ATHABASCA UNIVERSITY

SUPPORTING FACULTY ADOPTION OF TECHNOLOGY AND ONLINE LEARNING: PANDEMIC INSPIRED POSSIBILITIES

BY

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A DISSERTATION

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF EDUCATION IN DISTANCE EDUCATION

FACULTY OF HUMANITIES AND SOCIAL SCIENCES

ATHABASCA, ALBERTA

DECEMBER, 2021

Approval of Dissertation

The undersigned certify that they have read the dissertation entitled

SUPPORTING FACULTY ADOPTION OF TECHNOLOGY AND ONLINE LEARNING: PANDEMIC INSPIRED POSSIBILITIES

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In partial fulfillment of the requirements for the degree of

Doctor of Education in Distance Education

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Dedication

This dissertation is dedicated to the most important people in my life. First, to my children Cameron and Samantha, I hope that observing my educational journey reminds you that you can do anything you set your mind to. I know that my pursuit of this degree has taken time away from you and your encouragement and support to follow my goals is deeply appreciated. To my husband Steve, thank you for pushing me through when I wanted to quit, for holding me when I needed to cry and for picking up some of the load to give me the time and space I needed. I look forward to the adventures we will have when I am not tied to my computer and readings. Finally, to my parents, Bernice and Terry Tebb, who instilled in me the importance of education, belief in myself and a work ethic to get things done. It is your encouragement and role modeling that gave me the confidence to do this. I love and appreciate all of you more than words can say.

Acknowledgement

Completing this degree has been such a journey and I have so many people to appreciate that have supported me along the way.

Thank you to my supervisor, Dr. Marti Cleveland-Innes, for believing in me and encouraging me even before I applied to the program. Your reputation in distance education speaks for itself and I am grateful to have had you on my team.

To my committee members, Dr. Cindy Ives and Dr. Jeanie Cockell, each of you took time to share your expertise, to guide my thinking and to influence the shape of this project. I will be forever grateful for your support. Dr. Russ Wilde thank you for your engagement, thoughtful comments and enthusiasm for my work.

To some very special colleagues, Shawn Mason, Kristie Dukewich, Lisa Gedak, and Gillian Sudlow, who served as emotional supports, thought partners, sounding boards, and editors of my writing early and late in the process. I could not have done this without you.

Abstract

Background: This dissertation reports on a mixed-methods case study that used an Appreciative Inquiry (AI) approach for a faculty development series aimed to support post-secondary educators in the adoption of technology and online delivery models. This study utilized the COVID19 shift to remote delivery which provided faculty an initial online teaching experience as an opportunity from which to reflect, vision and plan their professional development. Methodology: A concurrent parallel design was used to collect quantitative data from a pre-post series self-assessment and qualitative data from the sessions and the participant reflective feedback survey. Findings: Participants had a positive experience with the AI-based professional development, impacted by the focus on strengths and the interaction with their peers. Findings also indicate AI as a possible strategy to encourage the adoption of technology and online learning by supporting a shift in mindset, the development of a learning community, and enhancing awareness of techno-pedagogy skills. Contribution: The results offer a strategy for educational developers to use when supporting individual and group practice change and contributes to the knowledge of facilitating transformation in higher education.

Keywords: Appreciative Inquiry, Blended Learning, Educational Development, Faculty Development, Higher Education Reform, Mixed-methods, Online Learning, Pandemic Teaching

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Appreciative Inquiry (AI)

Community of Practice (CoP)

Technology, Pedagogy, Content, Knowledge Model (TPCK)

Technology Acceptance Model (TAM)

Chapter 1. Introduction

This study explored a possible approach to support the adoption of technology and online delivery models in faculty teaching practice. It utilized the COVID-19 pandemic shift to remote course delivery as an opportunity for faculty to reflect on their initial experience teaching online as a means to plan for future practice change. This chapter outlines the background related to the need for change in higher education, technology, and online delivery models as a path to meet the needs of future learners, and the important role faculty and educational developers play in the achievement of change. It also describes the researcher's positioning as an educational developer and an Appreciative Inquiry (AI) facilitator and how this project came to fruition. It asserts that current educational development practices are insufficient to support individual-level change, ultimately impacting the higher education system. Finally, it introduces AI and its foundation in organizational development and provides rationale for its use in educational development. Subsequent chapters explore the literature, describe the research methodology, discuss the findings, and explore recommendations for the future.

"Multiple levers are exerting pressure on higher education institutions to restructure and change their deeply embedded assumptions and practices regarding teaching and learning" (Schroeder, 2011, p.1). Despite constant changes in the world, education environments look relatively the same. While post-secondary education has managed to adopt new strategies and approaches, the 'sage on the stage' approach has remained relatively unchanged since the development of formal educational environments (King, 1993). In comparison to other industries and sectors, education's basic model has remained largely unchanged by the evolution of technology. Higher education has remained firmly committed to its traditional approach to education delivery (Bates & Sangra, 2011). The drivers for change include a shift in student

demographics, changes to university funding, an increase in the demand for technology in education, and increased access to information (Educause, 2020).

Technology and online learning have been suggested as a path forward (Means et al., 2009), but faculty uptake of these approaches in mainstream institutions has been slow. According to the Canadian Survey of Online Learning, three-quarters of post-secondary institutions offer some form of online learning, with enrollments in online offerings increasing by approximately 10% each year (Canadian Digital Learning Research Association, 2019). Higher education organizations typically develop robust academic plans that strive to address the needs identified by workplace experts, student demand and research. Alternate course delivery models, such as blended or online learning, are typically included in the plans. Most Canadian post-secondary institutions believe that online learning is an essential element of their long-term plans; still, less than half of them have implemented or are implementing a strategic plan for e-learning specifically (Canadian Digital Learning Research Association, 2019). Even with a plan it is essential to note that the institutions are not in full control of the achievement of such plans; faculty commitment is necessary. With all this change comes a challenge to prepare faculty for not only current university environments but also future environments (Duderstat, 2000). In most universities, individual teaching faculty have the academic freedom to design and deliver their courses as they wish. Administrators hope that faculty will consider the academic plan in their course development. Professional development opportunities are provided; however, faculty have the freedom to choose to engage, or not.

Researcher's Positioning

In determining a research topic, I sought to combine my desire to support change in faculty teaching practice with my interest in AI. As an experienced faculty member, I chose to

transition into an educational development role with aspirations of influencing my colleagues' use of technology and online learning. Presence at the leadership tables would provide me opportunity to influence decisions about the tools the university acquired, the support provided to faculty, and the way in which that support was delivered. With nursing as my original career, I believe strongly in caring for others. In times of transition or change, this becomes even more significant. My experience is that faculty want to provide their students with exceptional learning experiences; yet, in the absence of formal training in technology and pedagogy, they teach the way they were taught. Educational developers can support faculty through change instead of just providing instruction on teaching practices. I propose that the use of AI in my interactions with faculty could help them change their practice in a way that feels safe and supportive, while working as individuals and groups to support our students and our organizations.

Early in my doctoral studies I explored the drivers of change impacting higher education and other sectors. These drivers are important variables, yet education as a system seemed to be struggling to address them. There was evidence to support blended and online learning models as a path forward to address variables such as cost, access, and digital skills (Bollinger & Wasilik, 2009; Means et al., 2009; Picciano et al., 2010). This led me to explore the barriers to faculty adoption of technology. The literature indicated the significance of faculty engagement to move the system forward. Time to learn technology and new delivery approaches and to redesign courses were frequently cited as a barrier for faculty (Betts & Heaston, 2014; Brownell & Tanner, 2012; Lackey, 2011; Martins & Nunes, 2015; Wingo et al., 2017). University teaching load assignments typically include an allotment for scholarly activities and professional development; how faculty use that time, however, is their choice. Despite an affordance of time in the case study institution, engagement in professional development related to technology and

online delivery models had not been substantial. Underlying factors impacting engagement may include motivation to learn and discomfort with change itself.

A conversation with one faculty member added another dimension. He asked me how I knew technology needed to be part of higher education? This made me aware that not all faculty recognize the drivers of change or the affordances of technology and online learning. If faculty are unaware of the need for change, perhaps the motivation to engage is not there. Tagg (2012) asserted that, when confronted with choices, human beings seek value, specifically to conceive a gain or avoid a loss. Consequently, we are influenced by the way outcomes are framed and thus the value proposition for the requested change is an important factor that impacts faculty personal choice and motivation to engage. The early adopters were moving along, attending workshops, and adapting their practice while others were still doing what they had always done. It may be that some faculty are not aware of the factors exerting pressure on higher education and do not see the value of using technology in learning environments, or it may be that they see need for change but are held back by lack of support, low self-efficacy, or fear of change itself. This natural human behavior highlighted an opportunity to use AI to support a vision for future teaching practices, and the opportunity to blend my areas of passion.

During the initial development of this study, the faculty adoption of blended and online learning at my institution was low. As the Director of Learning Technology and Educational Development, I request annually from the Office of Planning and Accountability the data available on course delivery statistics in the institution. Of approximately 7,000 courses taught annually, less than 10% were being delivered in blended or online formats (McElroy, personal communication, October 2019). Attempts by the educational development team to provide training, course design support, and opportunities to discuss the role of technology in higher

education were met with low faculty attendance. Perhaps the timing, the culture, or the technology support barriers were too great to overcome. However, a rapid shift in world events managed to upend individual and institutional plans in an unprecedented way.

In March 2020, the COVID-19 pandemic caused most post-secondary institutions in North America and worldwide to transition to an online delivery model almost overnight. The majority of faculty in my institution were overwhelmed, inadequately prepared, and suddenly eager for assistance. The educational development team prepared a five-module course for faculty to be deployed as quickly as possible. The online course included synchronous and asynchronous components and was designed to meet the needs of diverse faculty learners with varying years of teaching experience and technology skills. Registration for the first offering was full in under two hours, and we added additional sessions to address the demand of an ever-growing wait list.

While remote delivery is not the same as planned online or blended delivery, the researcher asserts that the experience it provides has value as a foundation from which to move forward. This experience could inform strategy for effective technology use in post pandemic educational environments and for effective faculty support when implementing change. This study engaged faculty in an AI experience with the hope that, building on their best experiences, teaching online would engage and motivate them towards technology-supported future practice. The pandemic provided a unique opportunity for educational developers and leaders to consider how faculty could be supported to reimagine their future teaching practice to include technology and online course delivery.

Background

The Need for Change

For two decades or more, there has been discussion about a period of rapid change for higher education. Knowledge, in isolation, is not enough to meet the needs of the future, so our approach to post-secondary education needs to shift to include twenty-first-century workplace skills such as collaboration, emotional intelligence, critical thinking, and systems thinking (World Economic Forum, 2016). To help prepare learners for a future we cannot anticipate, educators need to help students understand the relevance of new literacies and transferable skills. To do so effectively, we need faculty to consider these future contexts in their design and delivery of learning experiences.

The World Economic Forum report on employment and workforce strategy suggested there is a gap developing between what people are learning and what people need. Further, the report predicted the top ten skills required in the year 2020: problem solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, judgement and decision making, service orientation, negotiation, and cognitive flexibility. These skills are not about content knowledge; they are interpersonal and intrapersonal skills, such as self-regulation, self-awareness, and resilience that contribute to thinking development and learning overall. However, faculty engaged in course level curriculum design tend to focus on discipline specific content knowledge. To integrate development of these kinds of transferable skills and literacies at the course level will require a significant shift in the way education is designed and delivered. The purpose of sharing these desired outcomes of post-secondary education in this proposal is to substantiate the importance of grounding the design and delivery of education in the expressed needs of the future as a means to ensure relevance and effectiveness.

Additionally, developments in technology have necessitated workforce retraining on an ongoing basis and increased access to information. As a result, the demographic of learners in today's university classroom has shifted and expanded to include mature learners who have competing life responsibilities, thus increasing the demand for flexibility and access to education in less traditional formats. Picciano et al. (2010) contended there had been a call for education to transform in many countries in light of the new technologies, especially those that support online learning. Technology is changing how we communicate and how we work. Therefore, technology should be visible in our teaching and learning environments. Suggested changes for higher education have included the adoption of technology in teaching practice (Bates, 201), the design of flexible and digital learning environments (Morris & Stommel, 2018), and the revision of competencies to be workplace ready in the twenty-first century (World Economic Forum, 2016). Educational reform must evolve around technology to support rapid knowledge acquisition, changing delivery models, evolving technology platforms, and to provide learner flexibility. Technology is a driver of education (Selwyn, 2012).

Support for Online Teaching and Learning

Distance education has been around for decades and, as technology has increased and evolved in functionality, the opportunities to support high quality learning through these approaches has shifted. “While traditional models of teaching and learning have endured, the continued growth of online learning is inevitable given the advances in technology and the demand for access to life-long learning” (Ives & Walsh, 2021, p36). According to Means et al. (2009) online learning has become a popular model to address the need for flexible access to learning. The authors indicated that online learning benefitted students, faculty and institutions. Online learning enables access to qualified instructors in remote locations and is cost-efficient.

Newer technologies, such as video conferencing, collaboration boards, and ePortfolios, allow a high degree of interaction, collaboration, and reflection. Online learning has progressed in higher education for several reasons, and debatably, the most significant of these is its ability to meet the student need for access and flexibility (Picciano, et al., 2010).

A survey of online learning reported data from 70% of Canada's publicly funded post-secondary institutions found that approximately 43% of these institutions reported an increase in online learning of 10% or greater since the previous years' survey (Canadian Digital Learning Research Association, 2019). At the time of the survey, more than 70% of the institutions expected online learning to increase in the coming year. Findings from the survey also indicated that lack of support and training for faculty are a significant barrier to online learning adoption. These projections were prior to the pandemic which will likely increase the focus of higher education on technology-supported education. Despite its ability to meet the needs of students, online learning has not yet transformed post-secondary experiences. Barriers to online learning adoption will be discussed more fully in the literature review that follows this chapter.

Faculty Role in Accomplishing Change

Faculty hold significant power related to the implementation of new practices in post-secondary learning environments. Strong collective agreements provide them academic freedom to determine how they deliver education to students. In addition to technology-based changes, there are numerous topics and agendas faculty can choose to focus on such as: intercultural practices, indigenization and decolonialization, accessibility and Universal Design for Learning (UDL), and new assessment approaches. . Complex demands for research, service to the organization, currency of disciplinary knowledge, and teaching practice development leave faculty with limited time and options for each area of focus.

Educational Developer Role in Supporting Change

In university teaching and learning centres or individual departments, educational developers are faculty, leaders, and instructional designers who design and deliver professional and instructional development opportunities for faculty (Schroeder, 2011). Their pedagogical expertise can play a significant role in supporting change in practice (Balter, 2017). Amundsen & Wilson (2012) described educational development as actions planned and undertaken by faculty members themselves, or by those working with faculty to enhance their teaching. They describe practices that include skill development, teaching method, reflection, disciplinary knowledge and development, and institutional or research-based inquiry.

Educational developers are often called upon to facilitate change, in particular institutional change initiatives that facilitate paradigm shifts required for broad changes in teaching and learning (Austin & Sorcinelli, 2013; Balter, 2017; Schroeder, 2011). A transition in education delivery models to include online teaching and learning could be one of these changes. Moreover, educational developers assist colleges and universities to function as effective teaching and learning communities (Bovill & Felton, 2016).

The professional environment of educators is inherently complex (Reed, 2007). Faculty bring with them experiences, personalities, and learning preferences, all of which shape their practice and their motivation to engage in professional development (McQuiggan, 2012). Motivation comes from internal and external elements. Technology or a critical incident, such as the pandemic, might provide an extrinsic motivator to learn.

Crowley (2018) points out that the key to enacting change is to facilitate processes that help participants reframe and make sense of change to support them to alter deeply held beliefs. In order for faculty to rethink deeply held beliefs and values about teaching and learning, a

transformative process is beneficial (Powell and Kusama- Powell, 2015; Terras, 2017). Transformative learning is a process of examining, questioning, validating, and revising our perspectives (Cranton, 1994; Cranton & King, 2003). Mezirow (2000) describes transformative learning as follows:

> perspective transformation is the process of becoming critically aware of how and why our assumptions have come to constrain the way we perceive, understand and feel about our world; changing these structures of habitual expectation to make possible a more inclusive, discriminating, and integrative perspective; and, finally, making choices or otherwise acting upon these new understandings (p. 167)

This focus on the frames of reference suggests we filter experiences through our beliefs, values, and expectations along with our past experiences. In the case of transforming faculty practice, prior lack of experience teaching online may have been negatively impacting faculty ability to even try this new approach. This study combines the pandemic experience with an AI based professional development series with the goal of supporting such transformation.

Pandemic Context – An Opportunity to Support Change

The COVID-19 pandemic took higher education institutions and faculty by surprise and forced a shift to remote delivery. As a result, some faculty were motivated to develop new teaching skills for emergent online environments. Carnall & Todnem (2014) suggested that change becomes more established as people become confident about the relevance of new ideas to their own situation. Learning to teach online may be a catalyst for faculty to reflect on and evaluate their current teaching practices as moving online prompts a shift from teacher centered to student centered approaches (McQuiggan, 2012). This research study sought to take advantage

of this unique opportunity with the hope of facilitating continued engagement with online teaching practices.

What is AI?

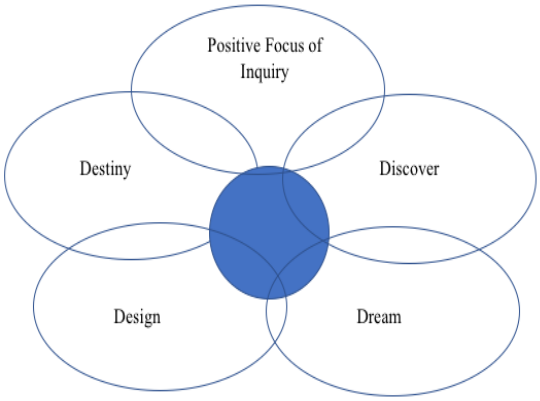
In the late 1980s, David Cooperrider developed the AI framework to take the emphasis off problem solving and the deficits often noticed in individuals or systems (Cooperrider, 1986). Instead, AI focuses on when things are going well, what factors are at play when they do, and how we can support the continuation and expansion of these factors. It recognizes the innate human struggle with change and endeavors to support this with a strength-based, collaborative approach. Since AI operates from the premise that if we look to our past successes, we can analyze what contributed to them as a means to learn about how to move forward (Acosta & Douthwaite, 2005). AI framework is based on both the act of appreciation and the premise of inquiry. When combined they bring about a particular form of guided improvement (Johnson, 2014).

The AI 4-D Cycle (Figure 1), namely:(1) Discovery, (2) Dream, (3) Design, (4) Destiny/Delivery is used to explore a positive focus of inquiry to better understand when participants have had positive experiences with a particular phenomenon and what made the experience positive so that similar experiences can be created in the future. This framework can be used with individuals and groups of all sizes. In the Discovery phase, participants interview each other to share stories of positive experiences related to the topic of interest, following which the interview pairs share highlights with the larger group and a shared reality of multiple perspectives is created. From this step, the group identifies themes about what contributed to success, and these themes become the building blocks for the Dream and Design phases. The Dream stage, where imagining the possibilities and co-creation of a shared future vision is the

desired outcome, is followed by the Design phase where participants develop a plan for how to achieve their desired state. This process may result in shifts in attitude of participants; the co-creation of new knowledge can empower participants to take steps toward a more desired state. In addition, it provides a collaborative experience with peers that facilitates a natural community of support. In the Destiny/Delivery phase participants innovate ways to work towards their ideal future. Additional information about AI is provided in the theoretical framework section of this paper in Chapter 2.

Figure 1

AI Process



Adapted from Watkins, et al.,2011

Rationale for the Selection of AI

Appreciative Inquiry is underpinned by several well-known theories; two of which serve as a foundation for this study: positive psychology and social constructionism. Positive psychology is a collective term for research that is focused on understanding human flourishing (Seligman, 2002). Several areas of focus in positive psychology, which include positive

emotions, self-development, perseverance, and positive social relationships (Lewis, et al., 2016) are directly relevant to AI. Appreciative inquiry capitalizes on this knowledge and brings attention to positive experiences, so we are better able to expand our thinking, open ourselves up to new ideas, and increase our creativity (Lewis, et. al, 2016). The approach for this study was to ask participants to reflect on their experience teaching online as a way to support identification of strengths and a vision for future practice. The application of the AI framework aimed to foster engagement and connections with others, meaningful dialogue, creativity, and motivation to try technology enhanced pedagogy.

Social constructionism argues that knowledge is entrenched in the world in which it exists, and does not exist independently of our perceptions, thoughts and beliefs (Lewis et al., 2016). In other words, it is focused on what is in the mind of individuals. Social constructionists believe that (a) research constructs the world it studies, (b) there is no single truth, and (c) there will always be perspectives that are seen and those that are overlooked (Bushe 2012). AI encourages the sharing of diverse perspectives allowing for the co-creation of a shared reality that supports change and innovation by capitalizing on the potential that exists when individuals come together to construct something new.

Appreciative Inquiry has been used extensively to support organizational change; however, when the desired organizational change is dependent upon individual practices, the individuals require support. Steyn (2009) asserted that, when considering change, AI offered an alternate approach to problem-based professional development that focusses on the negative. The shift from the traditional gap analysis, and deficit-based approach to a strength-based design in educational development could be tool for motivating and supporting practice change among faculty. To reduce resistance to technology and online delivery approaches, AI could provide the

framework for professional development that allows rich dialogue on values, future vision, and skill development. In addition, faculty development activities that create space for dialogue and emotion facilitate trust and stronger relationships with faculty colleagues. Buchanan (2014) suggested that AI offered a way to inspire transformational learning where educators create the transformation for society as opposed to society dictating what needed to be done.

A consequence for participants of experiencing an AI process may be a transformational learning experience achieved through reflection, imagination and collaboration. This study provided faculty an opportunity to reflect on and identify the strengths of their current teaching practice, and to explore and imagine how they could reshape their practice to meet the needs of a more digital world with varied learners.

This study used AI tools to frame a professional development offering for faculty to support them in re-imagining their teaching practice for the delivery of blended and online learning. The study did so by offering faculty an opportunity to reflect on their initial teaching experience in an online setting with a focus on identifying strengths in their own teaching practice by exploring what went well during this experience. Faculty then identified opportunities for their own development in order to work towards their ideal future. The AI process encourages bringing forward the best of what is currently happening and aspiring for something more significant by identifying growth opportunities collaboratively with peers. The AI process supports individuals and groups to move forward through a process of exploring perspectives and stories and developing shared understanding, to consider the potential future vision and a plan to move forward. By envisioning their desired future, faculty foster personal commitments towards its achievement.

