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## **From the Editor**

### **Dear readers of intWOJDE**

**Dear readers of intWOJDE**

**We present our Volume: 11, Number: 2 issue to our valuable readers.**

**In this issue, there are three articles. We thank our authors for their valuable contributions to our journal.**

**The first article prepared by Carolyn ANDERSON, Dr. Susan BAINBRIDGE and Dr. Norine WARK and entitled "MITIGATING THE MATILDA EFFECT ON HELEN FARLEY: A PROFILE OF AN EARLY ONLINE RESEARCHER AND HER ONGOING DEDICATION TO SOCIAL JUSTICE". The Matilda effect is the term used to describe the systematic under-recognition of women's accomplishments in scientific fields. In this article, the authors aim to help balance this bias and reverse the Matilda effect by reviewing Helen Farley's research and achievements.**

**The second article entitled "ONLINE LEARNERS' EDUCATIONAL PARADIGM PREFERENCES: TWO FACTORS IMPACTING INTEGRATION OF EMERGENT TECHNOLOGY" is written by Dr. Norine WARK. This article has presented a comparative analysis of preferred educational paradigms in two MEd DE courses at an online North American institution during one four-month term in 2017. The data used for in this study, were derived from a doctoral dissertation that used a critical pragmatic research paradigm.**

**The Third article prepared by Dr. Bonnie MARLOW, Dr. Susan BAINBRIDGE and Dr. Norine WARK and entitled "MITIGATING THE MATILDA EFFECT ON ELIZABETH BURGE: LIGHT A FIRE, DON'T CURSE THE DARK". This study aims to reinstate Burge's voice by illuminating her work on gender issues, DE, and ODL to garner her a rightful place in educational history and provide a role model for women in academia.**

**We would be very happy to publish your studies on women and distance education in our journal. We hope to stay in touch and wish to meet in our next Issue, on April 2023.**

**Cordially**

**Prof. Dr. Emine DEMIRAY  
Editor in Chief**

## MITIGATING THE MATILDA EFFECT ON HELEN FARLEY: A PROFILE OF AN EARLY ONLINE RESEARCHER AND HER ONGOING DEDICATION TO SOCIAL JUSTICE

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### ABSTRACT

The Matilda effect (Rossiter, 1993) is the term used to describe “the systematic under-recognition of women’s accomplishments in scientific fields” (Schmidt et al., 2021, p. 1), which has been suggested as relevant in fields within academia often viewed as male dominated, such as educational technology and distance education (Schmidt et al., 2021). In this current paper, we hope to counterbalance that bias and help to reverse the Matilda effect by overviewing the research and achievements of Helen Farley. Her work with incarcerated individuals and her attempts to bring higher education into prisons in Australia and New Zealand demonstrates her dedication to social justice within the context of her own culture. In this article, we provide an overview Farley’s biographical background and highlight some of her research to offer insight into the value and innovation of her work. Her focus on information and communication technology (ICT) has produced innovative ways to create platforms and learning management systems that offer online learning to prison populations. We hope this paper will assist in continuing to mitigate the Matilda effect within the field of distance and online education.

**Keywords:** Matilda effect, women researchers, distance education, online education, gender differences, gender equity, feminist researchers, social justice

### INTRODUCTION

Helen Farley is a significant female researcher. She is from Australia and her career focus has been on information and communications technology (ICT), such as Learning Management Systems (LMS), as well as aiding the educational needs of the incarcerated (Bainbridge & Wark, 2022). She currently works as the Practice Manager of Education and Training for the Southern Region of the Department of Corrections Ara Poutama Aotearoa in New Zealand and is also an Adjunct Associate Professor at the University of Southern Queensland. She has been teaching and creating works in various forms for over eighteen years (LinkedIn, 2022).

Farley has worked extensively throughout her career in partnership with correctional jurisdictions across Australia to introduce digital technologies into prisons to provide access to secure digital education. She was the lead for the creation of a government-funded \$AUD 4.4 million project called *Making the Connection* that developed in-cell technologies to allow prisoners to participate in higher education. It was used throughout many states in Australia and by its end over one thousand, seven hundred prisoners had been enrolled in university programs with retention rates higher than non-incarcerated university students and with slightly higher examination results (LinkedIn, 2022). Farley's career-to-date publications are vast (Bainbridge & Wark, 2022; University of Southern Queensland, 2021). This profile provides her research interests, education, work experience and significant contributions to modern learning. In addition, three papers written by or about Farley will be reviewed and discussed.

