understand where their knowledge about the world comes from and "how they have come to know what they know but also apply that knowledge in a changing world" (Light et al., 2012, p. 11). To that end, the CEWE asks students to question their understanding of the world around them (i.e., the

campus) by asking them to identify racialized structures and practices. After completing the CEWE on the university mascot, another student wrote:

> When discussing the logo [the Viking mascot] and whether it is inclusive or not, I got to hear from classmates who aren't my own race and hear their own perspectives. For me personally, I did not have a problem with the logo and thought it was fine, but could understand why other people might have a problem with it.

This student describes how the CEWE created a space for them to identify their social position ("my own race"), recognize other cultural groups, and engage with diverse peers to examine a cultural symbol. The student illustrates a promising aspect of the CEWE: student participation in conversations about "race" and racism that acknowledge how such discussions are challenging and courageous for American educators and students (Kite et al., 2021; Singleton, 2015). Additionally, educators face other challenges: outright bigotry in the classroom (e.g., homophobia, racism, sexism, transphobia) and silence from students when such faculty introduce such topics. For example, Goldstein (2021) describes how some students remain silent in classrooms because they are "tired of having to explain prejudice to those who just don't understand" (2021, p. 17). Others stay silent because they are afraid to offend or do not know what is politically correct to say since it "changes constantly" (p. 17).

CEWE is one tool for addressing such silences among various students. The student cited above is taking risks talking to students from other "races" while

examining—in community—a racialized practice (i.e., the university's mascot). Reynolds & Patton describe risk-taking in ePortfolio learning as students "marveling in seeing what they know and understand when they look at their own ePortfolio as an observer" (2014, p. 99). In short, by documenting their knowledge, CEWE allows students to become observers of their understanding of on-campus exclusion and inclusion in dialogue with diverse peers.

Re-Examining the "Self" in Self-Reflection: CEWE's Focus on Communal Reflection

The literature on developing students' self-reflection capacity through ePortfolio learning commonly focuses on individual risk-taking (Reynolds & Patton, 2014), exploration of experiences for career and professional development (Light et al., 2021, p. 124), and self-efficacy to discover the whole self (Carey, 2016; Fisher, 1994; Taylor, 2020). However, our findings suggest that asking equity-minded questions also develops students' capacity for self-reflection by focusing, instead, on diverse students' cultural wealth as the lens through which to evaluate what they know about themselves and their surroundings. In their summative essay, one student recognized how the CEWE allowed them to compare "racial problems" between their country of origin (China) and the United States:

> Being born and grown up in China, I did not have a sensitive mind for racial and ethnical problems. *And it was not a natural for me to relate these problems to myself.* But the Equity Lens [i.e., the CEWE] taught me how to develop critical

> thinking and be able to seek out the unequal corner of the society, especially in the United States, which has large ethnical diversity. (Our emphasis.)

The student's self-reflection that "it was not a natural [*sic*] for me to relate these problems to myself" should alert ePortfolio educators about Eurocentric notions of Self prevalent in self-reflection assignments. In other words, if ePortfolio educators are to invite diverse, minoritized students to develop their self-reflection practices, such a curriculum needs to be culturally-inclusive. Accordingly, such a curriculum needs to address Eurocentric notions of knowledge creation and production grounded in the self as separate from the community. Delgado Bernal names that separation "the dominant-Euro-American epistemology" (1998, p. 107).

For example, many world cultures view the self and the creation of knowledge as relationships among individuals, their communities, extended families, queer families and kinships (Bernstein & Reimann, 2001), and other intentional communities organized around a shared history, memory, and cultural intuition (Yosso, 2017, p. 123). To disrupt Western notions of *self*-reflection as separate from communal reflections, the CEWE asks students to consider how their social position and intersectionality (Crenshaw, 1991) on campus compares with other students' social locations. Thus, such a collaborative, reflective practice invites minoritized students to honor their cultural wealth. For instance, suppose students determine—in comparison with others—that they do not see themselves in some university spaces. As part of the communal reflection, they can honor how their culture's resistant capital afforded them the coping mechanisms to navigate

such spaces. Yosso defines “resistant capital” as the “knowledges and skills fostered through oppositional behavior that challenges inequality” (Yosso, 2017, p. 125). For educators to invite self-communal reflections on challenging inequality, the reflective prompts must create minoritized students’ spaces to name their cultures’ resistant capital. In short, what if students utilized ePortfolios to reflect on their cultures’ legacy of resistance to subordination (Deloria, 1969).