Issues Statement

The desire for flexible, digital learning environments is just one of a plethora of opportunities for change in the higher education sector. Mature, working learners and young adults need flexible and digital learning environments to meet the needs of their lives and to develop competencies for the 21st century. In order to effect change in the teaching practices of higher education, faculty engagement and commitment to innovate their practice is critical (Bates, 2011; Shea et al, 2005). Educational development experts could guide faculty to make adjustments in their course design and delivery that meet the evolving needs of learners and education as a whole. However, without the engagement of faculty to revise, improve, and evolve their teaching practice through the acceptance of technology and creation of diverse learning environments, little systemic impact would likely be achieved. Despite the institution offering of professional development, faculty can choose to invest their time and personal resources to acquire the needed competence for blended and online learning delivery, or not.

Research Purpose

The scope of this study was to explore one possible approach that educational developers could use to support faculty to reflect on their practice and make adjustments to address the learning needs of the future. The AI approach was selected to support individual change as opposed to its typical application in organizational change efforts. The purpose of this study was to identify how this use of AI in faculty professional development impacted faculty experience of making changes in their practice and to explore how AI could support their adoption of technology and online delivery models. It was anticipated that if faculty are supported to reflect on their initial experiences teaching online, they will identify strengths and consider

opportunities for development; ultimately inspiring them to continue developing the knowledge and skill to move forward.

Assumptions and Delimitations

Assumptions refer to a researcher's personal theories, contexts, and perspectives that contribute to the development of a problem and the design of research questions (Creswell, 2013). In the design of this study, several assumptions are evident. First, that there is agreement about the need to change teaching practices to meet the demands of the digital age. Second, there is an assumption that for organizational change to occur, individuals making the change need support. Supporting evidence for these assumptions is provided in Chapter 2.

Delimitations are the characteristics that limit the scope and define the boundaries of a study (Simon, 2011). The topic selection for this study arose by bringing together the researcher's AI practice and experience as an educational developer as a means to explore how to support change in higher education faculty teaching practices. This study intended to provide a possible approach that is not widely used in educational development as a path forward to supporting change. While the case study was confined to a single institution, the variables surrounding it are similar in many other institutions.

Research Questions

This study was designed to answer two research questions.

1. What is the faculty experience of AI based professional development?
2. How does the use of an AI approach by educational developers support faculty adoption of technology and online delivery models?

The study used an AI process in a reflective professional development series, to support faculty individually and collectively to reflect on their initial experience teaching online during the pandemic.

Significance

To prepare students for the workforce, educators need to adapt and provide them with the right competencies and current learning skills to succeed. The literature indicated the potential of blended and online learning as a path forward to address many of the challenges faced by higher education. The pandemic forced faculty and students into digital spaces providing an opportunity to reflect and map a path forward for the future. This study explored AI as a possible approach to supporting the continued adoption of online course delivery in the future. This is important now, more than ever, as without support to reflect and grow from this experience teaching online, many faculty will want to return to "normal" as quickly as possible and the potential synergy that can be created from this time will have been missed.

This study offers a contribution to the knowledge of facilitating organizational change in higher education by supporting individual faculty transition through reflection, collaboration and future visioning. The findings may be useful to educational developers as a means to expand their repertoire of tools to support change in faculty teaching practice. It may also interest leaders in post-secondary institutions, as they consider their organizational plans and the strategies needed to achieve them. This research project included additional benefits for faculty: as a means to more reflexive practice and as a possible transformational approach that can be used with their own students, collaborating with peers, building digital skills and observing a new way of situating themselves with students and technology. This co-creation of new knowledge, socially

influenced and socially supported, was predicted to create the environment needed for enduring change.

Definitions

Online courses are a form of distance education where the primary delivery mechanism is via the Internet. These could be delivered synchronously or asynchronously. All instruction is conducted at a distance. (Canadian Digital Learning Research Association, 2019)

Online learning is learning experiences in synchronous and asynchronous formats using different devices with internet access; students can be anywhere and interact with instructors and other students. (Singh & Thurman, 2019)

Blended/hybrid courses are designed to combine both online and face-to-face teaching in any combination, where some, but not all, of the face-to-face learning, has been replaced by online study. (Canadian Digital Learning Research Association, 2019)

Educational Developers refers to the group of faculty, leaders and instructional designers who design and deliver professional development opportunities for faculty (Schroeder, 2011).

Appreciative Inquiry is a strength-based approach for analysis and learning, intended for discovering, understanding and fostering innovation in social organizations (Cooperrider, Whitney & Stavros, 2008).

Summary

The pace and volume of change in the world is more significant now than ever before. These changes require higher education to re-evaluate what is taught, how it is taught, and where it is taught. Online learning is one option moving forward that could support access, flexibility, and technology skill development (Means et al., 2009). Blended and online learning increase the use of technology to deliver and support learning in education. This type of learning provides

students with the opportunity to develop digital, inquiry, and collaboration skills to work in the online environment that is common in today's workplace. Teaching blended and online courses requires a change in approach to course design and delivery (Bates, 2018). Most faculty will need support to make these adjustments to their teaching practice. Faculty are the key to successful reform in higher education (Bates, 2011) and supporting them to adopt new practice is pivotal to reform success. "AI changes social systems by generating collective images of new and better futures by exploring the best of current practice" (Bushe,1999). While change is challenging for most individuals, educational developers are ideally situated to prepare and support faculty (Schroeder, 2011) for current and future university environments that include technology and online learning.

This study explored the application of an AI approach to faculty professional development - an approach that supported faculty participants to reflect on initial experiences teaching online and to reimagine their teaching practice to include blended or online delivery in the future. The results of this study might be of interest to educational developers and higher education leaders who are focused on meeting the needs of students in a rapidly changing world.

In the subsequent chapters the relevant literature will be reviewed, the study design and related instruments and professional development will be described, the results will be shared, the findings will be discussed, and recommendations will be provided.

Chapter 2. Review of the Literature

This chapter provides a review of the literature related to the factors impacting the uptake of technology and online delivery models, online teaching practices during the COVID-19 shift to remote delivery, current educational development practices, and the use of AI in higher education. Finally, AI and its underlying theories will be discussed as the theoretical perspective for this study. Subsequent chapters will detail the research method, design, results, discussion, and implications of this study.

Introduction

Significant changes in the world, such as globalization, increases in technology, and ubiquitous access to information, have necessitated adaptation within higher education institutions (Hughes & Mighty, 2010). Online learning has been suggested as one of the ways to adapt to the changes that are impacting higher education. For a change in delivery models to be successfully achieved, post-secondary institutions are dependent on change at the individual faculty level. This prompts the question of how institutions can engage individual faculty to move forward with new delivery models.

Factors Impacting Uptake of Technology

The challenge of transitioning to technology supported teaching and learning is multifaceted and requires the involvement of affected parties, leaders, faculty, and educational developers. From a review of the literature in this area three themes emerged: barriers related to organization, group culture, and structural supports; concerns about the evidence surrounding technology and online learning; and individual factors affecting faculty adoption of new practices. This identification of themes is aligned to a number of typologies describing the

barriers for integrating digital technology, which are summarized nicely by Mercader and Gairin (2020).

Organizational commitment to infrastructure and supports for faculty were identified as significant factors, and numerous studies reported faculty concerns about technology that affected their engagement. Concerns included reliability and frequent changes in the tools, as well as the need for training and resources to support faculty and students (Betts & Heaston, 2014; Bollinger & Wasilik, 2009; Brownell & Tanner, 2012, Picciano et al., 2010; Wingo et al., 2017). Elements of organizational culture impacted faculty engagement in technology-based practices. Group factors, including norms and cohesiveness, may have moved some groups forward while holding others back (Jones, 2013). For example, a new faculty member with passion for active learning or use of technology may not have engaged if their department had many traditional educators who may judge them for using these pedagogies.

Researchers identified additional concerns about student outcomes related to their technical skills, levels of engagement, and mode of learning (Wingo et al., 2017). Ongoing disagreement about the effectiveness of online learning has been suggested as a factor that inhibited faculty engaging in this approach. In a longitudinal comparative study of student perceptions in online education, Mortagy and Boghikian-Whitbey (2010) indicated that students, over time, had become increasingly more appreciative of online education and its effectiveness. Reviews of the literature assessing the effectiveness of blended and online learning found that students in online-learning conditions performed better than those receiving face-to-face instruction (Means et al., 2013; Nguyen, 2015).

When considering faculty uptake of new practices, motivation is another potential individual barrier to the adoption of technology-forward practice. Motivation refers to the

elements that contribute to behavioral choices (Ryan & Desi, 2000). These elements are typically segregated into two categories: intrinsic motivators like pleasure, personal goals, and values, are those that come from inside a person while extrinsic motivators such as rewards and recognition come from outside (Lai, 2011). Early motivation research (e.g., Rosenblum, 1956) focused on extrinsic motivators, building on Skinner's foundational work (1938), identifying either punishment or reward as the main drivers of behavioral choices. Over time researchers realized that motivation was more complex. In 2004, Broussard and Garrison noted that most research on motivation was interested in themes related to efficacy, relevancy, and competency—could I do this task? Do I want to do this task and why? What must I do to succeed with this task? These components of motivation aligned to the findings on faculty resistance that reflected confidence (Betts & Heaston, 2014; Bollinger & Wasilik, 2009; Jones, 2013) and competence in front of students (Wingo et al., 2017) as barriers to faculty attempting technology-based course delivery, and possibly their choice to engage in related faculty development or not. Faculty resistance to online learning may also be related to feeling comfortable with face-to-face delivery and uncomfortable with online teaching as the evidence of what constitutes good teaching online is still evolving (Picciano, et al., 2010). The most commonly cited barriers related to educators integrating digital technology were lack of time, effort and impact on workload as well as lack of training, infrastructure, and knowledge related to teaching approaches for digital technology (Brownell & Tanner, 2012; Lackey, 2011; Martins & Nunes, 2015; Mercader & Gairin, 2020; Wingo et al., 2017). Lack of knowledge of pedagogy (Balter, 2017) that relates to the delivery of online learning and professional identity (Brownell & Tanner, 2012) were noted and are likely contributors to faculty concern about their image online (Wingo et al., 2017). Additional concerns include feeling isolated and disconnected from others (Lackey, 2011). Fear of change

and the impact this may have on confidence to take risks and move forward was also significant (Betts & Heaston, 2014; Bollinger & Wasilik, 2009; Jones, 2013). All of these may have contributed to teaching habits, and cognitive biases about technology and/or online learning would be factors that combined with others would impact motivation (Jones, 2013).

Online Education During COVID-19

Online education quickly became the solution for continuation of educational activities around the world when the COVID-19 pandemic forced campus-based education to be suspended (Paudel, 2021). It is important to note that emergency remote delivery and thoughtful planned blended or online learning are not equivalent. That said, this experience teaching in digital spaces provides a valuable foundation from which to develop. Successful implementation of online learning is dependent on many variables such as technology access (Paudel, 2020), technology skills (Paudel, 2020), teaching methodology (Dhawan, 2020; Duraku & Hoha, 2020), support for students and educators (Per & Kitson, 2014), as well as adequate interaction and communication (Akyildiz, 2020; Paudel, 2020). Bates (2020) argued that online learning is more than a mode of delivery and that it is a form of distance education that requires intentional design using pedagogical strategies specific to the virtual environment. Emergency remote delivery may have met the need of these challenging times but is not sufficient to meet the educational needs of the future.

Intrinsic strengths of online learning such as flexibility related to time and location of learning (Dhawan, 2020; Paudel, 2021) were immediately noted by both faculty and students who were no longer able to attend campuses in person, many of whom struggled with additional competing priorities such as caregiving, employment changes, and perhaps even their own health and wellbeing. Similar to pre-pandemic challenges, most significant barriers related to learner

skills such as time management, independence, academic integrity, and access to technology and internet remained as topics of concern (Akyildiz, 2020; Dhawan, 2020, Paudel, 2020). Ledereman (2020) pointed out that challenges for faculty also included engaging students, providing timely feedback, redesigning courses, and ensuring student access.

The "Time for class COVID-19 edition" survey suggested that the experience teaching online during the pandemic had enhanced faculty perspective on how technology could be used in their teaching to enhance student learning (Tyton Partners, 2021). Gardner (2020) asserted that the experience online during this time highlighted the importance of well-designed online instruction, the role of technology, the need for digital strategic plans, and the value of this experience to impact future teaching approaches online and in the classroom.

In this study, the participant learners are the faculty members who, in order to increase use of technology, needed to acquire new knowledge and skills to help address the paradigm shift needed to embrace online course delivery in higher education. Understanding faculty experiences may provide insights that inform future support structures and techno-pedagogical practices that emerged during this period (Johnson et al., 2020). Research on the barriers to the adoption of technology and online learning approaches aligns to the underlying elements of motivation. Faculty confidence and/or competence to learn new things and their concerns about successful implementation in front of their students may be preventing them from attempting new practices.

Educational Developer Current Practices

To address contextual changes in higher education, educators need to develop new teaching strategies based on the research about how students learn, the skills that society needs, and the effective use of technology for teaching and learning (Kenney et al, 2010). Austin &

Sorcinelli (2013) asserted that technology is the most significant factor affecting teaching and learning as it offers opportunity to enhance learning with access to information, simulation, and engaging learning activities.

Traditional professional development approaches are described as one-time workshops, lunch and learns, and pedagogy conferences, and it has been suggested they do not create the conditions for deep professional learning (Mooney, 2018). Austin and Sorcinelli (2013) added that campus-wide initiatives and individual consults should be broadened and encouraged so that professional development can be offered through a variety of delivery modes and discipline specific lenses to better meet the needs of faculty. Most faculty development models are a one-size-fits-all approach that leads faculty through learning without a deliberate reflection and feedback (McQuiggan 2012). This focus on instrumental knowledge, as opposed to developing the communication and facilitation skills that are needed in online environments, does not adequately support faculty (McQuiggan 2012). O' Sullivan and Irby (2011) argued that the assumption that teachers can identify their own performance gaps is misplaced and that to facilitate self-assessment, faculty learning should include critical reflection and co-construction of knowledge with other participants in a learning environment.

Knowles' (1980, 1984) adult learning principles contended that faculty are self-directed independent learners; have a depth of experience that can be used in their learning; exhibit readiness to learn within their social role; are problem centered and like to immediately apply what they learn; respond most to intrinsic motivation to feel competent about their teaching; and value relevance to their discipline and perceived usefulness of the learning. The pandemic context increased the perceived usefulness of technology and online learning as well as the opportunity to apply what was being learned in a timely way, increasing faculty readiness to

learn. In addition, their concerns about student learning and their own competence to deliver course in this new format might have paved the way for learning in this environment.

Lawler and King (2000) supported this and developed a rubric to guide the creation of professional development that provide a social environment that recognizes and supports diversity and disciplinary beliefs—an important element needed for faculty to flourish. The authors added that active learning approaches are best, the professional development should allow them to value their experience and allow them to build from it and that collaborative inquiry will bring them out of their isolated experiences to set goals and plan for their own development. Finally, incorporating action plans helps faculty envision how they will implement their learning.

Traditional change strategies in education have tended to be approached from a project management perspective (Bates, 2011), an instructional perspective (Schroder, 2011), or problem identification perspective (Amundsen & Wilson, 2012; Steyn, 2009). Historically, many organizations operated from the perspective that telling people what to do and what is needed was the way to achieve the desired change (Lewis et al., 2016). In the educational development context this approach might be called instruction, yet the underlying goal of this instruction is to effect change. These change strategies, to date, have had minimal impact on increasing faculty uptake of technology and online delivery approaches.

Individual factors that can have a significant impact on achievement of organizational change have primarily focused on personality characteristics and predispositions (Jimmieson et al., 2004; Oreg et al.,2011; Walker et al., 2007). Individual acceptance and support of change (Oreg et al.,2011; Walker et al., 2007) and attitudes toward change (Bouckenooghe,2009) may also be of significance. Cockell & McArthur-Blair (2012) pointed out that educators tell students

that they can achieve their dreams with the right knowledge and skills. It would seem that faculty developers often miss the opportunity to apply this same empowerment to faculty in their development as educators.

In a teaching and learning context, organizational development focuses on fostering institutional environments that support teaching and learning. Related change management strategies may be helpful to supporting change in teaching practice (POD, 2016). The very foundation of human development that is at the core of education itself should be extended to the faculty by encouraging them to practice lifelong learning and professional development. While instructors could affect powerful change and individual well-being in their students, educational developers could similarly affect powerful social change and individual well-being in faculty. To support faculty, the academic infrastructure must strive toward supporting human development and, what positive psychologists might call, human flourishing (Seligman, 2002). Supporting faculty as individuals in the professional development context might be integral to the work of teaching and learning centers within the institution, but the current means of connection are not centered around this approach. Professional development is not just about learning new content or skills, but also, about supporting people and adapting systemic changes that support the delivery of quality education. Ideally, faculty development builds community to build organizational capacity, improve teaching, and support learners (Eib & Miller, 2006). As the world evolves, change remains a constant in the context of education requiring individuals and organizations to continually learn and adjust (Kelley et al., 2017). To support such evolution, educational developers need strategies for supporting faculty as the link between individual change and organizational change cannot be ignored. Educational developers are centered here with significant opportunities to impact the individuals and organizations they serve. As an AI

facilitator, I have had many opportunities to work with individuals and groups and to experience and observe the power of this approach. Supporting faculty to move forward with online-course-delivery models may have more success if more attention was directed to supporting individual needs related to the desired change.

"One of the most important parts of any change process is the people involved; it has been often found that people's feelings and emotions are ignored while conducting a change process because it is difficult to control them" (Mishra & Bhatnagar, 2012, p. 556). In the pandemic context there was increased recognition by faculty, students, and educational developers that the pivot to remote delivery encompassed a learning curve for all and, as a result, everyone may be more forgiving of things that do not go smoothly. This experience may have increased faculty willingness to take risks and decrease their concerns about image and professional identity.

Appreciate Inquiry and Higher Education

A review of the literature of the applications of AI in higher education identified numerous contexts including teaching and learning (Cockell & McArthur-Blair, 2012, Conklin, 2009; Johnson, 2014), community development (Harrison & Hasan, 2013; Mishra & Bhatnagar, 2012), curriculum development (Bester, 2010; Sandhu, 2015), and others, such as advising (Bloom et al., 2008;2013). The applications to the teaching and learning interaction between faculty and students were of specific interest to this study. This background supports AI's potential for application to the teaching and learning interaction between educational developers and faculty.

"Appreciative approaches focus on strengths and successes, using these as building blocks to further learning and growth", suggesting that there are many opportunities to apply AI

in teaching and learning settings (Cockell & MacArthur Blair, 2012 p.196). The application of AI to teaching and learning practices has been deemed appreciative pedagogy (Y'balle & O'Connor, 2000) and appreciative andragogy (Johnson, 2014). Yballe and O'Connor (2000) suggested that educators make conscious and deliberate positive decisions around activities, assessments, and experiences inside and outside the classroom. They identified four key strategies: (1) remain focused on student experiences of success, (2) highlight factors that make things work, (3) identify skills needed to repeat success, and (4) encourage students to focus on developing new skills. Observed outcomes in students when faculty adopt these strategies included energized and sustained interactions, a sense of safety, hopeful views of their future, personally meaningful insights and concepts, heightened confidence, a creative alternative to problem-solving, a positive attitude toward other students, and a positive attitude toward the instructor as a resource, guide, and helper.

Andrus (2010) noted that AI fostered engagement and commitment at an individual level. By including the support of others, AI helps individuals to identify strengths and opportunities, making people more willing to increase their personal involvement and to take risks to be innovative and collaborative. Johnson (2014) subsequently evaluated AI as an online instructional strategy and found increases in adult learner motivation, engagement and performance. In the study, the application of these strategies in an educational development context was anticipated to produce a similar response in faculty learners. Kadi-Hanifi et al., (2014) focused on using AI for educational development as a training tool for the development of academic learning communities and research training programs. The authors found AI had the means to address developing academic community, via research-informed practice, to promote engagement and to change programs. Sandars and Murdoch-Eaton (2016) described the

application of AI to various components of medical education such as faculty development, appreciative education (Bloom et al., 2013), appreciative advising (Bloom et al., 2008), and curriculum development, which included strength-based evaluations. Research evidence suggests AI provides a way for educational developers to engage with faculty to support an appreciative outlook of their teaching and future practice.

Additional applications of AI in educational literature included community building, curriculum design, and evaluation. Mishra and Bhatnagar (2012) reviewed three case studies in British Columbia and found support for the use of AI as they found levels of engagement were triggered by its application, especially in environments where there is a climate of distrust. They also suggest that when AI is used as part of vision activities, it provides a foundation for innovative ideas and a format for individual input that enables creativity. Harrison and Hasan (2013) supported this and added that AI tools could inform the learning and curriculum as well as administration and discourse for all professionals working in higher education institutions. Studies on instructional strategies that support student well-being noted that AI was an effective relationship building tool and that motivation to learn was positively impacted (Johnson, 2014; Lane et al., 2018). Conklin (2009) developed a “preferred classroom activity”, using an AI approach to stimulate awareness of power and agency in course design and delivery. In an attempt to engage students, Conklin and Hartman (2014), implemented an AI exercise in ten post-secondary courses to create peak learning experiences. The exercise engaged students in structuring the learning environment and then surveyed the perceived impact on their learning experience. An impact was also noted concerning student self-efficacy, group interactions, and expectations for the future. Scandura (2017) utilized AI in a course feedback tool to support student reflection about how they learn while simultaneously providing faculty feedback for

future course revisions. In an action research study, an appreciative learning approach was used as a pedagogical strategy to enhance student creativity in computer game development (Leng et al., 2010). The researchers noted that an appreciative learning approach provided an opportunity for students to be heard, to explore, dream and act, and to share their products, ideas, and outcomes with the group. Findings indicate that the treatment group produced higher product creativity than the control group. Thus, much of the research suggests there may be support through the application of AI to facilitate engagement, creativity, and positive learning experiences with faculty.

Sandhu (2015) presented curricular innovations, described as an appreciative - constructionist model of learning, specifically appreciative seminars and appreciative evaluation. Appreciative seminars focus on the reduction of unequal power and the creation of a partnership between student and teacher. These seminars provide opportunities for self-development through reflection and increased awareness to transfer successful strategies into different learning situations, similar to what this study is proposing for faculty professional development. Appreciative evaluation is used primarily in terms of formative feedback to (1) provide outcome and process feedback, noted to lead to higher levels of performance, (2) increasing student belief in the approachability of the instructor, and (3) building from everyday experience to support acquisition of necessary competencies (Sandhu, 2015).