A relevant connection to Farley's research in her work with incarcerated learners is the connection to equity issues as many of the prisoners were Indigenous. Farley notes this as significant and speaks to existing inequities at systemic levels in Australia. Similar data from Canadian prisons show that the same inequities exist there. More than thirty percent of prison populations in Canada are of Indigenous ancestry even though they only constitute five percent of the general Canadian population (Government of Canada, 2020). This paper will highlight relevant, relatable information to the Canadian context in connection with Indigenous peoples.

## RESEARCH INTERESTS

Farley has spent considerable time in her academic career working with digital literacies in education, digital equity in higher education, corrections education, mobile learning frameworks, and evaluation. Special interests include the educational use of virtual world environments, authentic 3D movement in virtual environments, haptic interfaces, immersion in virtual environments, and educational technology (University of Southern Queensland, 2015). Early on in her research she contributed to the *Second Life* platform to create virtual environments for students to enhance their learning and worked in mLearning (Bainbridge & Wark, 2022). Current work involves "supporting education and training in its broadest sense across Te Waipounamu preparing prisoners for a productive and happy life upon release. Current research involves discovering what works and why, and the broader benefits of education and its impacts on prison culture" (LinkedIn, 2022).

In contrast to the punitive approach to unfavourable behaviours such as incarceration, Farley also has an interest in the benefits of restorative justice. Restorative justice is a response that "seeks to repair harm by providing an opportunity for those harmed and those who take responsibility for the harm to communicate about, and address their needs, in the aftermath of a crime" (Government of Canada, 2021). Many Indigenous peoples around the world follow a restorative justice response to adverse behaviours among their community members.

## ACADEMIC BACKGROUND

From 1988 to 2002, Farley attained her first two degrees. They were a Bachelor of Veterinary Science, which was followed by a Master of Arts in Studies of Religion. She attained her PhD in 2007 and then followed that up in 2009 with a second master's degree, this time a Master of Education in ICT in Higher Education (LinkedIn, 2022). In the interim she completed master's coursework and certificate work in areas of interest to her.



## **ARTICLE 1. THE PRISON IS ANOTHER COUNTRY: INCARCERATED STUDENTS AND (IM)MOBILITY IN AUSTRALIAN PRISONS**

Authors Farley and Hopkins (2017) identify multiple barriers experienced by incarcerated students in relation to critical mobility theories and the physical constraints of a prison. Data collected for conclusive findings came from student prisoner interviews and therefore, align with students' perceptions of studying digitized tertiary and pre-tertiary courses (post-secondary education received at universities) through the framework of mobility issues (Farley & Hopkins, 2017, pp. 151-153). Their conclusion suggests that prisons need to find other ways of approaching education for prisoners that better align with their institutional process and practices in ways that benefit the educational success of the incarcerated.

Using critical mobility theory as a lens, this article notes that Australia's most marginalized and isolated students remain disconnected from the advantages and disadvantages of mobility. In addition to the barrier that prisoners do not have access to the Internet, which is problematic for distance learning, other barriers include the spatial and temporal constraints of a prison. One of two notable challenges to completing higher education in prison is the lack of priority placed on education in comparison to other institutional priorities and practices. Also, physically getting to the place where the computers are set up involves a multitude of challenges as movement is restricted within a prison environment, and when and where people move are often left to prison guards.

The funding for this research was a part of the aforementioned *Making the Connection* project, which established an LMS system that was a version of Moodle called *StudyDesk* that could be used offline. This allowed students to engage with electronic learning while not accessing the Internet, which allowed students to develop their digital literacy skills, engage with multimedia course materials, and be relieved of the burden of carrying around heavy, hard copy books and printed educational materials.

The authors address inequity by discussing how (im)mobility is implicated in keeping marginalized students 'stuck' in an unequal system reproduced by isolationist and punitive policies. They state the (im)mobility issues present within the prison system work negatively towards the educational success of a group of prisoners who are marginalized and under-privileged and were before they were sent to prison. They state the premise of the Australian prison system is to isolate and immobilize criminals in order to keep the larger community safe. This creates a competing interest between security and rehabilitation with security concerns prevailing.