To further invite minoritized students to develop so-called self-reflection practices, equity-minded questions also need to be the foundation of such practices. Without equity-minded questions, self-reflection practices are ahistorical and colorblind. Alternatively, self-reflection practices build on equity-minded questions acknowledge how racialized structures, policies, and practices impact students' self-development in (and outside) academe. The CEWE is one tool for students to develop their self-reflection practice as an ongoing practice that recognizes how racialized structures and practices exist in their surroundings and may impact their sense of self in such surroundings. In this way, so-called self-reflection practices grounded in equity-minded questions help all students view self-knowledge—and knowledge systems—as contextual. The CEWE, then, gets at students evaluating their learning through an “epistemological foundation" lens, whereby students view knowledge as contextual. Moreover, the CEWE helps students construct, evaluate, and interpret judgments "in light of available frames of reference” (Magolda & King, 2004, p. 8). The CEWE provokes students to evaluate such

available frames of reference by examining whether such frames are racialized and produce and sustain racial inequities (Bensimon & Malcom, 2012).

Leveraging Equity-Minded Questions to Describe Students' Campus Belonging

The study suggests that completing the CEWE helps students determine how their sense of campus belonging is impacted by their individual and collective understanding of campus racialized structures and practices. A significant difference between standard evaluative tools describing students' campus belonging and the CEWE is that this learning ePortfolio allows students to compare their sense of campus belonging with peers (Strayhorn, 2018). Additionally, the CEWE provides an outlet for students to share results with various changemakers across the university. Most campus belonging evaluative tools do not employ students' equity-minded experiences. In essence, such evaluative tools on campus are often unidirectional. In general, students complete campus surveys generated by in-house (or outsourced) research agencies.

Moreover, select students may further participate in campus belonging surveys by participating in focus groups and answering pre-generated prompts. University researchers and leaders then make sense of such student-generated data. Although such standardized tools are essential for demonstrating a university's ongoing examination of its operations for students' social and academic wellbeing (and for university funding and accreditation purposes), such evaluative tools are not particularly student-centered (Maestas et al., 2007).

Another critical difference between standard evaluative tools describing students' campus belonging and CEWE is introducing students to an institutional change model—specifically an equity-minded change model (Bensimon, 2004). To this end, CEWE encourages students to act upon their campus observations. After completing the CEWE and sharing findings with their peers, students can submit a final report to campus leaders. For example, students concerned about the university's mascot may send their CEWE results to the president's office or the university's trustees' board.

Given that the CEWE creates a space for students to describe their inclusion or exclusion on campus, this tool is one effective way of centering students' experiences as evidence to support and modify the resources already in use on campus. Despite how universities offer services in many areas across campus, students' sense of belonging impacts their willingness to access campus services (Strayhorn, 2018). The CEWE is also one tool for diagnosing why some students may not access academic and student-support resources in the first place.

Leveraging Equity-Minded Questions to Decenter Eurocentrism in ePortfolio Thinking

As noted throughout this chapter, one aspiration behind the CEWE is bringing systemic change to a university campus guided by ongoing student-centered, equity-minded evaluations. Another aspiration behind the CEWE is decentering Eurocentrism (i.e., Delgado Bernal, 2002) in ePortfolio thinking (i.e., in curriculum and design). Texas A&M-San Antonio (A&M-SA), a Hispanic Serving Institution, provides one case study

of decentering Eurocentrism in ePortfolio thinking. Bridgman describes how A&M-SA created culturally-relevant ePortfolios to support learning in their borderland classrooms (i.e., classrooms where "multiple communities and sources of knowledge intersect," Bridgman, 2019, pp. 191-192). To build students' self-reflection practices about themselves and their memberships across communities in borderland classrooms, ePortfolios became one tool for diverse students to invent themselves. At the same time, such students co-invent their universities, a process that is central to borderland classrooms and ePortfolio curricula (Yancey, 2009, p. 6). Additionally, scholars such as Bridgman advocate for a more culturally-relevant framework when designing and assigning ePortfolios to diverse students:

> A broader framework for conceptualizing an ePortfolio curriculum . . . is provided by scholars across a range of fields, including borderlands and Latinx studies. This work, for example, underscores the importance of the ePortfolio curriculum's acknowledgment and affirmation of students as creators of knowledge and negotiators of community. (2019, p. 194)

ePortfolio educators must recognize the multiple ways of knowing and valuing diverse students brought to classrooms. Likewise, educators must recognize that such diverse values are often at odds with higher education's dominant culture. Rendón et al. (2015) point out that university culture often clashes with students' diverse values: "Further, the world of college includes academic values and conventions such as merit and independence, along with specific formal and informal forms of language expression,

codes of behaviour, and belief systems, which are often foreign to first-generation, low-income students" (pp. 97-98). The CEWE is one ePortfolio example focused on describing and valuing students' knowledge of the campus *because* of their cultures.