Bester (2010) applied AI in a post-merger higher education institution and reflected on the findings, subsequently noting that engaging staff in curriculum design is a slow iterative process. However, conversations with colleagues supported the generation of positive thinking about the future and increased active engagement of the faculty in the curriculum review and design process.

To help students become their best selves, Bloom et al (2013) suggested it is important to identify and capitalize on the strength of students and education professionals to develop the best qualities of both individuals and the organizations. These recommendations included key elements required to facilitate a culture of appreciative education:

- positive interactions such as an appreciative performance evaluation process,
- reciprocal learning where teaching and learning is a shared responsibility of the instructor and the student,
- holistic engagement to help students and professionals connect their experiences with their values and current life goals, and
- strategic design that is inclusive and provides opportunity for everyone to participate.

Appreciative leadership is suggested as an approach that helps to meet some of these objectives, and to support intentional change. Educational development units, such as teaching and learning centers, have an opportunity to facilitate many of these key elements in both their work with faculty and in the practices they encourage faculty to use with students.

In summary, AI in higher education has been found to develop learning communities (Kadi-Hanifi et al., 2014; Sandars & Murdoch-Eaton, 2016), increase engagement (Andrus, 2010; Johnson, 2014, Mishra & Bhatangar, 2012) increase motivation (Johnson, 2014; Lane et al., 2018) and enhance learner performance (Johnson, 2014). It has also been used to support creativity (Leng et al., 2011), vision (Bester, 2010) and positive learning experiences. (Conklin,2009; Conklin & Hartman, 2014 and Scandura, 2017). These findings are similar to those of other contexts, such as business, and thus support application of AI in this study.

Theoretical Framework

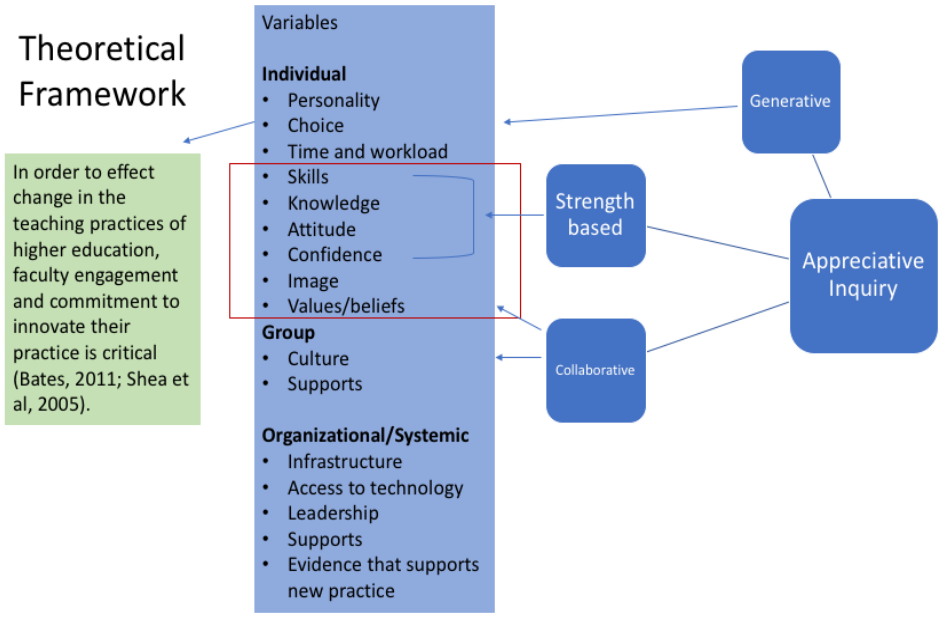
The researcher asserts that to achieve educational reform, faculty engagement and adjustments to their teaching practices is necessary. Furthermore, it is important to note that complex variables individually, collectively and systemically may impact faculty engagement in any practice change. As an educational developer, the researcher's focus is on supporting change at the individual level, for as this occurs the group norms and expectations shift and facilitate organizational or systemic change in the higher education context. The literature indicates that faculty skills, knowledge, and attitudes about technology and online learning drive concerns about image, efficacy, and competence that impact their confidence, and increase their resistance, to adopt new practices. Such sources of resistance are well documented, and the researcher asserts that as a result, faculty choose to spend their time and energy on other professional development topics. Furthermore, the researcher believes that for faculty to reconnect to their values and beliefs about education, a process that builds confidence and a willingness to take risks is needed.

Appreciative inquiry was selected as the framework for this study for its positive psychology and social constructionist underpinnings and for its generative capacity. The professional development intervention in this research design used AI processes to help individual faculty identify strengths, to build positive emotions about technology and online course delivery, and to enhance their capacity towards the achievement of organizational goals. AI is an approach to organizational analysis and learning intended for discovering, understanding, and fostering innovation in social organizations (Cooperrider, Whitney, Stavros, 2008). Engaging faculty in an AI-based collaborative process served to provide social support, broaden perspectives, and foster social action (Bushe, 2013). Founded by doctoral research of

Dr. David Cooperrider in 1986, AI has evolved significantly from its early days of grounded theory building. Cooperrider (1986) described his dissertation as "a conceptual case study whose aim is to explore, describe and propose an action-oriented approach to organizational inquiry which is uniquely intended for the study and enhancement of social innovation" (p.2).

Figure 2

Theoretical Framework Visual



Watkins, Mohr and Kelly (2011) described it as far more than an organizational development methodology. The authors highlighted AI's inclusion of social constructionist roots, positive psychology, and the power of images of the future results in three interconnected concepts, namely: (1) AI is a philosophy of knowledge and a way of coming to understand the world, (2) AI is a principle-based intervention that emphasizes the importance of language, dialogue, and the power of story in the construction of our individual realities, and (3) AI is a philosophy and intervention that can be applied to any process for working in organizations.

AI operates with some key assumptions that facilitate the power of this process.

- In every group, organization or society something works.
- What we focus on becomes our reality.
- Reality is created in the moment and there are multiple realities.
- The act of asking questions influences the group in some way.
- People have more comfort in the future if they carry forward parts of the past.
- We should carry forward the best of what is.
- We should value differences.
- The language we use creates our reality.

Cooperrider, Whitney and Stavros (2008) proposed that the practice of AI is about the art of what is possible and that in organizational life, this begins with appreciation. This inquiry should produce knowledge that can be applied and validated; this knowledge is provocative as it stirs members to action, and it recognizes a relationship between inquiry and its content.

The AI process includes five key principles:

- the constructionist principle
- the poetic principle
- the anticipatory principle
- the positive principle
- the principle of simultaneity (Cooperrider, Whitney, 2005).

The *Constructionist Principle* is based on social constructionist theory (Gergen, 1978) and acknowledges that as humans interpret the world around them, they may have different experiences and therefore a different reality. AI recognizes that these stories impact how people

think and act (Reed, 2007), and facilitate socially shared construction of our current and future experience. Watkins et al., (2011) add that what people believe to be real in the world is created through conversations that lead to agreement about how to see the world and how to behave.

The *Poetic Principle* emphasizes that people choose the parts of their stories and experiment with them over time (Reed, 2007). Bringing together their attention and energy, AI supports people individually and collectively. Valuing storytelling to gather information creates space for facts, feelings, and the way they affect a person's experience (Watkins et al., 2011).

The *Anticipatory Principle* states that the way people think about the future will shape the way they move forward (Reed, 2007). The focus on bringing forward the best of what is contributes to a vision of shaping the future to an even more desirable place. Watkins et al., (2011) suggested that decisions and actions are based on what we are born with, what we learn, and what we anticipate; in other words what we think guides our behavior.

The *Positive Principle* indicates that the act of positive questions engages people as they turn toward ideas that energize them. Change requires large amounts of positive affect and social bonding (Watkins et al., 2011).

The *Simultaneity Principle* argues that inquiry and change occur simultaneously as the questions stimulate reflection and thought that lead to new ways of thinking and doing (Reed, 2007). This suggests that our most powerful tool is the way we ask questions. Asking questions has the power to reshape our consciousness and stimulate curiosity. Positive or negative, the seeds of change are embedded. What we will discover is dependent on the questions we ask (Watkins et al., 2011).

These principles illustrate that our experiences impact how we see and interact with the world and that interactions with others can create new experiences that help us reshape how we

move forward. We can choose our focus and work as individuals or groups towards new realities. When our focus is on strengths, we bring forward the best of ourselves to these initiatives. We can drive this process with the questions we ask ourselves and one another.

Positive psychology looks at what makes individuals, communities and societies succeed (Seligman, 2002). Positive emotions can build resourcefulness, resilience, and connections between people (Lewis at al.,2016), specifically the climate educational developers strive to create. This new area of research has spread to education, health, neuroscience, leadership, and other fields where studies are looking at strengths or success as opposed to deficits and problems. Donaldson et al., (2015) reviewed the positive psychology literature and defined it as follows:

> Positive psychology is founded on the belief that people want to lead meaningful and fulfilling lives, to cultivate what is best within themselves, and to enhance their experiences of love, work, and play. Positive Psychology has three central concerns: positive emotions, positive individual traits, and positive institutions. Understanding positive emotions entails the study of contentment with the past, happiness in the present, and hope for the future. Understanding positive individual traits consists of the study of the strengths and virtues, such as the capacity for love and work, courage, compassion, resilience, creativity, curiosity, integrity, self-knowledge, moderation, self-control, and wisdom. Understanding positive institutions entails the study of the strengths that foster better communities, such as justice, responsibility, civility, parenting, nurturance, work ethic, leadership, teamwork, purpose, and tolerance.

In a literature review of positive psychology interventions in organizations, the authors found that positive psychology interventions in the work context consistently enhance employee well-being and happiness and as a result likely enhance performance (Meyers, et al., 2013). A

positive psychology intervention is an intentional activity based on the "cultivation of valued subjective experiences, the building of positive individual traits, or the building of civic virtues and positive institutions" (Meyers, et al., 2013). These interventions can be facilitated by remembering positive moments, identifying and developing positive traits, and valued organizational characteristics. These particular strategies are incorporated in the research design using AI to guide a professional development series for faculty.

Social constructivism in the educational context describes an active process of constructing knowledge to make sense of the world (Adams, 2006). It is learner-centered and recognizes that each person brings knowledge and experiences that shape the way they see the world. The construction of knowledge, therefore, is the product of social interaction interpretation and understanding (Chua, 2002). Consequently, the creation of knowledge cannot be separated from the social environment in which it is formed. AI utilizes this social context to explore and understand each other's perspectives and co-create a desired future reality.

Generativity can be defined as the creation of images, metaphors, and physical representations that change how people think so new compelling options for decision or action become available to them and people want to act on them (Bushe, 2013). Building relationships and hearing stories is a key element of the AI-based professional development and the questions serve to guide participants to look at things a little differently. Bushe (2013) describes a generative process as one that creates generative capacity and generative outcomes. He suggests AI is the process that creates capacity for individuals to reconsider what they take for granted and to open up to new possibilities. This process creates new ideas that compel people to act in new ways.

Summary

Uptake of blended and online learning continues to progress slowly. In 2016/17, the Canadian Digital Learning Research Association reported that 17% of post-secondary students were taking at least one course online. For the 2017/18 academic year, the survey reported an increase of approximately 10% in online course enrollments (Canadian Digital Learning Research Association, 2019). The survey was subsequently redesigned to address the pandemic context. Despite evidence that there is no significant difference in learning outcomes from traditional classes to online classes and student feedback indicated that online delivery models meet their needs for flexibility and access, the use of online approaches still has opportunity to increase. Understanding how educators respond to change is an important consideration if reform efforts are to be successful (Hargreaves, 2005). Typically, change management is initiated on a deficit model that identifies weaknesses as opposed to opportunities for growth. "The AI approach provides a unique and innovative developmental opportunity for both individuals, and the organizations in which they are an integral member, to identify and mobilize individual and collective strengths to achieve their individual potential and that of the organization" (Sanders & Murdoch-Eaton, 2016, p.126). It was anticipated that experiencing AI as part of a professional development session would support faculty to gain the confidence to take risks and the motivation to move forward with personal practice changes. In addition, engagement in a transformational learning experience was anticipated to promote reflection, knowledge building, collaboration with peers, co-creation of future teaching philosophy and practice.

Current educational development practices typically encompass workshop delivery and individual consultation in which faculty may elect to participate. Their participation depends on them identifying their learning need, being motivated to pursue suppo,rt and being committed to

engage in skill development. During the pandemic the prevalence of digital delivery resulted in increased motivation to engage in faculty development offerings. The literature suggests numerous barriers to faculty engagement with technology and online learning. These barriers include time (Martins & Nunes, 2015), discipline, (Balter, 2017) personal goals and values (Bates, 2000; Jones, 2013; Powell & Kusama-Powell, 2015), and confidence or motivation (Lai, 2011). Previous experience with online learning and technology is likely a factor as well (Wingo, 2017). AI offers a means of engaging colleagues in educational development without using deficit-driven performance management approaches (Kadi-Hanifi et al., 2014).

This study was premised on the perspective that current faculty professional development learning opportunities are not sufficient to support a shift in thinking about online teaching practices instead of familiar place-based teaching. In addition, current educational development practices fail to support faculty with the experience of change, both as individuals and as groups. Consequently, this study aimed to explore AI as an approach that the literature suggests builds learning communities, supports reflection, generates shared knowledge, and envisions future possibilities as a means to further engage faculty with blended and online delivery models following the pandemic.

Chapter 3. Methodology

Prior chapters have established the need for change in higher education to better meet the needs of learners and society overall. For this to be achieved, faculty-role change, specifically adoption of technology and blended or online delivery models, has been suggested as one path forward. The occurrence of the COVID-19 pandemic forced faculty into digital spaces and provided an ideal opportunity to assess how to support them toward future innovation. Consequently, participants for the study were recruited from the faculty who had completed the institution's course for learning to teach online, as they were novice online instructors who had invested in their development by attending the course.

A mixed-method case study was chosen as the work of an educational developer is incredibly complex, as supporting university faculty necessitates an understanding of individual, group, and organizational variables. Yin (2018) points out that case study copes with technically distinct situations where there are many more variables than data points and may rely on multiple sources of evidence. Participant variables in this particular case study include the diversity of faculty, their experience teaching, technology skills, awareness of the drivers of change in education, personality, and disciplinary culture, all of which may impact faculty desire to consider new approaches to education delivery. These variables are difficult, or impossible, to control and are continually impacting the effectiveness of the efforts of educational developers. The situational context of faculty personal experiences, disciplinary background, and department culture may also contribute to their professional development experience and their lived reality of teaching online. Therefore, this study focused on the individual factors, specifically the underlying skills, knowledge, and attitudes, that may influence the adoption of technology and online delivery models while recognizing complex variables remain at play. This chapter

outlines the researcher's paradigm and how it led to the study design. Further, this chapter details the methodology, the research questions, the research design, population and sampling, data collection and analysis, survey instruments, study limitations, and ethical considerations.

Paradigm

The study was designed with a pragmatic approach recognizing that actions, situations and consequences are ever changing in the social world (Creswell & Creswell, 2018). The practical application of this study to the researcher's work and scholarly activities is directly related to the researcher's motivation. As an educational developer, the practical application of research as a means to solving problems is important in order for the work to become more meaningful. The researcher aligns to multiple real-world views and the use of any method that will help to achieve these goals (DeCuir-Gunby & Schutz, 2017). This study was also pragmatic as it used the COVID-19 pandemic shift to online delivery as an opportunity for faculty to reflect on their initial online teaching experiences to consider how their future practice may be refined. There is not a single desired outcome as it relates to teaching practice; excellence can be achieved across delivery models and using a variety of teaching approaches. The goal of this study was to facilitate a reflective practice that may support increased adoption on technology and online delivery approaches.

Methodology

This case study was designed with a mixed-methods concurrent design to facilitate depth of understanding of the potential impact of AI use by educational developers. In this design the quantitative and qualitative data were collected during a similar timeframe, analyzed separately, and then compared for interpretation. This section reviews the rationale for selection of a case study approach and the rationale for mixed-method research design.

Case study methodology was selected for its practical application to the researcher's context. Case studies investigate contemporary phenomena in real world environments where the boundaries between the phenomenon and the context are not clearly evident (Yin, 2018). They facilitate understanding of ideas more concretely than by presenting them as theories or principles (Cohen, et al., 2011). Yin (2018) suggested case studies are favored to answer questions "how" or "why" especially where the researcher has little to no control over behavioral events. Cohen et al. (2011), also described some advantages that make case studies attractive to educational researchers. The advantages include their grounding in the complexity of reality, attention to subtleties, recognition of social truths, attention to social situations, and viewpoints held by participants. The rich descriptions allow for subsequent reinterpretation by others whose purposes may be different than the researchers'. These advantages are well aligned with AI where participants share their collective perspectives with the objective of co-creating a shared future. Collaborative recognition of the significance of diverse individual perspectives on reality in combination with the power of interaction contributed to the selection of AI for this study.

In this case study, a mixed-method approach was selected to build a more comprehensive understanding of the case (Fetters et al., 2013, Yin 1984). The boundary between case studies and mixed-methods research is fluid, allowing one to support the other (Carolan et al, 2016). A mixed-method case design is one in which the quantitative and qualitative data collection, results, and integration are used to provide depth of understanding to the case (Creswell & Plano-Clark, 2018). The case was bound by both institution and activity (Creswell, 2013) and collected detailed information to support understanding of faculty-teaching practice as it relates to technology-based learning environments. Self-assessment survey data, personal stories and reflections were integrated to seek convergence or divergence of data and to provide a more full

and meaningful explanation of the impact of AI-based professional development (Creswell & Plano-Clark, 2018; Schonnenboom & Johnson, 2017).

Sugrue et al (2017) completed a systematic review of educational development literature and indicated that most studies measure the impact of staff development in terms of reaction of participants, the learning of participants, changing participant behavior, and impacts on practice environments. Amundsen and Wilson (2012) argued that, while such studies added value, they did not actually provide enough insight about what makes educational development effective and suggested that it was necessary to move from cause-and-effect empirical evidence to more qualitative and mixed-methods studies to increase understanding of how educational development practices worked. This design was selected as controlling the variables, which are outside the scope of the study, would have been impossible. Variables impacting professional development decisions include items such as personality, departmental culture, and organizational culture.

Appreciative Inquiry as a Professional Development Intervention

Appreciative Inquiry was selected as the approach for the professional development session (Appendix A: Course Plan) and underpinned the research process. “It is an alternative to the problem-solving approach underpinning action research and offers an affirmative approach for evaluating and envisioning future initiatives based on best practice” (Murphy, et al., 2014, p. 94). Appreciative Inquiry seeks to identify and build upon good practice by designing effective development (Murphy et al., 2014). In addition, strength-based inquiries may influence readiness for change and initial negative reactions to upcoming change (Bushe & Kassam, 2005). Another reason supporting its use for this study was that the sharing of personal experiences in an AI-grounded session contributes to participants developing a vision for future possibilities. A shared

vision lends itself to teamwork, mutual support, emancipation from technology fear and allows faculty to experiment with new ideas and course design.

The literature indicates further research is needed to provide empirical assessment about the effectiveness of AI as an intervention (Bushe & Kassam, 2005). Despite many qualitative accounts of the value of AI for supporting change in groups and organizations, minimal quantitative studies exist that measure the impact of AI on individual level outcomes (Verleysen et al., 2015). Appreciative Inquiry offers a language and framework to engage in practice research (Dewar and Sharp, 2013; Knibbs, et al., 2010). This study adds to the literature by providing quantitative and qualitative evidence of the effectiveness of AI in the educational context.

Research Questions

1. What is the faculty experience of AI based professional development?
2. How does the use of an AI approach by educational developers support faculty adoption of technology and online delivery models?

Research Design

A mixed-method design was selected for this study to expand and strengthen the conclusions that can be drawn about the experience of faculty development and how it impacts subsequent practice (Bryman, 2006; Creswell & Plano Clark, 2018; DeCuir-Gunby & Schutz, 2017). Descriptive statistics were collected to help describe the participant group: their disciplinary background, technology skills, and years of teaching experience. Statistics were used to measure participant shifts in scores from the pretest survey to the posttest survey to measure the impact of the professional development. Schoonenboom & Johnson (2017) indicated that

mixing methods could be used to examine different aspects of one research question or to examine two or more separate but related research questions.

In this study, the quantitative and qualitative components had an equal status for the researcher and were collected to answer two unique research questions on one complex phenomenon. Specifically, a convergent design, also known as triangulation or concurrent mixed-methods, allows data to be collected at the same time or in a parallel fashion (Creswell & Plano-Clark, 2018; DeCuir-Gunby & Schutz, 2017). All of the data collected was from the same group of participants. The data types did not impact each other during collection and results were analyzed separately. Findings were then integrated and analyzed together (Creswell & Plano-Clark, 2018; DeCuir-Gunby and Schutz, 2017).

The qualitative data elements added valuable context to the more objective pre and post professional development self-assessments which explore multiple variables related to practice changes that support online teaching. Faculty peer-interviews from the professional development sessions provide stories, rich in qualitative data, about initial experience teaching in digital spaces. Sharing of these stories in the participant group provides diverse perspectives that may impact others. Following the professional development session, the postsession self-assessment includes questions to gather input on the experience of AI-based professional development and participant's personal insights gained throughout the sessions. These qualitative elements encourage individuals to share their stories and contribute to a researcher's understanding of the phenomena being studied (Creswell, 2018). The qualitative elements also allow the researcher to gain an understanding of the faculty members' experience of this professional development offering and the impact on them personally, related to the use of AI.

Before and after the delivery of the professional development program, the survey tool collected faculty self-assessment of their knowledge, skills or behaviors, and attitudes related technology and online course delivery using a 5-point Likert scale. These quantitative data elements were analyzed using SPSS software. The quantitative elements assessed participant shifts in knowledge, skills, and attitudes about online learning following the professional development and the impact on their continued application of online delivery models in the future. The details of the survey instrument are explored later in this chapter.

Integration of data can have a significant impact on the value of the research (Creswell & Plano-Clark, 2018). In addition, the findings are likely to be perceived as more useful to various audiences who may have a preference towards either quantitative or qualitative results; covering both meets the needs of both audiences while telling a more complete story about the application of AI in the professional development context.

Research Procedure

The research procedure section lays out the process for the study, from recruitment to data analysis. This section reviews sampling, data collection, and analysis, and provides an overview of the professional development offering.