Additionally, the CEWE places front and center students' cultural wealth (Yosso, 2017) as the lens to describe their campus. For example, in completing the CEWE, some students demonstrated their cultural wealth in "navigational capital." Yosso defines navigational capital as the ability "to maneuver through institutions not created with Communities of Color in mind. . . . Navigational capital thus acknowledges individual agency within institutional constraints" (Yosso, 2017, pp. 124-125). In their summative essay, one Latinx student described their navigational capital when experiencing frustration with first-year classmates:

> It [the first-year Immigration course] opened my eyes to things I didn't see on campus before. I wasn't aware of how students were so closed-minded about the course, and how disrespectful they were because of the unlikelihood to see a Latinx professor at such a "diverse" college.

Interestingly, co-author Fernández never asked participants to use the CEWE to evaluate university courses. Unfortunately, this Latinx student's experience echoes research on how university students often evaluate minoritized faculty's teaching and content knowledge negatively (Evans & Moore, 2015). We acknowledge this student's frustration and resilience. Furthermore, this student inspires us to utilize CEWE in alternative ways.

We ask ourselves: What if faculty assign the CEWE to identify and address racialized structures, policies, and practices in our very own classrooms?

Limitations

While there is much to be gained from a qualitative research study focused on a single class of students, some limitations should be noted. First, a study conducted by the educator researcher may limit the ability to generalize these findings to a larger, more diverse group of students and faculty. Another possible limitation pertains to the use of qualitative methods alone. Conducting a single research design study rather than employing a mixed-methods approach can limit the study's reliability and objectivity. Although the co-authors took steps to avoid researcher bias, such as anonymous surveys, the authors still worry that the possibility of bias exists in the review of the CEWEs themselves. This study was designed and implemented by a single faculty member to describe the depth of understanding of first-year students' experience on a college campus. These limitations should be taken into account and addressed in future studies as described below.

Implications

While we are optimistic about this study's results, which suggest a shift in first-year students' definition and understanding of equity-mindedness on campus in multiple ways, there would be a benefit to extending this study and gathering more data on using the CEWE. Notably, a larger sample size and more diverse classroom settings utilizing a mixed methods design would elucidate any potential bias in the current study. We would

also like to revisit this study and its participants to gather longitudinal data to determine the long-term implications of completing the CEWE. For example: How did the CEWE impact access to student resources and support structures? Did students act as a resource for classmates who may have felt excluded as they have felt? Further, what impact, if any, did their equity-mindedness have on their confidence to access resources and use their voice to address racialized inequities?

Conclusion

This study sought to understand first-year undergraduate students' experiences completing an on-campus physical campus walkthrough. The CEWE has the potential to shift first-year students' understanding of equity-mindedness in multiple ways. Using the CEWE allowed students to re-envision the campus and identify racialized structures and practices in it. The CEWE experience was vital because it empowered first-year students from diverse backgrounds to bring to the self-reflection aspects of their cultures through a reflective, learning ePortfolio embedded with equity-minded prompts. This study suggests that this new-found confidence is crucial for first-year students' ongoing success in college. Phrases in the CEWE such as "I would share this with Student Government . . . ", "I would share this with other campuses . . . ", and "These tools will help me continue to question the world around me . . . " suggest that helping students practice an equity-minded self-reflection of campus will have a far-reaching impact in the Portland State University community and beyond. Striving for systemic change is at the core of what modern educators do.