Sampling and Recruitment

Purposive sampling is when the researcher selects participants who have a significant relationship to the research topic (Seale, 2018). Nonprobability sampling is when the researcher targets a particular group recognizing that it does not necessarily represent the wider population (Cohen et al, 2011). These definitions align to the approach for this mixed-methods case study. Faculty participants who are beginning to teach online were recruited from the alumni of the introductory course “Level Up - Learning to Teach Online” that was offered in the Teaching and

Learning Centre. The "Level Up" course was offered to all faculty at the case study institution, but the target population of this study was those with a novice level of experience teaching in online formats. Subsequently, faculty respondents to the recruitment who had more than two years' experience teaching online courses were excluded. Participants were recruited from a population of faculty who had already placed a value on quality teaching as indicated by their completion of the training to support online teaching at the start of the pandemic.

In this mixed-method case study, a recruitment letter (Appendix B) was sent, via email, to the alumni of the learning to teach online course. The desired sample size was selected to align to the usual group size for professional development offerings of this nature at this institution and to keep the study within manageable limits. The number of faculty participants was anticipated to be between 20-24 participants.

Once respondents submitted consent (Appendix C), they were sent the link for the initial self-assessment and demographics collection. Inclusion criteria were the completion of the "Level Up" course, full or part time faculty status, and less than two years' experience teaching online. The recruitment resulted in the response of thirty-six faculty, of which three were excluded for having greater than two years' experience teaching online and seven withdrew related to scheduling conflicts. The initial number of participants who met the criteria for participation was 20.

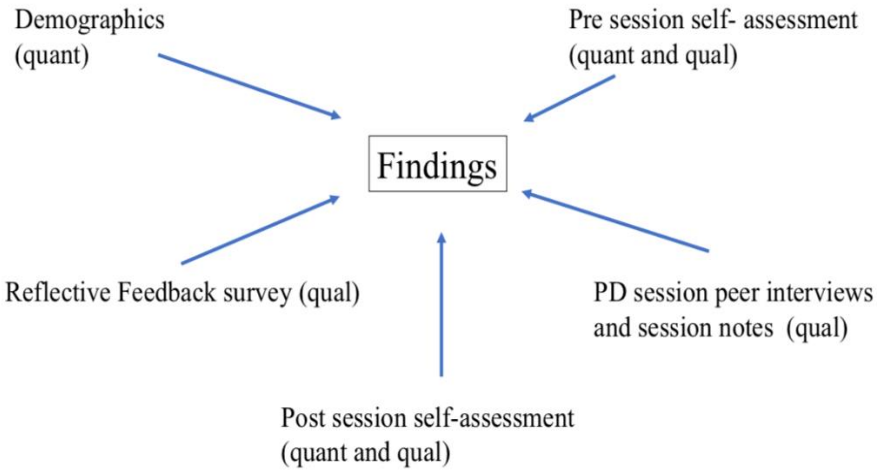
Data Collection and Analysis

Case studies afford researchers the opportunity to use a variety of types of data and data sources (Cohen et al., 2011). The study used a mix of quantitative and qualitative data elements (Figure 4) to support understanding of the starting competencies and demographics of the target population to explore their professional development experience and their initial delivery of

online learning. Following recruitment, the identified participants completed an initial survey that collected demographic information as well as a presession self-assessment (Appendix D) related to their comfort with technology, experience teaching online, and their knowledge skills and attitudes with regards to online delivery models.

Figure 3

Sources of Evidence



Highlights of the faculty stories about their experience teaching online were shared during the professional development offering, described below, and contributed to the collected qualitative data. Throughout the professional development sessions, participants reported group work either verbally or in the shared notes of the conferencing tool. Between sessions four and five, participants completed a reflective feedback questionnaire (Appendix E) to guide their development plan and share their reflections with the researcher. Following the professional development offering, participants repeated the self-assessment instrument and a course evaluation (Appendix F) to determine if their perceptions had shifted and to provide feedback on the learning experience. The qualitative data were collected to deepen understanding and validate

and expand on the quantitative survey results. Possible convergence or divergence related to experiences, disciplinary backgrounds, and comfort with technology helped the researcher to assess for possible themes or patterns.

Triangulation, which supports construct validity (Yin, 2018), can occur through the collection of multiple sources of data by using more than one investigator and by the use of more than one method. Data reviewed individually and then collectively can illustrate the existence of patterns of convergence or divergence of the findings (DeCuir-Gunby & Schutz, 2017). The convergent design facilitates this type of data collection and analysis, where the qualitative data can be used to assess the validity of the quantitative findings (Fetters et al, 2013).

All surveys were distributed electronically, via a direct link, using Survey Monkey software to facilitate ease of collection and analysis. This approach also allowed participants time for reflection and a sense of privacy, which was thought to contribute to more thorough responses, adding to the richness of the data.

Descriptive statistics described data through variables such as means, standard deviations, and ranges of scores (Creswell, 2018), and provided the most useful approach for the quantitative component of this study. Descriptive statistics answer questions such as who, when, and to what extent. These elements provide a description of the population that includes age, stage of career, and years of teaching experience. Descriptive data supports identification of trends and variables related to the phenomena being explored (Loeb, et al., 2017). Descriptive statistics were calculated using SPSS. The pre and post self-assessments were analyzed using the Wilcoxon (paired) Signed Rank Test to assess for shifts in scores on individual elements of the survey and across categories of questions. The Wilcoxon Signed Rank Test is the non-parametric equivalent to the t-test for two related samples (Cohen et al, 2011). It is used to measure the difference

between two sets of data from two points in time and provides a significance level of that change.

Qualitative data were reviewed using thematic analysis to support identifying and interpreting patterns of meaning (Clarke & Braun, 2017). This process involved an initial review of the data, identification of codes that may relate to the research question or the theoretical framework; following the assignment of codes, and identifying themes or patterns (Clarke & Braun, 2017). Once themes have been identified, a quality check to assure there is enough data to support each occurs and the themes are defined (Clarke & Braun, 2017). Analysis was done by hand initially and then in MAXQDA. The documents were reviewed first as an overview and, where obvious, codes/themes were highlighted along with impactful quotes. A second review looked for patterns in these highlights and assigned codes to group them together. Following this, the codes were grouped into themes, the themes labelled, and a coding tree created. A final review reassessed the data for the identified codes and themes displayed in the results.

The two sets of data were connected by analyzing each set separately and then together for relationships that help deepen understanding or context (Fetters, et al., 2013). Data integration described in the results portion of the study using thematic or trend statements and a narrative integration of the quantitative and qualitative elements (DeCuir-Gunby & Schutz, 2017). In order to achieve the benefit of the mixed-method approach, the integration of the quantitative data set and the qualitative data set supports identification of findings that would not be achieved if one were done without the other (DeCuir-Gunby & Schutz, 2017). For example, the Likert Scale results were supported or disputed with the narrative comments provided by participants.

Instrumentation

The researcher did not find an existing survey tool that thoroughly assessed the elements of interest related to technology adoption practices for teaching and learning that met the needs of this study. Specifically, what were faculty attitudes, values, and beliefs about pedagogy and technology?. Instead, an instrument was created to meet the needs of this study. Insights from the Technology Pedagogy Content Knowledge Tool (TPCK) which measures the intersection of technology, content and pedagogical knowledge (Mishra & Koehler, 2006), and the Technology Acceptance Model (TAM) which suggests that ease of use and perceived usefulness of technology are predictive of user attitude, behavioral intentions to use and thus actual usage (Davis, 1986). These scales were utilized to adapt or write the instrument questions. Careful wording of questionnaires is imperative to obtain relevant responses and pretesting is crucial to their success (Cohen et al., 2011). To ensure clarity of questions and gathering of useful data, pilot testing of this questionnaire was done with four educational development colleagues and faculty colleague volunteers who were new to teaching online during the pandemic and thus representative of the targeted population. The goal was to gather feedback on the instructions, the questions, and the format and to identify redundant elements instead of collecting data (Cohen et al., 2011). Feedback was received about the wording of some questions and the Likert scale indicators and questions that did not specifically link to the research focus. In addition, it was reported that the survey was long, and suggestions were provided for reorganizing to combine multiple factors into a question. The self-assessment instrument was revised and used for the study; the instruments have been included in Appendix D and Appendix F.

Foundational questions related to participant demographics were included to support the description of the sample population and to describe results according to related groupings.

These included years of teaching experience, discipline, and use of technology prior to and since the pandemic. The following questions were adapted from the TPCK, (Mishra & Koehler, 2006). The researcher identified these questions as components faculty should reflect on as they consider their development needs to continue teaching in digital spaces.

I have the technical skills needed to use technology.

I can learn technology easily.

I can select effective teaching approaches to guide students learning online.

I can use a wide range of teaching approaches in an online course.

I am confident about my knowledge of online teaching methods.

I can choose technology to enhance student learning.

I am thinking critically about how to use technology in my course.

I feel confident about making technology decisions that support my pedagogy.

Additional questions were added to summarize faculty perception of skills and knowledge related to technology-based teaching:

I am confident about my ability to design an online course.

I am confident about my ability to facilitate an online course.

The Technology Acceptance Model (TAM) (Davis, 1986) has typically been utilized for specific technology evaluation such as word processors or web browsers, however it was utilized by Masrom (2007) where e-learning was the system being evaluated by students. The following questions were inspired by TAM and written by the researcher to explore the attitudes of faculty related to use of technology in their teaching practice and thus their intended use going forward.

I see technology as an important element of a 21st century education.

I have a positive attitude about teaching online.

I feel the need to adjust my teaching practice to prepare students for their future.

I have a clear idea about how I want to develop my teaching practice for online delivery.

I have a professional development plan that addresses desired change in my teaching practice.

How likely are you to teach in a blended or online format following the pandemic?

To answer the second research question, "What is the faculty experience of AI-based professional development?", a reflective feedback component was added to the professional development experience, seeking data about the specific experiences and learning of each participant (Appendix E). These open-ended questions served two purposes: (1) to draw participant awareness to their learning to support their development of a personal professional development plan and (2) to share this reflection with the researcher to contribute to the qualitative element of this study. The open-ended questions were as follows:

1. What competencies or strengths have you discovered that will continue to be part of your teaching practice?
2. What opportunities for development did you discover?
3. What are your personal learning goals?
4. What pedagogies and technologies are you inspired to explore further?
5. What was the most impactful learning you had during our time together?
6. What 3 wishes to do you have for your future related to teaching and learning?

Additionally, the post session self-assessment (Appendix F) asked a few course evaluation questions, specifically:

This professional development experience provided me opportunities to:

1. Reflect on my teaching practice during the pandemic.

2. Supported me to reimagine my future teaching practice.
3. Supported me to develop a plan to innovate my teaching practice.
4. Learn from my colleagues about technology and online teaching strategies.
5. Helped me to identify strengths and opportunities I had not considered.
6. Increased my comfort to continue teaching online.

Professional Development Sessions (Intervention)

The professional development offering was a ten-hour course that was comprised of five synchronous learning sessions for faculty and the development of a personal development plan. A detailed outline of the sessions is provided in Appendix A. The researcher served as the AI facilitator for the sessions which occurred via video conferencing. The institution's Learning Management System, Moodle, was used to house and provide a brief overview of the sessions and contained printable handouts for participants not comfortable taking notes in digital spaces. Synchronous sessions for collaborative components occurred in the conferencing tool BigBlueButton where faculty were led through the AI 4-D cycle. During the five synchronous sessions, participants were exposed to the AI framework, its principles and the rationale for its selection to support this study. The goals of the workshop series were to: (1) support faculty to reflect on their knowledge skills and attitudes about online course delivery, (2) evaluate their initial experiences teaching online in order to identify their strengths, (3) discover opportunities for future development that will encourage their ongoing use of an online delivery model. During the sessions, participants used AI strategies such as peer interviews, personal reflections, and course activities to consider their personal path forward with online learning.

Validity, Reliability and Authenticity, Verifiability

In a mixed-methods case study it is important to ensure the evidence of rigor is embedded in both the quantitative and the qualitative elements. Reliability is the degree to which methods produce stable results, in other words, if the same research were carried out on a similar group of participants, in a similar context, similar results would be found (Cohen et al., 2011). Validity or reliability in qualitative studies might be achieved through honesty, depth, and richness of the data; whereas in quantitative studies, validity or reliability is achieved through careful sampling, appropriate instrumentation, and appropriate statistical interpretation of the data (Cohen et al., 2011). The opportunity for participants to validate the themes interpreted by the researcher provides verifiability and authenticity.

In this study, participants were invited to hear a brief presentation of the findings and were able to provide feedback concerning the accuracy of interpretations and to ask questions about the study. A small focus group consisting of 25%, or 5 of the participants resulted, and those who attended agreed with the researcher's interpretation of the session notes. They also agreed with the themes identified and two participants provided considerations for some of the names assigned to the themes; which subsequently resulted in the adjustment of some of the names assigned to these themes to reflect alignment to AI while avoiding representation of bias.

Generalizability is the extent to which the data collected may be useful to understanding similar situations within specific groups or outsider communities depending on the circumstances (Cohen et al., 2011). From a quantitative perspective, generalizability aligns to external validity and is concerned with assessing to what extent the findings can be applied to other settings or populations. In this case study it was anticipated that the results would be applicable to a similarly diverse group of higher education faculty with novice experience

teaching in online contexts. The details of the case facilitate consumers of the study to identify elements common in their environment and, as a result, determine its applicability to them. While it is difficult to generalize findings from a small study, the similarity of context from one higher education institution to another could increase the potential that the results from this study could be replicated with similar findings.

Construct validity is the degree that a particular measure conforms to the context in which it is located (Cohen et al., 2011). This can be achieved by looking for counter examples which might falsify researcher assumptions thus confirming the validity of the evidence. It can also be achieved through correlation of multiple instruments or measures and alignment to the literature and in qualitative research by ensuring that the categories identified by the researcher are meaningful to the participants themselves (Cohen et al., 2011). The researcher compared the quantitative and qualitative results seeking areas of convergence or divergence as a means of correlating the instruments.

While this study did not use a standardized survey tool, the researcher piloted the tool with volunteer colleagues, from outside the participant group, to test both the research procedure, the instrument, and the data collection and analysis. In addition, the fact that a number of the instrument items were from established tools and the pilot testing of the instrument enhances reliability by ensuring common understanding of the questions and as a result consistency in how they are answered by participants.

Qualitative research is typically concerned with authenticity. Authenticity evaluates a study based on how well it succeeds in enhancing participant understanding and empowering them to act. In general it refers to the truthfulness of information in a research report (Seale, 2018). Authenticity is supported by the researcher involvement in the professional development

allowing direct observation of the interactions. In this study, participants verified the qualitative data in the professional development sessions and through the course evaluation survey.

Compliance with ethics standards contribute to the rigor of the study (Ali and Kelly, 2018). The researcher obtained ethics approval from both their academic institution, Athabasca University, and the case study institution.

Limitations

All research approaches have limitations. Creswell (2013) defined research limitations as factors typically beyond the researcher's control that may affect the results and interpretation of the study. The real limitations of this study include time, pandemic context, and sample size. The potential limitations included researcher bias, participant bias, and participant attrition. These elements are described below.

Time is a limitation for the study. As a doctoral student, it is important to select a manageable project; selecting this particular project is linked to the world context which has an unknown timespan and urgency to move forward. Directly related to time is sample size. In order to keep the study manageable within the allotted time, a smaller, more limited study has been selected. The sample size was selected to manage the technology needs and the desire to build community in the professional development sessions. Consequently, the researcher's ability to apply the findings to contexts outside of their own are limited (Cohen, et al., 2011).

An additional limitation was the pandemic, as the COVID-19 pandemic physical distancing requirements made it essential that the intervention be facilitated online as opposed to in-person which may be more typical of an AI intervention. However, the pandemic provided the impetus to move faculty into technology-mediated spaces and an online-delivery approach. It is also important to note that the barriers to adoption of technology and online learning identified in

the literature remained throughout the pandemic context. It was intended that the AI professional development sessions reframed the participants' perspectives of these barriers and help them to move forward with sustained change in their teaching practice.

Case studies have a number of inherent limitations that include being subjective and potentially biased (Cohen, et al., 2012). The researcher is an educational developer at the case study institution and AI facilitator and trainer. This research directly aligns with the employee role of supporting faculty teaching practice development and as a result, does not create conflict. The study was born of the knowledge these two complementary roles bring together and an altruistic desire to support faculty.

Ethical Considerations

Questionnaires are considered an intrusion into the life of the respondent (Cohen et al., 2011) although the sensitivity of questions, in this case, is relatively low. Despite the low sensitivity of the questions being asked, faculty may feel protective of their teaching practices or philosophy, and as a result, may find their willingness to share openly diminished. They may also have concerns about the information shared being considered as a measurement of performance. There was no known psychological risk to participants, and participation was voluntary. Written informed consent was obtained at the beginning of the study and confirmed orally at the beginning of the workshop (Appendix C). Participants retained the option to opt out at any time. Data was stored in password protected, cloud-based storage and on a password protected computer. Reporting of final study results is in aggregate to protect privacy, and specific faculty data will never be shared with anyone. The potential for the information shared to benefit their learning experience was a useful counterbalance for participants. In terms of data

collection, there was minimal risk of physical, psychological, social, or economic issues with participants. There was no special needs population to be considered.

As a student, I was required to receive ethics approval (Appendix G) at Athabasca University and from the institution where research was undertaken. Key elements of the application process included: statements of respect for persons, requiring respectful interaction, the confidentiality of data, and the right to withdraw at any time. Concern for welfare requires clear articulation of risks and benefits during recruitment, data collection, and instrument selection. All of the components of the study were reviewed by the ethics committees.

Summary

This study assessed how AI can impact both the experience and the outcomes of faculty development related to faculty adoption of technology and online course delivery by supporting faculty as individual learners to reflect on the strengths of their initial experience teaching online. The professional development intervention in this study facilitated collaboration and idea-sharing with colleagues to support aspirations for their future online teaching practice.

The efficacy of blended and online learning is well supported (Fendler et al., 2018; Nguyen, 2015). Blended and online course design have the potential to increase access to education for learners and develop and consolidate digital skills for both faculty and learners. For the use of online course delivery approaches to be adopted more fully, faculty engagement is vital. As universities move to more blended and online teaching and learning, educational developers are situated to encourage, support, and facilitate the shifts in teaching practice required to achieve confidence and competence with online education delivery. The purpose of this study was to explore the application of an AI approach to faculty professional development that supports reflection and reimagining of faculty teaching practice to include technology and

online course delivery. This mixed-method case study was framed from a pragmatic perspective that combines pre and postquestionnaires of self-assessment knowledge and learning. It is anticipated that the use of AI in this faculty professional development opportunity could have a positive impact on both faculty experience of change as well as their adoption of online course delivery models.

This study contributes to the research on applications of AI in educational contexts, possibly provides a strategy for use by educational developers, and role models appreciative teaching strategies. The study overall meets the objective of beneficence, as it holds the potential to improve educational development practices and, consequently, future teaching practices of those who participate in the professional development opportunity. Subsequent chapters share the results, discussion, and conclusions from this study.

Chapter 4. Results

The purpose of this mixed method case study was to identify how the use of AI in faculty professional development impacts faculty experience of their teaching practice as well as to explore how AI supports their adoption of technology and online delivery models. There were two research questions that guided the study:

1. What is the faculty experience of AI-based professional development?
2. How does the use of an AI approach by educational developers support faculty adoption of technology and online delivery models?

The participant group was comprised of twenty faculty members with less than two years' experience teaching in blended or online environments. This chapter will provide a detailed review of the results collected from multiple elements of data collection, beginning with a survey which includes participant use of technology before and during the pandemic, a prepost professional development self-assessment, a reflective feedback survey during the professional development and course evaluation as well as session notes. The demographics and technology components served as a means to contextualize the participant group and informed the possible study limitations. The quantitative and qualitative data will be shared for each of these and then analyzed together to identify areas of convergence. Discussion of these results will occur in the subsequent chapter.

Participant Group

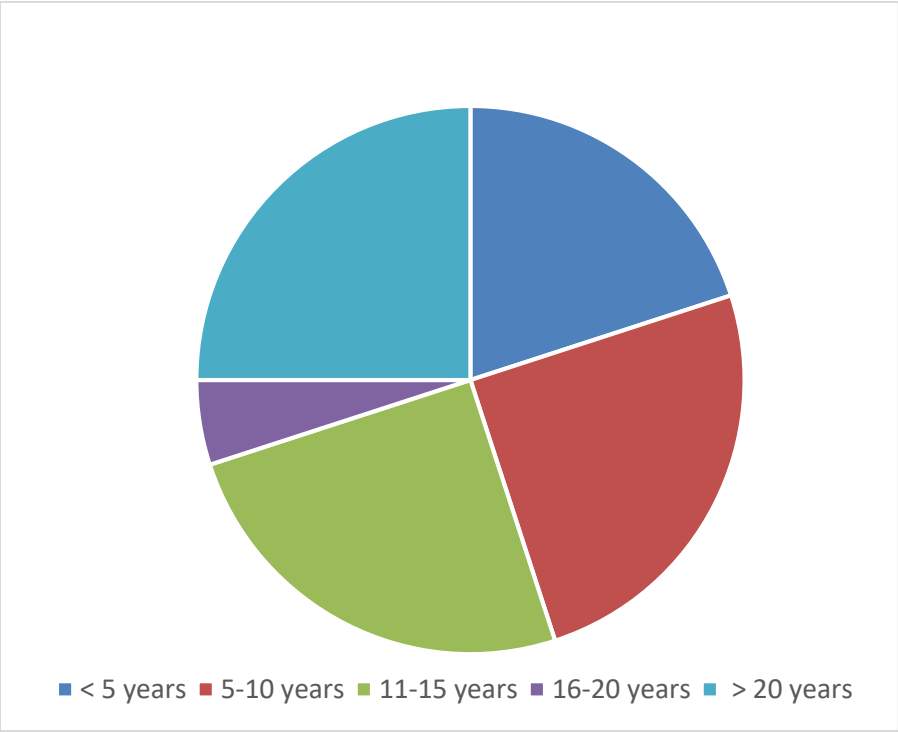
Initially, 36 faculty expressed interest in participating in this study. Three faculty were excluded as they had more than two years' experience teaching in blended or online environments; an additional thirteen faculty withdrew related to schedule conflicts for the professional development sessions, resulting a final participant group of 20.

Demographics

Description of the participant group was collected in the initial survey and reported relatively equal distribution of years teaching in a post-secondary context.

Figure 4

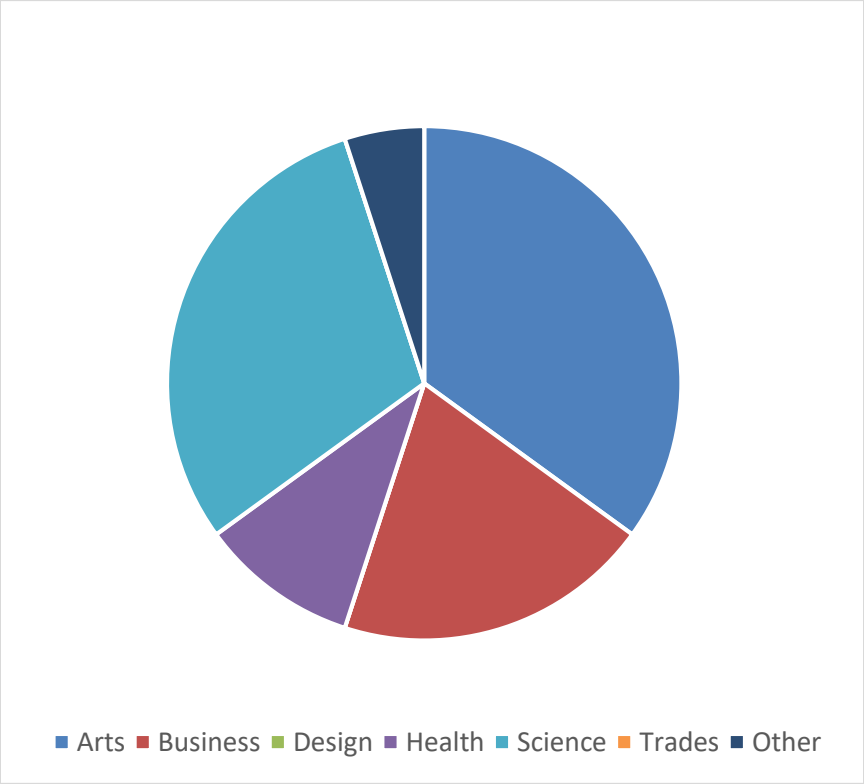
Participant Years of Teaching Experience



Specifically, four participants had less than 5 years' experience; 5 participants had 5-10 years' experience; 5 participants had 11-16 years' experience; 1 participant 16-20 years; and 5 participants had more than 20 years teaching experience. See Figure 4 above. The teaching disciplines represented were as follows: Arts seven, Business four, Health two, Science six and Other one. See Figure 5 below.

Figure 5

Participant Teaching Discipline

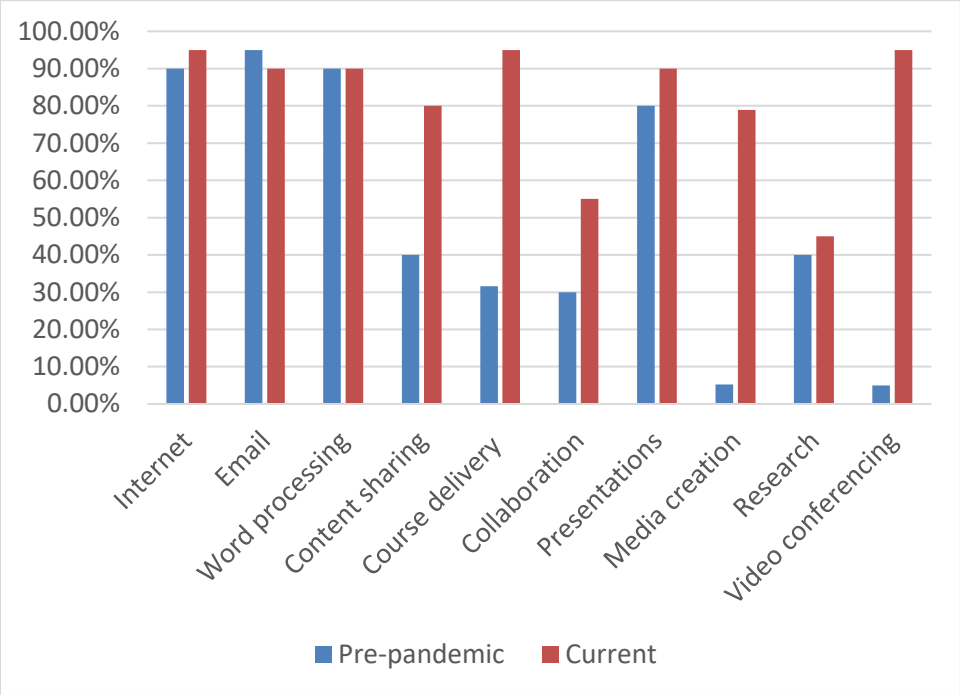


Use of Technology

Participants were asked about their use of technology related to a variety of tasks, pre-pandemic and in their current practice. Specifically, they were asked about their regular use of technology including the internet, email, word processing, video conferencing, content creation, course delivery, collaboration, presentations, media creation, and research. Results of this comparison are displayed in the figure below.

Figure 6

Technology use Comparison



Prior to the pandemic, 80-90% of participants reported they regularly used technology for the internet, email, word processing, and presentation creation. In addition, 30-40% of participants used technology regularly for research, content sharing, collaboration, and course delivery. Notably, there was minimal use of video conferencing and media creation tools before the pandemic.

At the start of the study, the participant current use of technology had shifted to include regular use of technology for video conferencing and media creation. Specifically, 90% of participants or greater reported regular use of technology for internet, email, word processing, creation of presentations, and for video conferencing and course delivery. Additionally, 80% of participants reported regular use for content sharing and media creation. The use of technology

for collaboration increased incrementally to 55% and research remained lower at 45% of participants.

The results of this question compare technology use over time and were analyzed using the Wilcoxson Signed Rank Test which provides a p value for significance and a z score which was used to calculate effect size.

Table 1

Participant use of Technology

Technology	p value	z Score	Effect size (Cohen d)
Internet	0.157	-1.414	-0.22
Email	0.317	-1	-0.15
Word processing	1	0	0
Video conferencing	0	-3.946	-0.62
Content sharing	.006	-2.762	-0.43
Course delivery	.001	-3.275	-0.51
collaboration	.014	-2.449	-0.38
Presentation	.317	-1	-0.15
Media creation	0	-3.508	-0.55
Research	.317	-1	-0.15

Pre-pandemic use of technology was compared to current use of technology, significant increases were noted related to video conferencing tools which increased by 90%, media creation by 73%, course delivery by 65%, content sharing by 40%, and technology use for the purposes of collaboration increased by 25%.

Professional Development Sessions

All participants engaged in a series of five professional development sessions framed around the AI 4-D Cycle (Figure 1)- of Discovery, Dream, Design, Destiny/Delivery. This process is used to explore a positive focus of inquiry to better understand when participants have had positive experiences with a particular phenomenon, in this case teaching online, and what made the experience positive so that similar experiences can be created in the future. These sessions occurred in a video conference environment that supported large group and breakout group activities. There were no technical issues in this digital space. The researcher served as the AI facilitator. The professional development sessions collected a number of sources of data: session transcripts, participant created shared notes, researcher observations, and the reflective feedback survey. This section details the data collected from these sources and provides an overview of the professional development sessions.

Session One—Build Community

The focus of this session was building a community. Participants introduced themselves and shared an image or object that represents them at their best as an educator. An overview of the sessions and the research project was provided, and participants established appreciative agreements that would support their learning and allow each of them to bring their best selves to the sessions.

Faculty stories about what represents them at their best reflected a number of references to plants, gardening, growth, and flourishing. One participant said, “as instructors we plant seeds, pull out weeds, and help find the way to the light.” There was reference to the nurturing of students and that the passion for teaching and for changing things up supports the growth in instructors as well. Participants referred to helping students get their hands dirty, providing

supportive, focused, calm, encouraging environments that stimulated curiosity. Another participant spoke of questioning why some things grow in an environment and other things don't, noting that it's about the relationships between things and when we understand those connections, we can grasp complicated topics and processes.

Session Two—Discovery

The focus of this session was participants hearing each other's stories. The positive focus of inquiry provided by the researcher was "Teaching online at its best". This was the appreciative framing that underpinned the interview questions they asked one another. The exercise involved participants interviewing each other, in pairs, for 15 minutes and asking their partners the following questions:

1. Think about the best experiences you had teaching online over the past year. Tell me a story about one of these experiences, what excited you, inspired you and engaged you?
2. Without being humble, what did you value about yourself as an educator in this experience? What are you proud of? What do you want to continue to do, moving forward?
3. What were some of the elements that contributed to your success? These may be contributions from others within your department, across the institution.
4. What are your hopes for the future of teaching online at its best?

Within the same session, highlights of these interviews were shared in the large group sessions and used to identify common experiences as potential areas of focus for the next steps of the AI process. The participants identified that their stories focussed around student-centered education, blended learning environment, community, creativity/innovation, co-learning, communication, collaboration, and engagement. The collaborative session notes provided the

researcher with some insight to what occurred in the breakout rooms, as the researcher did not participate in these conversations. During the “discovery” peer interviews, participants revealed they were excited, engaged, and inspired by being vulnerable; by creating new resources and new courses; about using technology; and finding places that things worked out. One participant stated, “I am proud for taking the time to adapt my course for online”. They were also excited to build their confidence and to engage students in a new way, building a sense of community. In response to the question about what they valued most about themselves was their willingness to experiment, play and try new things, one participant stated, “I felt the fear and did it anyway”. The pattern of valuing engagement and community with students was repeated in the responses to this question. In the participant responses to what contributed to their success, the most frequently cited response was the support they received from the Teaching and Learning Centre staff and workshops. There were also multiple comments about trying new things, embracing technology, and good preparation. Collaboration with peers, within and outside their department, as well as engagement of students, and learning alongside them were also noted.

In the report out from these discovery interviews participants shared what AI refers to as quotable quotes. Participants identified quotable quotes that stood out in each other’s stories, namely, the key meaning taken away from the “discovery” component of the AI process. Some quotable quotes identified by the participants included "If I use the skills I have in organization, I found I could do this”, “I could design and structure a course that worked", "I would like to keep at this until I feel I’m really doing a good job”, “I want to learn how to do what I do better online” and “teaching online ‘can feel alive’".

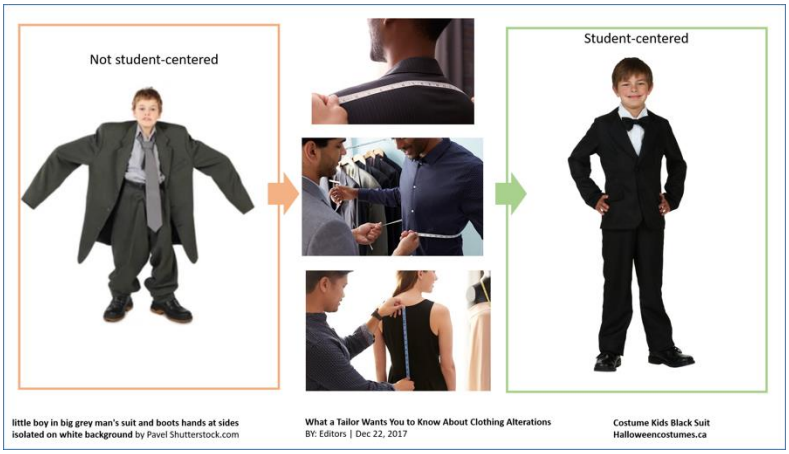
Session Three—Dream

In Session Three, participants voted on the areas of focus identified in the previous session, to narrow down to four topics for the small group work in the remainder of the AI process. The participants selected the topic they wanted to work on and stayed together for the remaining sessions. This resulted in the generation of the following four topics: student centered education, creativity/innovation, co-learning (which included collaboration), and engagement. In their groups, participants moved to the Dream phase of AI where they were asked to create images of the ideal future related to their selected theme, and positive, affirmative statements called provocative propositions (Watkins, 2011).

During this session, the researcher noted the synergy between the themes that each of the groups was working on. In addition, the positive comments about this part of the AI process reflected fulsome engagement with both the image creation and the inspirational statements. The group who was working on student-centred education prepared an image of a person wearing a suit that was way too large and use this as an analogy to talk about the need for tailoring education to meet the needs of a variety of learners and that one size did not fit all.

Figure 7

Student Centered Learning Visual



The group working on the theme of creativity and innovation reflected back on their childhood or that of their children and talked about the Magic School Bus cartoon and the value that technology and augmented reality could help take us out of our regular conditions on an adventure in the learning environment.

Session Four—Design

In Session Four, participants moved to the Design phase of AI, where they were asked to consider what they needed for their vision to be a reality. The small groups brainstormed potential actions that would help them achieve the ideal future vision in the previous session. This brainstorming served to move participants toward action-planning for themselves as individuals and the collective process created energy and a focus on possibilities.

Between session four and five, participants were asked to reflect on their personal journey. They responded to six open-ended questions, designed to elicit qualitative input that corresponded to the course evaluation questions which are summarized in Table 2 below:

1. What competencies or strengths have you discovered that will continue to be part of your teaching practice?
2. What opportunities for development did you discover?
3. What are your personal learning goals?
4. What pedagogies and technologies are you inspired to explore further?
5. What was the most impactful learning you had during our time together?
6. What 3 wishes to do you have for your future related to teaching and learning?

The first two questions were posed to draw participant attention to their strengths during their initial teaching experience online and the subsequent opportunities for development they had identified. The responses to these questions were intended to contribute to the researcher's understanding of participant experience in the AI based professional development and to support understanding of the shifts in the responses between the pre and postself-assessments.

The next two questions were asked to encourage action-oriented thinking as the participants moved toward developing their personal development plans. Participants reported that they were inspired by their colleagues to explore a variety of technology tools, in order of priority, media creation (6 respondents), ePortfolios (4 respondents) and interactive course elements using H5P (3 respondents). The open education resources and pedagogical approaches, not previously known or considered, were of interest to participants. Curiosity was high to know more about open pedagogy, decolonial pedagogies, and more collaborative approaches to facilitate learning. Blended course design including engagement and presence were noted as areas for professional development. There was a focus on student centeredness, development of community, and becoming better facilitators of learning. Their learning goals were aligned to these topics.

Question five inquired about the most impactful learning during their time together as a means to understand their experience of AI based professional development. Numerous participants talked about realizing they had a shared common experience across different parts of the organization, similar challenges, feelings, and frustrations. The specific results of this particular question are expanded on in the qualitative findings for research question one.

The final question posed related to creating visions of an ideal future and asked about the participants' wishes for the future. The results were categorized into personal wishes, relational wishes (those that involve colleagues and students), and wishes related to organizational supports. Individual participants wished for confidence, continued learning to enhance their technical skills and their approach to teaching, and ongoing curiosity. One participant stated that "I hope to continue to rethink the way I was taught and the things I take for granted". The relational elements focused on building community with one another and with students and the desire for "a climate in the department where teaching and learning are a priority". From an organizational perspective participants wished for support to try new things, less restrictive policies that they perceive limit innovation as well as increased access to hardware, software, time, and resources.

Session Five—Delivery/Destiny

In Session Five, each participant had an opportunity to share their personal plan with the group. The sharing process further supports each participant's creation of an ideal future by inspiring others in their subsequent plans. By verbalizing their personal plans, participants are taking the first step toward action, thus, potential towards its achievement.

Research Q1. What is the Faculty Experience of AI Based Professional Development?

Quantitative

A majority of participants had a positive experience in this AI professional development, responses to individual questions are summarized in Table 2 below. Participants indicated that the sessions had provided an opportunity to reflect on their pandemic teaching experience and allowed them to consider what their practice might look like in the future. Additionally, the professional development sessions had increased their comfort to continue teaching online and they enjoyed the opportunity to share experiences with colleagues across the institution and 45 % (N=9) strongly agreed that they had learned about technology and online teaching strategies from one another. Seventy percent (N=14) agreed or strongly agreed that it helped them to identify strengths and opportunities in their practice that they had not previously considered. Finally, 75% percent (N=15) agreed or strongly agreed that the sessions helped them to develop a plan to innovate their practice.

Table 2

Course Evaluation Responses

These PD sessions	Strongly agree	Agree	Neutral
Reflect on my teaching practice during the pandemic	13	7	0
Supported me to imagine my future teaching practice	13	6	1
Supported me to develop a plan to innovate my teaching practice	8	7	5
Learn from my colleagues about technology and online teaching strategies	9	8	3
Helped me to identify strengths and	8	6	6

opportunities I had not previously considered			
Increased my comfort to continue teaching online	10	9	1

Qualitative

The reflective feedback questions collected between sessions four and five contribute qualitative data that contributes to both research questions. Reflective feedback question five is directly aligned to research question one. Participant response to *What was the most impactful learning you had during our time together?* The responses were categorized as experiences that were personal, relational and explicitly connected to the AI process oriented. These categories were selected naturally as the pattern emerged from the results, as the comments referred to self, to interactions with others or to the process itself. The majority of respondents focused on relational impacts, in particular the interactions with their peers from across disciplines and the sharing of experiences and strategies. There were four comments about the AI process and how impactful it was to focus on positives and possibilities, and the *dream activities* to create visions for the future. There were three comments focused more on the personal experience of being willing to step away from the comfort zone and to enhance the teaching experience, there were two participants who did not provide comments.

The most impactful part of the professional development series reported by participants was the interaction with their peers. The opportunity to discuss challenges and successes, share strategies and perspectives across departments and disciplines provided increased awareness of how similar their experiences are. One participant wrote, “it was eye-opening to realize that I am not alone in my frustrations with different levels of the organization but faculty from across the

institution share my dreams." Furthermore, they liked the opportunity to collaborate with one another to exchange strategies, share ideas, and discuss the future; in particular "the common themes we agree on, while learning about the 'hidden gems' of how to enrich both the teaching experience for us as instructors and the learning experience for our students".

The researcher observed participants openly shared their feelings, ideas and perspectives as they imagined and planned for the future and noted this is not typical in traditional professional development sessions. Participants reported they were impacted by the dream phase of AI "coming up with visions of the future, both in small groups and on my own". Another participant wrote "I love analogies and I find them really helpful to visualize an idea. It was really great to work together to make an image that represented student-centered learning" and to see that "with proper tethering, there is safety in exploring the unknown and the imaginary".

The AI "process of focusing on 'what's working' rather than what went wrong or what can be improved" was also noted. Participants commented about focusing on the positive and what is possible and exploring the unknown and the imaginary. "These sessions helped me identify what I was already doing well, and it was rewarding to appreciate oneself".

Integration of Quantitative and Qualitative Data

The integration of data reflects convergence as the open-ended feedback and the numeric assessment both reflect an overall positive experience for participants. This is displayed in Table 3. The questions with the least agreement in response were number three and four; (3) *this professional development experience provided me opportunities to develop a plan to innovate my teaching practice* and (4) *this professional development experience helped me to identify strengths and opportunities I had not considered*. While agreement in the Likert questions was

more varied, they were no overtly negative statements, two participants stated they had not identified any development opportunities.

Table 3

Faculty Experience of AI Based Professional Development—Joint Display

	Strongly Agree (N=)	Agree (N=)	Qualitative data sample (as direct quotes from participants)
Reflect on my teaching practice during the pandemic	13	7	During these sessions I was happy to recognize many aspects that I was already doing well.
Supported me to reimagine my future teaching practice	13	6	I find that I need to give more agency and power to my students. Be more flexible in my delivery and be more courageous in trying new things. To learn about student engagement and curriculum design so I can create a learning environment that promotes curiosity and where everyone feels safe and engaged. I am inspired to explore H5P technology in my classes. I am inspired to explore concept-based learning, UDL, and open pedagogy
Supported me to develop a plan to innovate my teaching practice	8	7	Continue to learn technology, teaching tools, good teaching practices based on pedagogy I want to become better at community building among students. I want to learn to be a better facilitator

	Strongly Agree (N=)	Agree (N=)	Qualitative data sample (as direct quotes from participants)
			I want to make the online self-guided lessons better to lead students through the steps so they can arrive to meetings with the basics already learned.
Learn from my colleagues about technology and online teaching strategies	9	8	The radical idea of audio comments on assessments rather than written ones importance of simplifying course material (more is not always better) I need to start making more videos and audio recordings I have been inspired to learn about collaborative pedagogies and student-centered teaching/learning I want to learn more about the use of pebble pad and how to use this to create different assignments the blended mode of instruction
Helped me to identify strengths and opportunities I had not considered	8	6	Not being afraid in the face of new things reduced the stress of the Great Change The necessity of going online forced my hand, and I thrived. I use creativity to change and adapt teaching material The ability to deliver the effective online instruction by using various technological platforms and pedagogical approaches Leading with compassion in the classroom

	Strongly Agree (N=)	Agree (N=)	Qualitative data sample (as direct quotes from participants)
Increased my comfort to continue teaching online	10	9	Being a co-learner with students, finding new ways to engage with students I have discovered the opportunity in online learning to let students construct/present themselves as the person they want to be - a more authentic version of how they see themselves rather than what most people see based when they see in face-to-face interactions Opportunities for development include increasing strength and comfort in using technology, develop comfort in the unknown looking for the possibilities optimism for the now and the future.

Research Q2. How Does the use of an AI Approach by Educational Developers Support Faculty Adoption of Technology and Online Delivery Models?

Quantitative

Before and following the professional development sessions, participants (n=20) completed a series of self-assessment questions related to their knowledge, skills and attitudes about teaching in online spaces. The rationale for this paired, pretest/posttest approach, was that the professional development series would facilitate their awareness of knowledge, skills and attitudes about teaching online and as a result support ongoing adoption in the future.

The self-assessment instrument consisted of sixteen questions: four related to skills, six related to knowledge and six related to attitude. The maximum instrument score was 100, if a participant were to answer strongly agree to all questions. The mean response for each question fell within the parameters of the confidence interval at 95%. Analysis across participants for the entire self-assessment revealed a pretest mean of 61.8, median 63, and standard deviation of 8.128 and a post-test mean of 66.4, median 66.5 and standard deviation of 7.00, Kurtosis and skewness indicate a normal distribution of data. The data by participant was analyzed using the Wilcoxon Signed Rank Test which indicated that the post-test result for the entire instrument was statistically significantly higher than the pretest result, z =-2.5386, p-.01108. Effect size was calculated by dividing the z score by the square root of N=40 (cases x2), therefore r=-.402, indicating a moderate effect size using Cohen (1988) criteria of .2= small effect, .5 = moderate effect and .8 = large effect.