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Conclusion: Higher Education and Innovative Practice

Higher education has been working toward balancing instructional techniques and learning theories with new innovative technologies and practices, yet it remains consistent that selecting and applying technologies that may result in advancing innovative practices, and that also support student engagement and curriculum revisions, have proven challenging. We currently are navigating higher education in a COVID climate where we are essentially required to have the ability to communicate and interact meaningfully with one another outside of our previously physical learning environments. Aside from the multiple reasons why we undertake innovative practices, how we have been going about doing so is another matter altogether, and as a collective group of higher education practitioners, "how" we participate with technology and innovative processes as a set of members that form organizational 'social systems' are even less well understood (Bringle et al., 2009; Hasanefendic et al., 2017; Hoidn et al., 2014).

The historical relationships between technology and higher education practices make these three case studies that provide a window into platform and digital tool selection, procurement, implementation and assessment of their use critical for learning about and diffusing excellent technologies to support student centered pedagogy. To facilitate advances in technology use in higher education, leaders have sought to create opportunities for faculty, staff and students to experiment and design new learning environments. (e.g. Gaimaro et al., 2019; Hart et al., 2016; Henard, et al., 2000; Knight 2011). Such research, programs, initiatives and directives are meant to fuel the diffusion of innovative practices and technology use on higher education campuses.

At Portland State University (PSU), the reThink Provost initiative is one example of an opportunity to gather innovative ideas from its stakeholders (i.e. Rogers 'social system', 1995) and implement those ideas in a supported and funded environment. The reThink PSU project was a campus-wide effort to deliver a liberal education that serves more students with better outcomes, while containing costs through curricular innovation, community engagement, and effective use of technology (ReThink PSU, 2015.).

The three papers in this dissertation are case studies of two distinct ReThink projects:

Paper 1. Wagner, E., Enders, J., Pirie, M., & Thomas, D. (2016). Supporting academic integrity in a fully-online degree completion program through the use of synchronous video conferences. Journal of Information Systems Education, 27(3), 159.

Paper 2. Reynolds, C., & Pirie, M. S. (2016). Creating an eportfolio culture on campus through platform selection and implementation. Peer Review, 18(3), 21.

Paper 3. (2023). Fernandez, O., Pirie, M., Ring, G., Lawrence, A. Leveraging a Campus Equity Walkthrough Evaluation (CEWE) ePortfolio to Assess First-Year Students' Equity-Minded Learning and Campus Belonging. (Volume) Creating Global Citizens through High Impact Practices in Education, (book series) Innovations in Higher Education Teaching and Learning (IHETL) by Emerald Group Publishing

Summary of the included papers

Paper 1. Our case study found that three main benefits of video conferencing include: faculty presence and development of personal relationship, authentication of work, and assessing student progress at regular intervals. Each of these elements are built

into the protocol of how to use video conferencing rather than being a property of the video conferencing technology itself. As such, the implementation and use of these video conferences should be seen as situated and changing over time. So too should we view the technology design as emergent over time. The protocol provides multiple opportunities for faculty members to identify and address issues of academic integrity, and our study provides insight into how specifically they do this. We endeavored to spare the reader the failures from which we learned such that the future of many forms of online instruction might be especially successful in higher education, in particular in courses teaching information technology topics.

Paper 2. While procurement of a platform was the aim of the Provost Challenge project, just purchasing a product would not be enough to support our movement beyond initial adopters. Beyond the initial procurement process, the university has invested in the new platform by centralizing services to faculty and students through OAI and OIT. This centralized support in well-established services on campus will make the integration of the new platform sustainable. In addition, we have learned the importance of maintaining and nurturing the learning community that developed in our PebblePad Academy. We have learned that we need a clear process for onboarding new projects using eportfolios and PebblePad. Learning new software and changing pedagogical practices is challenging. We are learning that to sustain and continue to grow interest and use, we must continue to promote and support new users. Our journey with eportfolios started with a focus on student learning and the development of processes that were aided, but sometimes hindered, by the lack of an easy to use, single platform. With the introduction of PebblePad, we are addressing this issue. The future, however, is dependent on how we

use this new base to further innovate and support our campus community in continuing to put student learning first. The platform remains a tool for learning; the work behind the tool is still most important.

Paper 3. This study sought to understand first-year undergraduate students' experiences completing an on-campus physical campus walkthrough. The CEWE has the potential to shift first-year students' understanding of equity-mindedness in multiple ways. Using the CEWE allowed students to re-envision the campus and identify racialized structures and practices in it. The CEWE experience was vital because it empowered first-year students from diverse backgrounds to bring to the self-reflection aspects of their cultures through a reflective, learning ePortfolio embedded with equity-minded prompts. This study suggests that this new-found confidence is crucial for first-year students' ongoing success in college. Phrases in the CEWE suggest that helping students practice an equity-minded self-reflection of campus will have a far-reaching impact in the Portland State University community and beyond. Striving for systemic change is at the core of what modern educators do.