Table 4

Self-Assessment Instrument Analysis Summary

	Pretest mean	Post-test mean	Difference	p value	z score	Effect (r=)
Entire instrument	61.8	66.4	4.6	.01	-2.54	-0.40

Additional analysis was done by grouping the questions into three categories (1) skills (Q1, Q5, Q13, Q14), (2) knowledge (Q3, Q4, Q6, Q7, Q9, Q11) and (3) attitude (Q2, Q8, Q10, Q12, Q15, Q16). These all reflect that an increase in the mean score pretest to posttest was present with a small to moderate effect. Results are displayed in Table 5. The shift in mean for

the skills questions was minimal with a pretest M= 15.0 and posttest M=15.95, p =.069, z= -1.818 and r= -0.28 reflecting insignificant change. The shift in mean for the knowledge questions reflected a small shift as the pretest M= 24.25, posttest M= 25.95, p =0.033, z = -2.129, r = -0.33. Finally the attitude questions reflect a more significant shift, pretest M= 22.55, postest M=24.50 and p= .008, z= -2.664, r= -0.42.

Table 5

Self-Assessment KSA Analysis Summary

	Pretest mean	Post-test mean	Difference	p value	z score	Effect (r=)
Skills	15.0	15.9	0.9	.07	-1.81	-0.28
Knowledge	24.25	25.95	1.7	.03	-2.12	-0.33
Attitude	22.5	24.5	2.0	.008	-2.664	-0.42

With respect to comfort with their online teaching practice, there was a minimal overall increase pretest to post-test, p=0.257. Prior to the professional development sessions, participants (N=12) felt somewhat comfortable with their online teaching practice, additional respondents (N=5) stated they felt very comfortable with their online teaching practice. Following the professional development sessions, participants (N=11) felt somewhat comfortable and the remaining participants (N=7) felt very comfortable. This is an overall increase in comfort by five percent.

When asked prior to the professional development sessions how likely they were to continue to teach in a blended or online delivery format following the pandemic, 90% of respondents indicated they were likely or very likely to continue in these delivery models.

Following the professional development sessions this increased by an additional participant for a total of 95% likely to continue teaching in a blended or online delivery approach, p = 0.317.

Review of the statistics by question, Table 6, indicates six questions where the pretest post-test comparison indicates significance p=<.05 with a moderate effect size using Cohen-d. This detailed analysis highlights the elements most influenced by the AI based professional development. An additional 8 questions had more participants increase than decrease their score, but these did not result in statistical significance. There was a single question (Q1) where the post test score decreased in more participants than it increased. The remaining two questions had equal or no change pretest to post-test.

Table 6

Self-Assessment Analysis by Question

Description	Symbol
Where the number of participants who scored the item higher exceeded the number that decreased their score, and the p value reflects significance	
Where the number of participants who scored the item higher exceeded the number that decreased their score, and the p value does not reflect significance	
Where the number of participants who scored the item lower exceeds the number that increased their score	
Where the number of participants who increased or decreased are the same or where the number of participants who scored the item higher does not result in significance	

- Effect size indicated only for those questions where p=<.05

Questions	Overall	Pos sum (N=)	Neg Sum (N=)	Ties (N=)	Significance (p=)	Effect (r=)
Q1. I have the technical skills needed to use technology		1	5	14	.102	
Q2. I can learn technology easily		4	4	12	1	
Q3. I can choose technology to enhance student learning		3	2	15	.655	
Q4. I can select effective teaching approaches to guide students learning online		9	5	6	.175	
Q5. I can use a wide range of teaching approaches in an online course		10	2	8	.017	-0.378
Q6. I know how to assess student performance in an online course		9	3	8		
Q7. I am thinking critically about how to use technology in my course		9	0	11	.005	-0.443
Q8. I am confident about my knowledge of online teaching methods		7	3	10	.1	
Q9. I see technology as an important element of a 21st century education		2	2	16	1	

Questions	Overall	Pos sum (N=)	Neg Sum (N=)	Ties (N=)	Significance (p=)	Effect (r=)
Q10. I have a positive attitude about teaching online		4	1	15	.18	
Q11. I have a clear idea of how I want to develop my teaching practice for online delivery		10	6	4	.151	
Q12. I feel confident making technology decisions that support my pedagogy		12	1	7	.003	-0.469
Q13. I feel the need to adjust my teaching practice to prepare students for their future		7	4	9	.71	
Q14. I have a professional development plan that addresses desired change in my teaching practice		11	1	7	.019	-0.371
Q15. I am confident about my ability to design an online course		8	2	9	.052	-0.306
Q16. I am confident about my ability to facilitate an online course		10	2	8	.021	-0.365

Questions	Overall	Pos sum (N=)	Neg Sum (N=)	Ties (N=)	Significance (p=)	Effect (r=)
Q17. Overall how comfortable are you with your online teaching practice?		5	2	13	.257	
Q18. How likely are you to teach in blended/online format following the pandemic?		3	1	16	.317	

Qualitative

With respect to the impact of AI on professional development and its influence on their adoption of technology and online teaching practices, data was collected from the session notes, which included participant report out from their peer interviews, and the reflective feedback survey. The responses to reflective questions one through four and question six are summarized here. The professional development data elements were discussed previously along with question five which was reviewed in response to research question one.

Reflective Feedback Survey. This section summarizes the data for each question in the reflective survey, this data will be explored in relation to each research question in the discussion section of this paper. Reponses for each question have been grouped into relevant sub-headings to anonymize results and to support the subsequent discussion. For questions one and six had responses that naturally fell into the categories of personal, relational, and organizational. Questions two, three and four related to practice and naturally fell into the categories of

technology, pedagogy and course design. Responses to question five were reviewed previously in response to research question number one.

Reflective question one *What competencies or strengths have you identified as valuable and will continue to be part of your teaching practice?* Participants' responses dominated the personal and relational categories in their responses, with 25 statements reflect personal strengths such as risk taking, growth mindset, facilitation skills, and flexibility and an additional 17 statements that were relational in nature primarily focused on students and collaboration with colleagues. There were seven comments about technology skills and 6 comments about course design and teaching approach. Only two participants noted strength with both technology and pedagogy.

Reflective question two *What opportunities for development of your teaching practice did you discover?* Responses in the relational category were most prevalent with 11 comments focused on student centeredness and peer collaboration, followed by pedagogy with nine responses and technology with five comments. Only four comments were focused on personal elements and again risk-taking and growth were present in these responses. Two participants stated they had not identified any development opportunities.

Reflective question three asked *What are your personal learning goals?* There were 11 responses related to building capacity in the relational elements with a primary focus on supporting students. Nine comments focused on technology platforms and skills including technology selection and nine focused on pedagogy and course design related topics. Only two comments were personal elements, these were related to facilitation skills and creativity.

Reflective question four asked participants to share *what pedagogies and technologies are you inspired to explore?* Details of the frequency of responses for this question are detailed in the table below.

Table 7

Inspired to Explore

Technology - 23	Pedagogy - 6	Course/Instructional Design-9
Making audio and video (6)	Collaborative pedagogy	Blended design
Eportfolios (pebblepad) (4)	Decolonial pedagogy	Course design alignment
H5P (3)	Open pedagogy	Ways to assess learning
UDL (3)	Inquiry based pedagogy	Student centered teaching and learning
OER (2)	Concept based learning	Teaching with emotional intelligence
Blogging/ WordPress (2)	Participatory learning	Moodle quizzes
Technology for engagement (2)		AI
		Flexible and open course policies
		Micro credentials and badging

Reflective question six asked participants *What three wishes do you have for your future related to teaching and learning?* The responses were categorized as personal, relational and organizational and are summarized in the table below.

Table 8

Wishes for the Future

Personal -9	Relational - 12	Organizational - 7
Continue to learn and be curious (2)	Foster relationships and community (3)	Time (2)
Make the desire to learn contagious by modelling it myself	Learning with each other (2)	Resources
Feel confident	Work collaboratively with colleagues (2)	Better video equipment
Enhance my technical skills (2)	Student engagement (2)	Hardware and software support
Develop fun, engaging courses	Learning with students	Less restrictive policies
Continue to rethink the way I was taught and the things I take for granted	Increased connection with students	Support from administration to try new things
Build pedagogical approaches that include empathy and care	A climate in the department where teaching and learning are a priority	

Thematic Analysis

Thematic analysis of the reflective questions, shared notes, and session transcripts resulted in identification of several themes (Clarke & Braun, 2017). Initial review of documents was done by hand and obvious codes highlighted. A second review looked for patterns in these highlights and assigned codes to group them together. Following this, the codes were grouped into themes, the themes labelled, and a coding tree created. These themes have been titled to be appreciative in nature in alignment to the researcher's theoretical perspective, described in Chapter Two, and to facilitate meaning and positive images of the future, as per the AI approach.

Table 7 summarizes the themes, aligned with the related supporting codes used to analyze the data.

Table 9

Coding Summary

THEMES	CODES
A shift in mindset	Affordances of technology
	Benefits of online learning
	Re-evaluate
	I/we can do it
	Take risks
	Vulnerability
	Perseverance
	Trust - students and tech
The power of working together	Community
	Collaborate
	Co-learning
	Culture
	Connection
	Shared experience
Techno-pedagogy development	Tech skills
	Pedagogy
	Learning design
	Teaching strategies
	Innovative practices
	Student centered education

These themes reflect the participant experience of reflecting on their practice before and during the pandemic, the vulnerability of taking risks, the shared experience in the sessions and with other colleagues over the past year as they navigated new challenges and looking ahead at what is needed for the future, personally and collectively.

Summary

The findings in this study overall suggested that AI was a useful tool to support individual and collective reflection about teaching online. There was an overall increase in participants' score from pretest to posttest on the knowledge, skills and attitudes instrument overall and by question category. Of the sixteen-question instrument, only one question result decreased on the post-test, two stayed the same, and the remaining thirteen questions had an increase in aggregate score with six of these being statistically significant. Participant feedback reflects a positive experience with the AI-based professional development experience. Thematic analysis of participant responses to open ended questions, and the professional development session transcripts and shared notes resulted in the identification of three themes: (1) a shift in mindset, (2) the power of working together, and (3) building for the future. In addition to the data that was directly related to the two research questions, the results make reference to faculty vision for future teaching practices and the supports needed to facilitate these visions. Discussion of these findings will occur in the next chapter.

Chapter 5. Discussion

The previous chapter provided detailed results and analysis of this mixed-method study. This included the results for each of the questions asked in the pre and post session self-assessments, as well as the open-ended responses for the reflective feedback components. Themes identified during the professional development sessions were also provided. This chapter discusses how these results align with the literature, the potential implications, and explores recommendation for action and the limitations of these findings. The subsequent chapter will provide conclusions and potential opportunities for further research.

Evidence has indicated for quite some time the need to reconsider the delivery of higher education. Online learning has been suggested as an approach that can provide flexible, student-centered education (Means, et al., 2009; Picciano, et al., 2010). Prior to the COVID-19 pandemic faculty use of technology and online delivery approaches was slow to increase across Canada. Studies exploring the barriers identified that comfort in digital spaces, competence with technology and pedagogy, confidence with new practices and concerns about professional image, negatively impact faculty uptake of new technology and online pedagogy (Betts & Heaston, 2014; Bollinger & Wasilik, 2009; Brownell & Tanner, 2012; Picciano et al., 2010, Wingo et al., 2017). It had been noted that, without an experience teaching online, faculty were more concerned about efficacy than those who had taught online (Betts,2014; Betts & Heaston, 2014). The pandemic provided faculty the experience of teaching online, and this study took advantage of the opportunity to use this as a building block toward the future. This research study aimed to contribute to the understanding of how to support faculty adoption of technology and online delivery models through the use of an AI process.

Appreciative Inquiry was selected as the professional development approach for this study as it has been shown to support teaching and learning (Cockell & McArthur-Blair, 2012, Conklin, 2009; Johnson, 2014), community development (Harrison & Hasan, 2013; Mishra & Bhatnagar, 2012), and curriculum development (Bester, 2010; Sandhu, 2015) in higher education contexts. It is also the core of the researcher's theoretical perspective as it aligns to positive psychology, generativity, and constructionist approaches that the researcher asserts provide the foundation of effective professional learning. The study investigated how the use of AI impacted faculty experience of professional development and how it could impact their adoption of technology and online learning.

This study was guided by two research questions: (1) What is the faculty experience of AI based professional development? and (2) How does the use of an AI approach by educational developers support faculty adoption of technology and online delivery models? Data collected from the pre-post professional development self-assessment and the reflective feedback survey provides the elements of this discussion chapter. The data from the professional development activities themselves also add to an understanding of the shifts in technology use, faculty perception of their strengths and opportunities for development, and their aspirations for the future and their learning goals towards achieving it.

This discussion will be centered around key topics including technology use before and during the pandemic, faculty experience with AI-based professional development, and the ways on which AI-based professional development can support faculty adoption of technology and online delivery models.

Technology Use

The demographics question related to technology in the pre-session survey, provided a baseline of technology use for this sample group of faculty. Based on the researchers' prior knowledge of the case study institution's use of technology and online delivery, the technology self-assessment did not reveal any surprising results. Use of technology prior to the pandemic was primarily limited to what could be considered administrative use; this included email, internet, and preparing presentations. Less than half of the participants reported regular use of technology for collaboration, course delivery, content sharing, and research. There was very little use for media creation or video conferencing. This business use continued throughout the pandemic. Not surprisingly, there was a significant increase in the use of technology for course delivery which, in digital spaces, included video conferencing, media creation, content sharing, and collaboration. This aligns with Johnson et al.'s (2020) findings, which reported 56% of faculty reported using new technology methods following the pandemic shift to online delivery. Previous research indicates that faculty concerns about technology combine with other factors to impact motivation to teach in online-learning environments (Jones, 2013). Without competence to use technology tools, faculty have concerns about their image, and how students will perceive their competence and, overall, this can result in them feeling vulnerable in digital spaces. This establishment of technology skills during the pandemic will likely serve as a solid foundation to support the enhancement of technology-based pedagogy in the future.

Faculty Experience

Results indicate that AI-based professional development was a positive experience for faculty. This aligned to the researcher assumption that a strength-based approach to development would be well received by faculty and that the connection with peers would inspire positive

images for the future and action planning to move in that direction. The findings are additive to the previous literature that indicates AI builds community (Kadi-Hanifi, 2014; Sandars & Murdoch Eaton, 2017), increases motivation in learners (Johnson, 2014, Lane et al., 2018), and supports positive learning experiences (Conklin, 2009; Conklin and Hartman, 2014; Scandura, 2017). In addition, faculty experience was significantly impacted by the interaction with their peers and the underlying personal shifts in thinking that moved them toward imagining their future practice.

A Shift in Mindset

Moving from place-based teaching and learning to entirely digital learning environments, almost overnight, might have previously been considered an impossible feat. Participants talked about previous plans to change or update their courses, but time and effort were cited as the reason this had not occurred. Subsequently, the recognition that the pandemic forced a change that they might otherwise not have made, albeit in less-than-ideal circumstances, they were surprised by how well they were able to make the shift. One participant stated, “we can do more than we thought we could!” This section explores vulnerability, reflection, and the subsequent reimagining of practice that contributed to the participants experience in the AI-based professional development.

Vulnerability. Bates (2000) suggests the most significant issue preventing faculty from moving forward with technology-based practices is their struggle with being vulnerable, being a beginner, and re-evaluating their beliefs. This was reflected in this study where participants observed their vulnerability and described the need to continue trying new things, taking risks, and challenging their perspectives. Branch et al. (2013) evaluated the effect of self-efficacy on readiness for change among faculty and noted that those with higher self-efficacy had a greater

readiness for change. This suggests that professional development needs to provide more than instruction. The findings of this study provide evidence that a human-support and change-management approach would be beneficial in higher education.

Throughout the sessions, there was a consistent pattern about feeling vulnerable, being vulnerable, and taking risks along with the importance of seeing possibilities. Phrases such as "not being afraid to try new things", "I need to model a growth mindset" and "we need to get comfortable with the unknown" are all reflective of openness to continue exploring and learning.

A participant noted needing to let go of being "the master of all things" and others noted the need to "trust the tools" and more importantly to "trust the students". The dialogue in the professional development sessions suggests that faculty lack of preparedness for this pivot forced a vulnerability that may not have otherwise occurred.

Prior research cites concerns about image, group pressure and competence as contributors to resistance (Betts & Heaston, 2014; Bollinger & Wasilik, 2009; Brownell & Tanner, 2012; Jones,2013; Picciano et al., 2010, Wingo et al., 2017). Findings suggest that everyone being forced to move online together allowed faculty to take risks without fear of judgement from colleagues across their departments. Innovation and risk taking became the "thing to do". This is supported by the International Association of Universities report on the impact of COVID 19 on higher education around the world (Marinoni et al., 2020), which indicated that respondents felt the move to distance teaching and learning models had offered an important opportunity for institutions to explore more flexible, blended and hybrid learning possibilities. The report notes that the unplanned distance teaching and learning led to capacity building of faculty who had an opportunity to learn and test new tools and systems for teaching and that a possible shift in mindset may be occurring. This study was designed to explore this possibility and provided a

space for faculty to reflect on their experience as a means to support such a shift in mindset, with the hopes of expanding their future adoption of flexible delivery models. The findings support the view that community and vulnerability play a greater role in faculty adoption of new practices.

Reflection. All of the participants reported that the sessions provided them an opportunity to reflect on their pandemic-teaching experience. One participant commented that teaching during the pandemic required them to go back to the beginning and to question why and how they taught. They noted that these sessions provided an opportunity to examine these questions from different viewpoints while interacting with peers from across the institution.

Reflection to improve practice occurs in two ways— reflection in practice and reflection on practice (Schon, 1983). The first, reflection in practice, is thinking on your feet as you analyze what is occurring. The latter, reflection on practice, is a deeper process where motivations, beliefs and biases are considered. When we embark on these practices with colleagues and hear the perspectives of others, insights are gained that may impact our own practice. Providing educators with co-constructed, collaborative, and reflective professional learning may influence their adoption of similar approaches with their students (Brooks & Gibson, 2012). Additionally, reflection supports contemplation about new experiences and is increasingly important to meet the challenges of a technologically advanced world as we adapt to an ever-changing environment and focus on future transformation (Colomer et al., 2020). There was evidence of this transformation in comments of the participants in this study. For example, one participant said, "*better at this than I expected", "need to reconsider all the magic happens in the classroom", "this experience forced me to think about why I teach the way I do".*

Practice Reimagined.

Almost all participants reported that the sessions had supported them to imagine their future teaching practice. Approximately 75% of participants identified strengths and opportunities for development they had not previously considered. The majority of participants also reported that it helped them to develop a plan for their future teaching practice. This study using AI with faculty aligns to Leng et al (2011), who found an appreciative learning approach provided an opportunity for students to be heard, to explore, dream and act, as well as to share their ideas with the group. In this case, AI allowed faculty to be seen and heard and thus possibly be more open to change, learning and growth. The dialogue in the professional development sessions created shared understanding in the group, and the generative questions impacted the way participants thought; stimulating compelling images of the future for them action.

Traditional educational development models that reinforce an externally designed, stand and deliver, non-participatory type of learning does little to assist teachers to enact constructivist, inquiry-based practices, required in a 21st century learning environment (Brooks & Gibson, 2012). The authors add that as the world changes, opportunities for educators to engage in reflection is of critical importance. The pandemic and subsequent shift to online delivery forced faculty to be vulnerable, take risks, and experiment individually and collectively. These may be important factors to cultivate when supporting planned practice change in the future.

Participants seemed to enjoy focusing on the positive and the possibilities for the future as a component of this reflective process. In addition, the AI format of exploring strengths and opportunities lends itself to participants being critically reflective and the dialogue with colleagues contributes to participants challenging their assumptions and considering other possibilities. It is important to note that this is a valuable process that can impact teaching in the

classroom and online, regardless of what delivery model faculty choose in the future. A transformative process requires patience and time as faculty hold on to their perception of competence, reputation and past success while feeling vulnerable learning new technology and new delivery methods when they are uncertain of success. Professional development as a way to support a "persons capacity to continuously learn through their ability to reflect, to analyse the experiences in depth, to develop and substantiate knowledge, and to refresh and re-evaluate it" (Colomer et al., 2020, p. 2). The authors suggest that only when we deliberately reflect on our experience does the opportunity for reform emerge.

The Power of Working Together

Participants reported they were most impacted by the peer interaction. They felt increased connection to others across the institution and saw the similarity of their experiences. The value placed on working together and the power of the collective was noted in the participant interviews, goals, and reflections. The opportunity to discuss challenges and successes, share strategies and perspectives across departments and disciplines provided increased awareness of how similar their experiences are. This community building and co-created reality is one of the strengths of using AI (Cockell & McArthur-Blair, 2012; Harrison & Hasan, 2013; Johnson, 2014; Mishra & Bhatangar,2012; Sandars & Murdoch-Eaton, 2017). Faculty expressed desire for interdisciplinary approaches to exploring or implementing new teaching practices, that may not have been considered previously and one noted the need to "break down walls between departments". Participants openly shared feelings, ideas and perspectives as they imagined and planned for the future. One participant stated, "some of those ideas are even achievable, especially if faculty from (gasp) different departments and 'faculties' co-operate and

collaborate." This included the language of co-learning with colleagues and with students. One participant described the experience of the year as follows,

> Past the original Level Up course, I feel like I have spent a full year slogging all by myself up a muddy hill, deeply rutted by the horses that trudged up earlier, with intermittent rain showers, lugging a 15kg knapsack, with a hole in one hiking boot. This Affirmative Inquiry experience was a lunch hour on a grassy meadow in pure sunshine. And good sandwiches, too! I wouldn't mind the mud, the ruts, the rain or the boot if I had such company going forth.

This perspective suggested that change may be more effective when people do it together and perhaps time and workload are less critical to facilitating change.

The value of peer connection is well supported by the educational development literature that suggests that a community approach and peer learning are important elements to support practice change (Knight et al., 2006; McQuiggan, 2012; Sandhu, 2015; Stoll et al., 2006; Trust et al, 2016; Wenger,1998). Early educational scholars such as Dewey (1938) recognize the value of learning communities and suggested that education is a social process deeply rooted in community. Communities of practice (CoP) is common term in higher education contexts and CoP's are designed to support participants to gradually absorb a culture of practice by providing exemplars, facilitated shared meaning and providing a sense of belonging and understanding (Wenger,1998). Often constructed around a specific topic, the researcher asserts that CoP may not serve to broaden our perspectives as fully as professional learning communities where more diversity of perspectives may be present.

The term, professional learning community, often used in primary and secondary education contexts, does not have a single definition but is described as a group of people

sharing and critically evaluating their practice in an ongoing, reflective, collaboration, learner oriented and growth promoting way (Stoll et al., 2006). Professional learning communities are fluid and evolve with accumulated collective experience over time. While this term is less often used in higher education where CoP is more common, the researcher suggests this is a more appropriate term for what is needed to support systemic change. The well-placed use of the word learning shifts the focus from practice to growth, and the word community is at the center of both terms and aligns to what faculty appreciated most about the use of AI in this study.

Stoll et al. (2006) report that theorists exploring community draw our attention to shared beliefs and values, common understanding, development of interaction and participation and a concern for all views. Knight et al. (2006) asserted that, ideally, we want our workplaces to evoke learning through the structure and culture. It has been suggested that effective professional learning should include formal offerings, experience, reflection and peer learning (Knight et al., 2006; Knowles, 1970; McQuiggan, 2012; Sandhu, 2015; Trust et al, 2016). Professional learning opportunities come from engaging with others' practices, in addition to our own. Scott and Armstrong (2018) suggested professional learning should address relational and collaborative dimensions along with the contextual elements of the educator's practice. The researcher asserts that this culture needs to be developed to support higher education reform and individual faculty practice change.

Developing a Learning Community.

The pre-post survey instrument reflected half of the participants increased their agreement to I can use a wide range of teaching approaches in an online course and I can select effective teaching approaches to guide students learning as well as to I am thinking critically about how to use technology in my course. Barrett (1995) asserted organizational innovation

requires generative learning which includes the ability to appreciate possibilities by focusing on strengths and potential, as well as the capacity to challenge habit and conventional practices, thus encouraging experimentation to move in new directions. He also suggested that we need to create forums for individuals to engage in dialogue and exchange their perspectives, helping them to recognize their own meaningful contributions. The researcher suggests that modelling the collaborative approach used in AI broadened participants' awareness of teaching strategies and to learn from each other's success.

Techno-Pedagogy Development

The reflective questions asked about the technology and pedagogy faculty would be interested in exploring further. They reported new technologies for interactive course elements and media creation, ePortfolios, blended learning, and open education resources as topics of interest. This focus on technology is not surprising as the pivot online enlightened them about the affordances and limitations of teaching and learning online. Faculty who were dependent on lectures found them to be ineffective via video conference. The use of media tools would support them to flip their classroom and have students prepare in advance, to create space for engaging activities during online synchronous sessions. There was recognition through peer sharing that ePortfolios offer an opportunity for authentic assessment and reflective learning components. Blended learning for some represents the best of both worlds, campus-based and online activities combined with purpose.

In their personal plans and wishes for the future, participants were enthusiastic about looking ahead. They wished for more opportunities to engage with their peers, consultation, and input from students and that their teams could align their educational philosophy. A participant noted "I need to continue to rethink the way I was taught and the things I take for granted".

There were multiple comments about the need for time, resources, and supports to learn and try new things. There were repeated comments about technology and pedagogy and the various ways they can be used to enhance learning. This suggests faculty comfort with technology skills is a key building block toward digital pedagogy and blended or online delivery models. One participant stated, “I wish I could remain engaged in both (technology and pedagogy) for many years to come, I could always have energy to identify new learning opportunities and that I learn things that inspire me and my teaching.” Looking ahead it was suggested that a collective process is needed for "reimagining of the future", perhaps suggesting an overlap in the themes.

Participants reported that the professional development sessions increased their comfort with continuing to teaching online. The researcher suspects this is related to the increased awareness of their strengths and the inspiration provided by peers about how to further develop their teaching practice in these spaces. The Dream activities supported a vision for co-learning, student centered education, creativity/innovation and engagement that served as inspiration for them to plan forward.

Overall, a majority of participants reported they were likely to continue teaching in online formats prior to the professional development sessions and of the four who did not plan to continue online, three shifted their response to be positive following the professional development. The pre-session responses being so agreeable prior to the professional development is likely reflective of the sample population and their willing engagement in professional development for digital delivery. The researcher suspects that a more diverse faculty population may not have rated this question as high preprofessional development and whether the AI-based professional development would impact this factor warrants further investigation. Additionally, participant’s responses about their overall comfort with their online teaching

practice were similarly positive, with thirteen of them indicating agreement prior to the session, an additional five were in agreement following the sessions. This suggests the AI intervention had a positive impact on faculty who may have been less comfortable to start.

Building Confidence. The quantitative results of the self-assessment showed increases in all three questions related to confidence and the qualitative findings reflected vulnerability which indicates some level of safety as well as hopeful perspectives for the future. Specifically, an increase was noted in the self-assessment of confidence in three areas: (1) to make technology decisions to support pedagogy, (2) the ability to design an online course, and (3) the ability to facilitate an online course. This aligns to findings of Broussard & Garrison (2004) who noted that motivation for change is impacted by efficacy, relevancy, and competency. In addition, multiple studies note that confidence, or lack thereof, may be an underlying cause of resistance with technology and online-teaching approaches (Betts & Heaston, 2014, Bollinger and Wasilik, 2009 and Jones, 2013).

Cordingley et al. (2005) assert that collaborative professional development has positive impacts on teachers such as increased confidence, enthusiasm for working together, and greater commitment to try new things and to change their practice. These factors may be integral to supporting change in teaching practice, which is quickly reversed if not supported by colleagues (Knight et al., 2006). The pandemic context increased the frequency and quality of collaboration in higher education, thus supporting the risk taking and innovation that was occurring as faculty were striving to meet the needs of their students in these challenging times.

Stoll et al. (2006) asserted that learning can't just be left to individuals. If we are to be successful with systemic change we need to learn and work together. When colleagues who share an interest or challenge come together across disciplines, the quality of peer learning can

have sustained impact on individual practices (Mooney, 2018). Stewart (2014) suggested that professional development should be transformed into professional learning as we move from a focus on content and knowledge building to one of practice change that considers underlying beliefs and assumptions. This focus on capacity building and innovation can appreciate and respects what is already there and assist in the facilitation of self-efficacy, resilience and creativity (Sterling, 2001). Higher education reform is dependent on individual and collective action, a complex blend of organizational conditions such as culture, infrastructure and support as well as individual motivations, skills and positive learning (Stoll et al., 2006). In this study, faculty were asked about their wishes for the future and the responses included confidence, continued learning, increased technology skills, and opportunities to innovate. These have a direct relationship to the barriers to adoptions previously discussed in Chapter 2 and align to the recommendations provided in the literature. Faculty want to look and feel competent in front of their students and desire the supports to establish confidence with their teaching practice.

Supporting Adoption of Technology and Online Delivery Models

Prior research studies indicate that concerns about technology skills and the interface between technology and pedagogy contribute to faculty concerns about competence and professional image. In turn, technical challenges are perceived to negatively impact student learning, resulting in faculty resistance to technology-based delivery model. This study provides evidence that educational developers can support faculty adoption of these practices by using AI to provide a reflective, collaborative and strength-based learning experience. This occurs through the development of a learning community and a focus on strengths and developmental opportunities related to technology and pedagogy, as a means to support increased confidence. These elements will be discussed in the next section.

General Discussion

The professional development sessions themselves provided insight into faculty underlying beliefs and values about the teaching and learning process. The initial activity sharing an item or image about being their best as an educator, provided an initial point of connection and community building for the group. It served to reconnect them to their values and how they wish to *show up* in their practice and for their students. The interview process further established connection and shared purpose, as they recognized the similarity of their experiences across the institution. The process of identifying themes in their stories supported a purpose for the work they would do, targeting a theme to work toward during the AI processes. All of this collective wisdom served to inspire a vision for the ideal future that they could draw on to develop their own personal action plans.

The peer interviews resulted in a focus on student-centered education that resonated across the small groups. This unexpected finding arose from the AI process and surprised the researcher who typically interacts with faculty in workshops that do not illicit such dialogue and potentially transformational insights. That said, a shift from teacher to student centeredness has been noted as an outcome of online learning (McQuiggan, 2012). Additionally, participants expressed an interest in collaborative approaches for the work of teaching and learning, as teachers expand their knowledge and skills to teach in a new way. This included a desire to become facilitators of learning, alluding again to this shift towards student centeredness. The literature supports this and cites peer learning as an essential component of faculty development (Mooney, 2018; Trust et al., 2014).

The pre-post self-assessment results indicated only one question with a decrease in the level of agreement. This question was *I have the technical skills needed to use technology.* The

researchers' interpretation of this decrease relates to a possible Dunning Kruger effect, which suggests that people tend to see their abilities more favorably than they actually are (Kruger & Dunning, 1999). The addition of others' experiences and perspectives throughout the professional development activities may have caused them to re-evaluate their perception of their own skills.

There were two questions where the majority of participants did not change their level of agreement and the number who increased their scores was equivalent to the number who decreased their score. The first of these questions was *I can learn technology easily*. This suggests that there was no impact on how participants perceived their ability to learn technology. The second question was *I see technology as an important element of a 21st century education*. This could be attributed to a ceiling effect as the majority of respondents had strongly agreed to this statement as their baseline. The researcher was surprised to see the level of agreement with this statement and wonders if this would be consistent across faculty who had not chosen to engage with the learn to teach online course that this sample was recruited from. The remaining questions had an overall increase in agreement.

Limitations

The recognized limitations for this study discussed in previous chapters included time, the pandemic itself, and the sample size and potential limitation of researcher and/or participant bias, and participant attrition. These were discussed in the methodology section of this paper. There was no attrition from the study, all participants who joined the sessions completed all five and the subsequent survey. Bias related to the AI approach remains present and a critique of AI from the literature is provided below.

"While research conventionally focuses on problems, AI was developed to reveal, often overlooked, positive aspects of experience; to generate new theory and to anticipate a new reality" (Clouder & King, 2015, P.170). Initially, criticism of AI came from organizational development scholars who felt it was overly concerned with the positive and believe that a balanced focus on what is working and what is not is more likely to add value than a focus on one or the other (Bushe,2012). This is supported by others who point out that focusing on the positive experiences exclusively may result in missed opportunities to address issues and negative experiences (Orr & Clevelend-Innes, 2015, MacCoy 2014, Knibbs et al, 2010, Patton, 2002). As the understanding of the theoretical foundation of AI has grown, remaining criticisms relate to the possibility that a focus on positive stories and experiences invalidates the negative experiences of participants potentially repressing important and meaningful conversations (Pratt, 2002, Reason, 2000). Oliver (2005) adds that what is positive for some maybe negative for others. It is important to accept talk about the negatives but help participates reframe them into the future state they wish to see (MacCoy, 2014). These concerns were less applicable to this study, as recognition of the challenges in the pandemic context were explicit as was the motivation to use AI to support capacity building and a vision for the most ideal future. Participants did in fact, share challenges and this contributed to relationship building and recognition of shared experience. In addition, it fueled their desire to learn from one another and seek solutions.

The generalizability of the results of this study is limited by sample size and participant demographic. In order to keep the professional development manageable in a digital space a smaller sample was needed to optimize the learning environment. If time were not a factor, the sessions could have been repeated for more than one participant group. The participants in this

case study were faculty who had chosen to commit to their own development related to online teaching design and facilitation when the pandemic shift began. This seemed to be an ideal population to study because their choice to attend training is demonstrative of their willingness to learn and innovate. However, in hindsight, their higher-than-average level of engagement may have resulted in a limitation for this study. This will be explored further in the limitations section of this chapter.

Despite these limitations, the similarity of experiences across higher education faculty and institutions around the world related to the emergent online delivery allow this study to be replicable in other environments and the results to likely have meaning to a variety of readers. This study provided insight into what faculty value in their professional development opportunities and what their vision and wishes are for future education delivery. Furthermore, it provided insight into the supports, structures and cultures that they believe will support accomplishment of such changes.

The methodology choices were constrained by time and researcher expertise. The rationale for selecting a mixed-method design served two purposes. First, it meets the needs of a variety of consumers of research, some who are influenced based on narrative stories that demonstrate impact of an approach and those who need data on specific factors to determine their support for a particular strategy. Second, regardless of the lens with which one sees the world, the integration of both types of data increases the external validity of the findings and the potential impact of the results of this study. While a more diverse participant population and a post assessment of the implementation of practice change may add value to the results, they would have added complexity for the novice researcher and additional time to the length of the study and thus project completion.

Finally, participant bias with respect to the AI approach is a compounding variable unaccounted for and potential for researcher bias as intrinsic in all studies. Researcher bias was mediated by validating the results with a participant focus group and by the use of mixed-methods to integrate and interpret the data.

The unique sample population impacts the reliability of the data as they were drawn from previous participants of a particular training for learning to teach online. Findings may have been impacted if the participant group were expanded to include faculty who had not previously engaged in professional development related to teaching online. In addition, the researcher created the survey instrument based on a combination of elements from established survey instruments and self-constructed items.

The pandemic context impacted the study from two perspectives. First, the AI approach had to be adapted for professional development delivered in a digital environment in order to comply with physical distancing health orders. While this is different from previous studies using AI, the process was consistent, and the researcher did not feel the group connection or interactions were compromised. Second, the pandemic was the impetus for the practice change and also contributes to complexity of the context for this study. The participants' pandemic experience and the subsequent professional development experience are intimately connected, making it difficult to differentiate some of the findings as directly related to one or the other.

In this study, the intent was to use the pandemic teaching experience as a means to reflect and plan for future teaching practice that might benefit from what faculty learned during this time and thus support their continued adoption of technology and online delivery models in the future.

Summary

The findings of this study contribute to an understanding of how to support practice change in higher education. Furthermore, they suggest that AI is an effective vehicle to move faculty toward adopting technology and designing changes in their teachings; it is also an effective approach for educational developers to use in the design and delivery of professional development, specifically learning communities. Evidence suggests that AI could support a shift in mindset that may support increased confidence with practice change. It supports the development of community where peer-sharing and collaboration can contribute. Finally, AI supports a vision for the future and a plan towards it that may enhance personal and collective action. These supports address some of the components of faculty resistance noted in previous studies (Betts & Heaston, 2014; Bollinger & Wasilk, 2009; Jones, 2013; Ryan & Des, 2000). The researcher notes that the connection between individual change and systemic change is intrinsic in the context of higher education and notes that many variables impact the change process that cannot be accounted for. The capacity building philosophy behind AI seems to be an ideal tool to support individuals and groups by encouraging peer sharing that can influence individual behavior choices, regardless of context.

It has been suggested that without investment in faculty development, technology infrastructure, and incentives for universities to offer flexible learning, there may only be modest increases in online learning (Contact North, 2020). “If faculty development aims to support and celebrate a culture of scholarly teaching and learning across the institution, perhaps the one-time teaching strategies workshops and the singular one-on-one consultation approaches to faculty development are insufficient” (Mooney, 2018). The researcher asserts that traditional educational development approaches that focus on knowledge and skill acquisition are insufficient to address

the human side of change. Fear, confidence, professional image, and personal risk taking require support of educational developers, leaders, and peers not provided in traditional workshops. It is suggested that professional learning communities, as opposed to workshops, are an underutilized strategy. These may be a more successful model moving forward, particularly if they are providing opportunities for reflection and feedback from peers and educational developers builds confidence, particularly if a strength-based approach is used. Faculty ePortfolios could be a means of embedding reflective practice that allows such peer collaboration and feedback, individually, and in groups.

Chapter 6. Conclusion

Overview

In Chapter 1 of the dissertation, evidence was presented about the need for change in higher education, as well as the identification of online learning as one of the possible paths forward to meet the needs of changing learners and workplace competencies (Bates, 2017; Means et al., 2009; Morris & Stommel, 2020; Picciano et al., 2010; Schroeder, 2011; World Economic Forum, 2016). The researcher asserted that changes in faculty teaching practices to include adoption of technology is critical to meet these emerging needs. Educational developers in academic departments and in teaching and learning centres are ideally positioned to provide change management and instruction that faculty need, to adapt their course design and delivery strategies. This study assessed AI as a possible approach to be used by educational developers to support these goals and provide faculty a positive experience with such practice changes.

Chapter 2 explored the literature to provide evidence of the affordances of technology and online learning. It also outlined what previous research tells us about faculty resistance to technology and online delivery models. Finally, it identified how AI has been used in higher education. This literature review identified gaps in the evidence from two perspectives. First, the majority of studies using AI have been qualitative in nature and focused on supporting group and organizational change, as opposed to change at the individual level. There were minimal studies using AI specifically for faculty development. Second, while there is evidence to support technology and online learning, faculty resistance has remained a barrier (Bates, 2000; Betts & Heaston, 2014; Bollinger & Wasilik, 2009; Brownell & Tanner, 2012, Picciano et al., 2010; Wingo et al., 2017). It was suggested that without an experience teaching online it is difficult to engage faculty with this approach (Betts, 2014; Betts & Heaston, 2014). The pandemic provided

an opportunity for faculty to experience teaching in digital spaces. Consequently, it provided the opportunity for this study to use AI to support individual reflection, images of an ideal future and a plan for implementing new teaching practices. Additionally, the collaborative approach of AI simultaneously generates collective energy toward systemic shifts in the approach to education delivery.

The aim of this mixed method case study was to explore a possible approach that educational developers could use to support faculty techno-pedagogy development to meet the need for more flexible and digital learning environments. Using a concurrent parallel design to provide both quantitative and qualitative evidence about the impact of using AI in faculty development, the results provide meaningful information for educational developers and leaders.

It can be concluded that AI had a positive impact on faculty experience in the professional development series and may have an impact on their continued use of technology and online delivery approaches to teaching and learning. Results of this study indicated that faculty found value in the AI based professional development as it provided them the opportunity to share their experiences with colleagues and helped them to recognize that they are more similar than different. Lewis et al., (2016) suggest that appreciation promotes growth, conversation promotes change and positive emotional energy supports change. It also allowed them to reflect on their strengths and identify opportunities for development that would help them move towards their ideal future state. This aligns to previous research about effective faculty development and the supports needed to advance flexible and online delivery approaches (Lawler & King, 2001; McQuiggan, 2012).

A report by Contact North (2020) suggests that a transformational change is triggered when a series of events have a cumulative effect that changes the trajectory of an organization,

industry, or sector. The pandemic provided the potential to influence higher education institutions and the sector overall. However, depending on the choices made by individual faculty and post-secondary institutions following the pandemic, true transformation may or may not occur.

The pandemic context complicates the execution and analysis of this study as it brought with it highly stressful working conditions for faculty. It forced a change in practice that they were not willingly engaging in, nonetheless an experience to explore and learn from. Supporting change with people in complex systems has many underlying variables that were not addressed by this study and could impact the findings, such as personality factors, self-efficacy, personal situations, and work relations. It is difficult to segregate these in order to ascertain which factors contributed to the positive experience with the AI based professional development experience or the shifts in participant self-assessment. That said, this human uniqueness is fundamentally what makes supporting change so difficult and an ongoing focus of today's organizations in education and elsewhere.

To support successful and fulsome higher education reform; organizational structures, cultures, and the needs of individual educators need to be taken into account. Essentially, the results of this study indicate that an AI approach in the professional development sessions provided faculty a positive learning experience. The analysis also indicates that AI has the potential to impact faculty adoption of technology and online delivery models; by developing a learning community, supporting techno-pedagogical development, and building individual confidence. These results should be considered when planning professional development supports for faculty and developing strategic plans for higher education institutions that involve technology and blended or online delivery models. The findings deepen our understanding of

supporting change at the micro level to potentially impact the larger system in which individuals' practice.

Implications

Changes in workforce needs, learner demographics, globalization, cost and increases in technology are projected to continue to have an impact on higher education (Educause, 2020). These factors necessitate a continuous cycle of adaptation by educators to meet the needs of future students. A Canadian survey of online learning (2019) reports 79% of institutions report inadequate training for faculty as a main barrier to online learning. Post pandemic it is likely there will be increased use of technology to support the teaching and learning process and increased offering of blended learning courses as faculty integrate their pandemic experiences (Contact North, 2020).

Research on effective faculty development indicates that creation of community where faculty share knowledge, reflect, collaborate and feel empowered to take action should be the goal (Darling-Hammond et al., 2009; Lawler & King, 2000). Beach et al., (2016) reported that 17% of Canadian respondents in their study ranked faculty learning communities in their top three approaches; workshops and consultations were ranked higher. During the pandemic shift to online delivery there was increased faculty engagement with learning opportunities, flexibility with themselves and others and collaboration within and across departments noted by the researcher. Based on this experience and the results of this study the researcher suggests that expanding learning communities is needed, if reform or significant shifts are to be accomplished.

Future faculty development will require a focus on organizational development and change. Ideally educational developers will be strong leaders, involved in governance creating collaborations that focus on students and faculty success (Austin & Sorcinelli 2013). Scott and

Armstrong (2018) support AI as a tool to reframe professional learning that supports positive engagement, collaboration and critical reflection that empowers teachers to make changes in their practice. This study adds to the literature on educational development practices and confirms the value of reflection and the importance of peer learning to impact faculty choices and their success with making changes in their teaching practice. It suggests that AI is a useful strategy for educational developers who wish to support faculty with technology-based pedagogy, and it adds to the literature on AI by providing evidence of its usefulness to support individual change. Repetition of this study on a larger scale or across institutions would be beneficial to broaden these findings to faculty who did not attend training for teaching online, thus increasing the faculty demographic in the results.

Recommendations

Based on the results of this study the researcher offers the following practice recommendations to educational developers and post-secondary leaders and suggests areas for future research.

Practice Recommendations

1. Faculty development aimed to support adoption of technology and online delivery models should be reflective and collaborative. The results of this study suggest that a strength-based, reflective and collaborative process provides the elements needed in professional development to support faculty with practice change. This focus on strengths and collaborative learning, generates awareness of perspectives and strategies for success that can result in a shift of mindset, thus influencing further participation in professional development and iterative adoption of new practices.
2. Increased use of practice communities/professional learning communities is encouraged

as an approach that builds relationships to support collaboration and risk taking that is needed for innovation. Learning in communities establishes relationships and increase the feeling of safety to be vulnerable and try new things with the support of like-minded colleagues. It also enables the generativity of professional learning.

3. The use of AI supports development of a growth mindset through reflection, visioning and action planning. Peer co-created development of visions for an ideal future provided possibilities that individuals may not consider on their own. This generative approach can be an effective strategy for practice change. Personal choice determines individual faculty actions to move these visions forward.
4. Investment in the infrastructure that supports digital delivery is needed, this includes technology hardware and software as well as resources to support faculty in their attainment of knowledge and skills for digital learning environments. Faculty expressed desire for increased learning, support and infrastructure to deliver a student-centered digital learning experience. Basic structural elements are needed to embrace new practice.