Implications for Practice

Together these papers illustrate the power of sourcing innovative ideas from stakeholders themselves, willingness of those who participated to design, implement, and assess these innovative practices. As one can imagine, these efforts are not always easy to get underway, but as these papers illustrate, these projects provided critical progress towards innovative practices. Although the initial momentum of innovative practices are often carried by those that are inclined to innovate and are early adopters of new practices and technologies, the diffusion of the new practices and approaches with an eye to

successfully cross “Maloney’s Chasm” (Maloney’s rule of 16%) and go on to attain an early and later majority of use across the organization still proves to be an ongoing challenge (Rogers, 1995).

These three papers highlight several findings. Across all three studies the implementation and use of the emerging role of technologies should be seen as situated and changing over time. The design of the use of the technology is also a series of choices that require monitoring, evaluation, feedback and revision and will continue to shift as implementation and curricular or activity revisions occur. This places all of the ReThink PSU undertakings and initiatives within the unfolding framework of exponential and continuous change (NA. 2015). Consistently maintaining progress in such an environment can be greatly enhanced by central teaching and learning unit support such as the Office of Academic Innovation and The Office of Information Technology (Reynolds, C., Pirie, M., 2016). Progress also relies on leadership to sustain funding and attention as well as assessment and diffusion of these practices over time. Project managers proved invaluable to monitor and organize our innovative deliverables and public forums on the progress of these initiatives displayed our progress to the wider community and offered the opportunity to connect with interested participants in future work across the institution.

In addition to fiscal support and visible leadership from administration, and technical and pedagogical support from central units, these studies illustrated the importance of maintaining and nurturing the burgeoning learning community and momentum that was developed as the initiatives got underway. Initial stakeholders, innovators and early adopters are an essential piece of forward momentum and

accountability, but to sustain and continue to grow interest and use of technologies and pedagogies, continuing to promote and support new users through inclusion, mentoring and training are needed to institutionalize innovative practices (Reynolds, C., Pirie, M., 2016). Creating connections via meetings, forums, and regular reporting to and from stakeholders that maintain communication, information, progress and difficulties can hardly be overstated.

In regard to impact for learners, we learned that a centrally supported technology can alleviate faculty training and workload concerns to a certain degree, and streamline students technical support. The technologies we employed to support reflective practices and student engagement afforded our learners opportunities to make deeper connections with faculty, peers and themselves. Providing ongoing connection via video conferences and reflection through ePortfolio experience appeared to empower students from diverse backgrounds to bring to the self-reflection aspects of their cultures through reflection and connecting through peer and faculty discourse. Student voices captured across two of these case studies (Fernandez, O. et al., 2023, Wagner E. et al., 2016) suggest that helping students practice multi modal reflection via technologies will have a far-reaching impact in the Portland State University community and beyond.

These case studies also illustrate the idea that the technology or platform remains simply a tool for learning; but the work and pedagogical reasons behind the use of technologies are still the most important aspects of not only student success, but the potential longevity of the practice itself (Wagner, et al., 2016). Each case study strove to share successful approaches and implementations and spare the reader the failures from

which we learned, such that the future of many forms of instruction and its intersection with technology might be especially successful in higher education.

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Appendix: ePortfolio

This multi paper dissertation was presented as an ePortfolio. The ePortfolio format was in use from the dissertation proposal stage through the final defense.

As a way of orienting you to my portfolio contents, I encourage you to begin your review of this multi-paper dissertation ePortfolio with my welcome page, then please review my abstracts and introductions to these papers.

In this portfolio you will find pages that provide access to two completed and published papers. In addition, you will be able to review my third 3rd paper, a book chapter.

At my defense I presented brief reflections on my experience around writing each these papers, the multi paper dissertation process, and the collaborative writing format.

As a way to track my experience with human subjects I also include a page in the portfolio dedicated to my prior work with IRB processes.

Lastly, you will see I have embedded my personal portfolio within this one, which includes a brief bio, my teaching philosophy, testimonials, and an overview of my academic and professional experiences.

I hope you enjoy perusing the ePortfolio as much as I did creating it!

~ Dr. Melissa Shaquid Pirie