Suggestions for Future Research

To better understand the implications of these results future studies could:

- Recruit a larger sample across institutions and include a more diverse pool of faculty, perhaps not limited to those new to teaching online.
- Explore the role of personality elements, such as openness to innovation, in the adoption of new pedagogy and technology.
- Measure of confidence pre and post professional development could be a useful indicator of the effectiveness of educational development practices.

- Monitors faculty adoption of technology and online learning and the investigation of how additional professional development supported this

This additional research would build on this study by expanding conclusions and addressing limitations, exploring factors excluded from the present study, and investigating factors of interest from the findings of this study. Such additional exploration might inform leaders and educational developers about other supports needed to increase the uptake of technology and online delivery models. Further study is needed to explore application impacts of AI across a more diverse faculty population and to determine the relationship between AI and faculty implementation of new practices.

Summary

The pandemic forced educators to be vulnerable, use technology and teach their courses online. To use this disruptive experience as a catalyst, an AI process was provided to support faculty through a process of reflection and reimagining future education delivery approaches. The findings support AI as an educational development strategy that challenges beliefs and assumptions about how to teach. This critical analysis of teaching practice may have a significant impact on faculty uptake of technology and new delivery models in the future.

Based on these findings, the researcher suggests that higher education needs to create a learning culture in order to support ongoing change. To achieve this, professional development experiences should facilitate trust, community and a balance between individual and collective development. The focus needs to be on people instead of systems, thus empowering them to influence and change their environment, collectively approach challenges and work in teams to resolve them.

Higher education leaders should consider offering courses in a variety of delivery models to meet the needs of a variety of courses, students and faculty. Doing so balances the benefits of online learning approaches with place-based delivery as there is likely a need for all of them going forward. Educational developers should provide professional development that supports, community, curiosity, growth, and vulnerability as the results indicate these may create the conditions that help individuals and groups to move forward. This will allow us to develop innovative teaching practices, maximize technology and employ new pedagogies that foster learning for students

This research has provided evidence that AI could be a useful approach for educational developers to use to support change on both an individual faculty level and to help groups work collectively toward new practices. The findings indicate that faculty experienced a shift in mindset as a result of the pandemic and this professional development; and that by drawing attention to their strengths, faculty establish awareness of their competence, thus increasing their confidence to continue to innovate and experiment with new approaches. Recognizing they are not alone in this pursuit facilitates a possible support structure that could be utilized as they move forward with practice change. The importance of community, co-learning and collaboration with peers suggests a powerful approach for educational developers planning supports for faculty. Finally, the process of creating a vision for a more ideal future provided insights about what faculty would like to work towards. Vision for an ideal future represent underlying faculty values and alignment with these may result in institutions experiencing increased engagement with practice development and organizational strategic plans.

This study aimed to contribute to the knowledge that advances educational development practice towards the objective of supporting the expansion of digital learning environments. It

was designed using an AI approach in order to facilitate the reflection of faculty with the hope of providing a positive experience with change in their teaching practice. While previous research of AI was dominated by a focus on supporting organizational change, this study contributed by using AI with a focus on supporting change at the individual level. Additionally, previous research focussed on the factors impacting uptake of technology and online delivery approaches, this research focussed on how leaders and educational developers might overcomes these barriers.

The results of this study add to the body of knowledge surrounding faculty development, educational developer practices and AI itself, while supporting post-secondary leaders' understanding of support faculty practice change toward achievement of their strategic goals for education delivery.

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Appendix A: Professional Development Plan

Professional Development Sessions Agenda (with times)

Session	Activity	Time
1	Welcome, Consent, Recording and tech support Overview of PD series Introductions Name, dept, item/image of yourself at your best Overview of my research and the AI approach Appreciative agreements 4 groups of 6 for 10 minutes Report back 10 minutes Review and wrap up	10 min 50 min 20 min 20 min 10 min
2	Check in Power of stories, set up interview activity Breakout groups 8 groups of 3 Reflect and notes- 2 questions on slide as opposed to reflection sheet Breakout 4 groups of 6 Share interview highlights Identify themes questions 4 from reflection sheet Select a theme to focus on Report out and wrap up	10 min 10 min 45 min 5 min 20 min 10 min 15 min
3	Check in Positive image/positive action and set up dream activities 4 groups of 6 For the theme your group selected develop a visual image Report out 4 groups of 6	15 min 30 min

	For the theme your group selected Develop provocative propositions Report out Wrap up	20 min 20 min 20 min 5 min
4	Check in, review last session Break out group 4 groups of 6 Develop action steps for the theme your group is working on Report out Moving towards personal plans- instructions Reflective feedback (survey link in lms) Personal work time	15 min 30 min 15 min 15 min 45 min
5	Welcome, my gratitude, Next steps (post assessment) Personal plan sharing Community appreciation	5 min 90 min 30 min

Appendix B: Recruitment

INVITATION TO PARTICIPATE

Appreciative Inquiry based faculty development: A mixed-methods case study

February 2021

Principal Investigator (Researcher):	**Supervisor:**
Leeann Waddington	*Martha Cleveland-Innes*
AU doctoral student and KPU Manager of Learning Technology	*Center for Distance Education*
Leeann.waddington@outlook.com	*Martic@athabscau.ca*

Dear Colleagues

As a requirement to complete my *Doctor of Education* degree at Athabasca University, I am conducting a research project about *the use of Appreciative Inquiry in the faculty development context*. Appreciative Inquiry is an organizational change framework that seeks to support change through identification of strengths and collective capacity building. The purpose of this research project is to explore the impact of using appreciative inquiry for faculty development to support a collaborative and reflective experience about online teaching. I am conducting this project under the supervision of *Dr. Martha Cleveland-Innes*.

I invite you to participate in this research project because of your attendance in the Level Up : Learning to teach online course indicates your interest in teaching excellence as the Covid-19

pandemic forced higher education delivery to the online delivery approach. Now that you have initial experience teaching online there is an opportunity to individually and collectively identify what worked well and what might need further development for your continued use of technology-based course delivery in the future. The research is designed to benefit you as a participant. You will have the guided opportunity to evaluate your experiences teaching online and to plan for development of your future teaching practices. If you choose to participate, you may also establish new connections with colleagues that support your future practice. There are no anticipated risks as a result of participating in this research. Whether you choose to participate or not will have no effect on your employment position(s) at KPU and will not affect your access to services at the Teaching & Learning Commons.

Your participation in this project would involve participation in a series of online professional development sessions (synchronous and asynchronous) across the span of 3 -4 weeks, this is anticipated to be held in March 2021. The total time commitment is approximately 10-12 hours. The synchronous session dates will be identified with the group and facilitated in BigBlueButton, access will be provided to a Moodle site for the asynchronous elements. Included in this research is a pre and post self-assessment and a course evaluation.
Should you choose to participate, please email your interest and signed consent to leeann.waddington@outlook.com.

The study's findings will be beneficial to education developers and leaders in higher education interested in supporting faculty practice development and teaching excellence related to blended and online delivery approaches and faculty support overall.

Thank you for considering this invitation. If you have any questions or would like more information, please contact me, (the principal investigator) by e-mail leeann.waddington@outlook.com or 778-316-3223 or my supervisor by email martic@athabascau.ca.

Thank you.

Leeann Waddington

This study has been reviewed and received ethics clearance. Should you have any comments or concerns regarding your treatment as a participant in this project, please contact the Athabasca University Research Ethics Office by e-mail at rebsec@athabascau.ca or by telephone at 1-800-788-9041 ext. 6718, application #24210,. And/or Contact KPU REB reb@kpu.ca (604)-599-3163 application #2021-01.

Appendix C: Consent

Appreciative Inquiry based faculty development: A mixed methods case study

PARTICIPANT CONSENT FORM

February 2021

Principal Investigator (Researcher):

Leeann Waddington AU doctoral student

And KPU Manager of Learning Technology

Leeann.waddington@outlook.com

Supervisor:

Martha Cleveland-Innes

Martic@athabscau.ca

You are invited to participate in an online research study that explores the impact of using appreciative inquiry for faculty development to support a collaborative and reflective experience about online teaching. I am conducting this study as a requirement to complete my *Doctor of Education.* Whether you choose to participate or not will have no effect on your employment position(s) at KPU and will not affect your access to services at the Teaching & Learning Commons.

As a participant, you are asked to take part in a series of professional development sessions (Synchronous and asynchronous) across the span of 3-4 weeks. The total time commitment is approximately 10 hours. There will be a pre and post self-assessment survey and a course evaluation and your response to these surveys will be assigned a numerical identifier to protect

your privacy, reporting of this data will be in aggregate. These surveys will be conducted using survey monkey software and sent to you via email. The nature of the questions will be about your teaching experience, comfort with technology and experience in the sessions. You may skip any questions you do not feel comfortable responding to. Only the principle researcher will have access to this account. The synchronous sessions will be conducted in BigBlueButton and recordings of same stored in Kaltura. Transcripts of the synchronous sessions will be analyzed for themes. Use of video is encouraged but not required as it supports the development of community and a feeling of connection between participants. Due to the nature of group activities, the research cannot guarantee confidentiality. Participants will be asked, out of consideration for each other, not to discuss information shared in the group with non-participants. The technology platforms are all provided in accounts with Canadian data residency and password protected. All data collected and the results will be stored in OneDrive for five years and then deleted.

Participation in this study will support you to evaluate your experiences teaching online and to plan for development of your future teaching practices. You may also establish new connections with colleagues that support your future practice. Involvement in this study is entirely voluntary and you may refuse to answer any questions or to share information that you are not comfortable sharing. You may withdraw from the study at any time during the data collection period by providing notice to the principle investigator in writing to the email address at the top of this page. Your survey data will be excluded but your contributions to the group sessions will be reported in aggregate.

Results of this study will be included in the dissertation of the researcher as well as possible conference presentations or journal publication. All data shared in publications will be in aggregate or anonymized. A summary report will be shared with interested participants.

If you have any questions about this study or require further information, please contact Leeann Waddington or Martha Cleveland-Innes using the contact information above.

This study has been reviewed and received ethics clearance. Should you have any comments or concerns regarding your treatment as a participant in this project, please contact the Athabasca University Research Ethics Office by e-mail at rebsec@athabascau.ca or by telephone at 1-800-788-9041 ext. 6718, application #24210,. And/or Contact KPU REB reb@kpu.ca (604)-599-3163 application #2021-01.

Thank you for your assistance in this project.

Appendix D: Presession Survey Instrument

Supporting online teaching practice - Self assessment (Pre PD)

Pre-course self assessment

This survey collects your basic information as well as your perception of your knowledge and skills prior to the AI based professional development. You may skip questions that you are not comfortable answering. Thank you for completing this survey.

1. Please select a participant identifier or code name to de-identify your data. You will use this for subsequent surveys.

2. Please provide your contact email, this will not be shared.

3. What is your level of teaching experience?

- ◯ less than 5 years
- ◯ 5-10 years
- ◯ 11-15 years
- ◯ 16-20 years
- ◯ more than 20 years

4. What is your teaching discipline?

- ◯ Arts
- ◯ Business
- ◯ Design
- ◯ Health
- ◯ Science
- ◯ Trades
- ◯ Other

5. How many years have you delivered courses blended/online?

- ◯ less than 2 years
- ◯ greater than 2 years

6. Please indicate the ways in which you were using technology **prior to the pandemic**

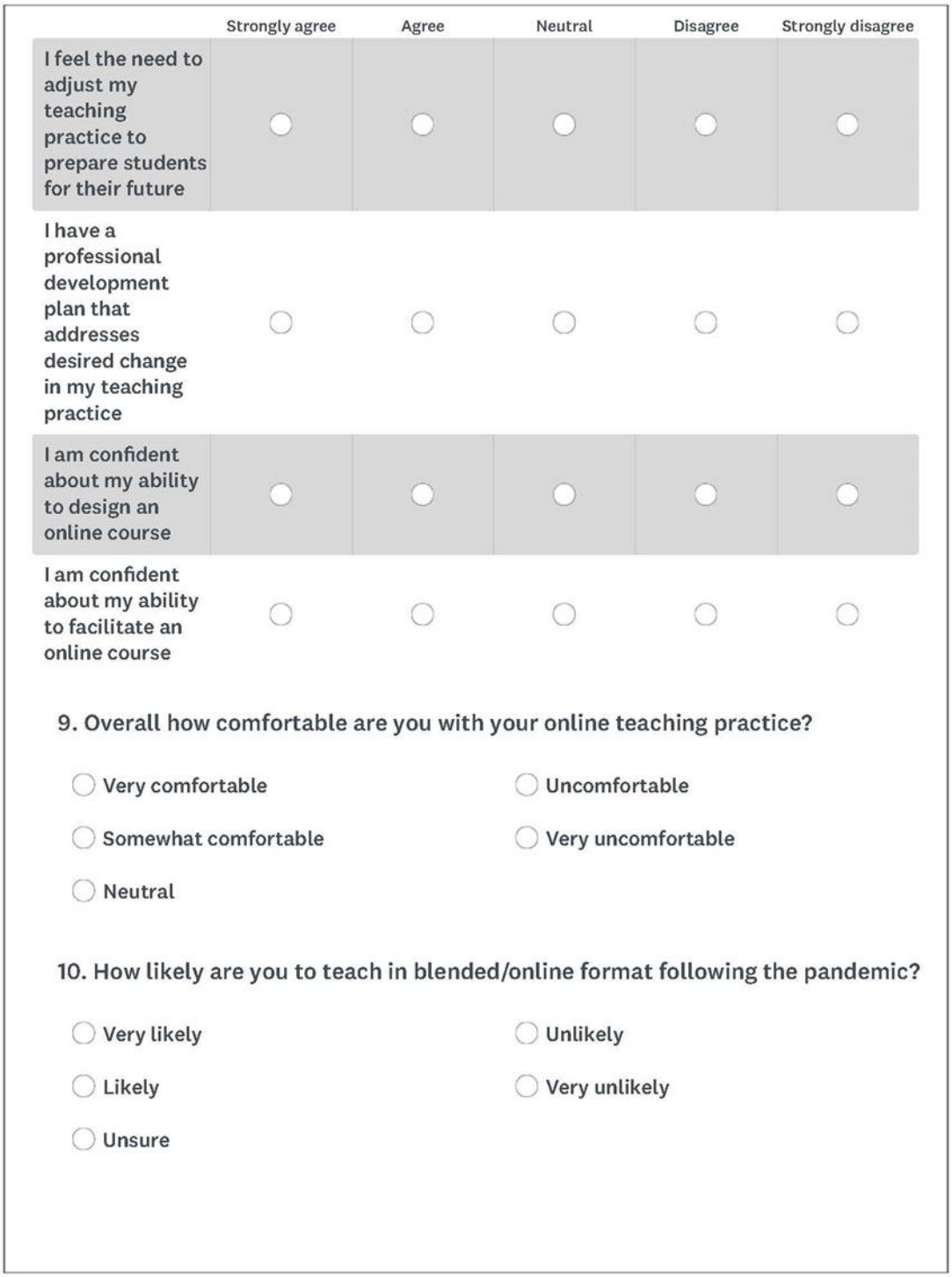
	Infrequently	Occasionally	Regularly
Internet	◯	◯	◯
email	◯	◯	◯
word processing	◯	◯	◯
video conferencing	◯	◯	◯
content sharing	◯	◯	◯
course delivery	◯	◯	◯
collaboration	◯	◯	◯
presentations (ie. PowerPoint)	◯	◯	◯
media creation	◯	◯	◯
research	◯	◯	◯

7. Please indicate the ways in which you are **currently** using technology.

	Infrequently	Occasionally	Regularly
Internet	○	○	○
email	○	○	○
word processing	○	○	○
video conferencing	○	○	○
content sharing	○	○	○
course delivery	○	○	○
collaboration	○	○	○
presentations (ie. PowerPoint)	○	○	○
media creation	○	○	○
research	○	○	○

8. Please indicate your level of agreement with each of the following statements. Consider your current practice since the COVID19 pandemic begin and taking into account any changes that were due to your participation in the "Level Up" course.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I have the technical skills needed to use technology	○	○	○	○	○
I can learn technology easily	○	○	○	○	○
I can choose technology to enhance student learning	○	○	○	○	○
I can select effective teaching approaches to guide students learning online	○	○	○	○	○



	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I feel the need to adjust my teaching practice to prepare students for their future	○	○	○	○	○
I have a professional development plan that addresses desired change in my teaching practice	○	○	○	○	○
I am confident about my ability to design an online course	○	○	○	○	○
I am confident about my ability to facilitate an online course	○	○	○	○	○

9. Overall how comfortable are you with your online teaching practice?

○ Very comfortable
○ Somewhat comfortable
○ Neutral
○ Uncomfortable
○ Very uncomfortable

10. How likely are you to teach in blended/online format following the pandemic?

○ Very likely
○ Likely
○ Unsure
○ Unlikely
○ Very unlikely

11. Is there anything else you want me to know about your knowledge and skills related to the use of technology and teaching online?

Appendix E: Reflective Feedback Questionnaire

Professional Development Reflective Feedback

1. What competencies or strengths have you identified as valuable that will continue to be part of your teaching practice?

2. What opportunities for development of your teaching practice did you discover?

3. What are your personal learning goals?

4. What pedagogies and technologies are you inspired to explore further?

5. What was the most impactful learning you had during our time together?

6. What three wishes do you have for your future related to teaching and learning?

Appendix F: Postsession Survey Instrument

Supporting online teaching practice - Self assessment (Post PD)

Post-course self assessment

This survey re-evaluates your perception of your knowledge and skills following the AI based professional development. You may skip questions that you are not comfortable answering. Thank you for completing this survey.

1. Please indicate your participant identifier or code name to de-identify your data.

2. Following the "Supporting online teaching practice" sessions, Please indicate your level of agreement with each of the following statements.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I have the technical skills needed to use technology	○	○	○	○	○
I can learn technology easily	○	○	○	○	○
I can choose technology to enhance student learning	○	○	○	○	○
I can select effective teaching approaches to guide students learning online	○	○	○	○	○
I can use a wide range of teaching approaches in an online course	○	○	○	○	○

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I know how to assess student performance in an online course	○	○	○	○	○
I am thinking critically about how to use technology in my course	○	○	○	○	○
I am confident about my knowledge of online teaching methods	○	○	○	○	○
I see technology as an important element of a 21st century education	○	○	○	○	○
i have a positive attitude about teaching online	○	○	○	○	○
I have a clear idea of how I want to develop my teaching practice for online delivery	○	○	○	○	○
I feel confident making technology decisions that support my pedagogy	○	○	○	○	○
I feel the need to adjust my teaching practice to prepare students for their future	○	○	○	○	○

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I have a professional development plan that addresses desired change in my teaching practice	○	○	○	○	○
I am confident about my ability to design an online course	○	○	○	○	○
I am confident about my ability to facilitate an online course	○	○	○	○	○

3. Overall how comfortable are you with your online teaching practice?

- ○ Very comfortable
- ○ Somewhat comfortable
- ○ Neutral
- ○ Uncomfortable
- ○ Very uncomfortable

4. How likely are you to teach in blended/online format following the pandemic?

- ○ Very likely
- ○ Likely
- ○ Unsure
- ○ Unlikely
- ○ Very unlikely

5. Is there anything else you want me to know about your knowledge and skills related to the use of technology and teaching online?

6. Please indicate your level of agreement with the following: This professional development experience provided me opportunities to ...

	strongly agree	agree	neutral	disagree	strongly disagree
Reflect on my teaching practice during the pandemic	○	○	○	○	○
Supported me to imagine my future teaching practice	○	○	○	○	○
Supported me to develop a plan to innovate my teaching practice	○	○	○	○	○
Learn from colleagues about technology and online teaching strategies	○	○	○	○	○
Helped me to identify strengths and opportunities I had not considered	○	○	○	○	○
Increased my comfort to continue teaching online	○	○	○	○	○

Appendix G: Kwantlen Polytechnic University Research Ethics Approval

KWANTLEN POLYTECHNIC UNIVERSITY

RESEARCH ETHICS BOARD

Certificate of Approval

Researcher Name	Department:	Number
Leeann Waddington	Teaching & Learning Tech	2021-01
Institution where Research will be carried out: Kwantlen Polytechnic University		
Co-Investigators:		
Sponsoring Agencies (if any):		
Project Title: Appreciative Inquiry based faculty development: A mixed methods case study		
Approval Date: February 8, 2021	Documents Included in the Approval: None **NOTE**: **Ethics file number 2021-01 and REB contact [reb@kpu.ca/ (604)-599-3163)] must be quoted on all recruiting materials - posters, flyers, online ads and consent forms**	
End Date: February 7, 2022		

Certification:

The protocol describing the above-named project has been reviewed

by the Kwantlen Polytechnic University Research Ethics Board and

found to be acceptable on ethical grounds

for research involving human subjects.

Dr. Tara Lyons

Chair, Research Ethics Board

This Certificate of Approval is valid for the above term provided there

is no change in the research protocol.

It is renewable, subject to annual review and approval.

A completion report must be filed at the completion of the project.

Appendix H: Athabasca University Research Ethics Approval

CERTIFICATION OF ETHICAL APPROVAL

The Athabasca University Research Ethics Board (REB) has reviewed and approved the research project noted below. The REB is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2) and Athabasca University Policy and Procedures.

Ethics File No.: **24210**

Principal Investigator:

Ms. Leeann Waddington, Graduate Student

Faculty of Humanities & Social Sciences\Doctor of Education (EdD) in Distance Education

Supervisor:

Dr. Marti Cleveland-Innes (Supervisor)

Project Title:

Appreciative Inquiry based faculty development: A mixed methods case study

Effective Date: February 12, 2021 **Expiry Date**: February 11, 2022

Restrictions:

Any modification or amendment to the approved research must be submitted to the AUREB for approval.

Ethical approval is valid *for a period of one year*. An annual request for renewal must be submitted and approved by the above expiry date if a project is ongoing beyond one year.

A Project Completion (Final) Report must be submitted when the research is complete *(i.e. all participant contact and data collection is concluded, no follow-up with participants is anticipated and findings have been made available/provided to participants (if applicable))* or the research is terminated.

Approved by: **Date: February 12, 2021**

Davina Bhandar, Chair

Faculty of Humanities & Social Sciences, Departmental Ethics Review Committee

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Athabasca University Research Ethics Board

University Research Services, Research Centre

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