The percentage of incarcerated individuals in Australian prison systems that were Aboriginal, and Torres Strait Islanders was one to six in 2015. Some parts of Australia host more than forty percent of their prison population as Aboriginal and Torres Strait Islanders. Farley and Hopkins state that "Indigenous women are the fastest growing subgroup of Australian prisoners, with the number incarcerated nearly doubling over the past decade" (p. 156). They go on to say the dominant population in Australia's prisons also come from minority and low socio-economic groups, showing inequities based on race, gender, and class and that the criminal justice system only "serves the political interests of the dominant social class" (p. 156).

This is relatable to the Canadian context where more than thirty percent of prison populations are of Indigenous ancestry, even though they only constitute five percent of the general Canadian population (Government of Canada, 2020). Indigenous people in Canada are also the most impoverished demographic in the country. For example, data from the 2010 census found that the average child poverty rate for all children in Canada was seventeen percent while for Indigenous children it was thirty-eight percent nationally with

some provinces hosting as large as sixty-four percent of status First Nations children living below the poverty line (Macdonald & Wilson, 2016, p. 11).

## ARTICLE 2. USING 3D WORLDS IN PRISON: DRIVING, LEARNING AND ESCAPE

This article by Helen Farley (2018) looks at the constraints experienced by prisoners by lack of movement and engagement with the world outside of the prison along with the technical limitations of the prison environment. As a solution, Farley poses the implementation of virtual reality. In connection to the restriction of movement, Farley discusses how the overcrowding of prisons equates to longer time spent in cells for prisoners, with an average of fourteen hours per day according to 2018 data. Virtual reality is a way for the incarcerated to virtually locate themselves somewhere else. The benefits of virtual reality are large.

Examples that Farley uses for the purpose of education are field trips to historic sites, museums, and science related activities, etc. Virtual reality can be used for psychological rehabilitation, driver training, job seeking, and job training. She states that successfully educating and rehabilitating prisoners will “decrease recidivism rates and ultimately provide significant cost savings while integrating prisoners back into society” (Farley, 2018, p. 3). This form of education can be used for driving and driving offences, programs and behaviour modification, vocational education, language, and culture. Virtual reality usage has been proven to cost less than traditional modes of instruction and the cost of the hardware is low.

Limitations of virtual reality in prisons include streaming media challenges and synchronous action with other participants due to lack of Internet access. Social interaction simulations are performed by ‘bots’ in virtual reality and driven by artificial intelligence (AI) so their responses are limited. There could also be unintended consequences associated with the interactions. Another limitation lies in the limited haptic feedback that most virtual reality provides to truly simulate real-life experiences such as driving. Excellent haptic feedback is expensive, which would be a barrier for prisons.

Regarding systemic inequity, it is known that most prisoners in Australia come from disadvantaged backgrounds and vulnerable populations such as the Aboriginal population and Torres Strait Islanders who may have English as a second, third, or even fourth language. These prisoners are incarcerated away from their homes and country, which has a significant impact on their well-being, given the enormous importance of land in their cultures. Virtual reality allows for immersive virtual environments that connect both language and culture to inmates, as well as offer up culture such as Aboriginal activities and games that would go a long way to alleviating the isolation and pain felt by these prisoners (Farley, 2018, pp. 5-6). Implementation of these activities via virtual reality has the potential to help prisoners overcome the multiple layers of existing disadvantage.

## BOOK 1 (CHAPTER). FARLEY, HELEN SARA

*Helen Sara Farley* is a chapter of a book entitled *The Encyclopedia of the Female Pioneers of Online Learning* by Susan Bainbridge and Norine Wark (2022). This chapter on Farley offers a short biography and an in-depth interview with Farley, discussing her career experiences and contributions to online distance learning (ODL). Regarding Farley, Bainbridge and Wark state “her unique contribution to modern learning is her pioneering work with incarcerated learners and working to develop offline programs to allow this particular group of learners to study under the constraints of prison rules” (Bainbridge & Wark, 2022, p. 71). The interview includes a look into the history and achievements of this remarkable researcher through her own words and is a very inspirational read. Indigenous readers will feel connected to Farley through her frequent references to Indigenous peoples

when discussing their uniqueness, as well as her depth of awareness to existing inequities in prisons for this group along with her response to that.

Farley discusses pedagogical approaches to teaching and learning that align with Indigenous ways of knowing such as experiential learning, the importance of building strong relationships, and differentiated teaching and assessment practices. Farley suggests the concepts of connecting with Aboriginal Elders to capture Indigenous knowledge and engaging in student-centred approaches to teaching. She also offers up a story about a student who was part of the "Stolen Generations" where the Australian government removed Aboriginal children from their homes and placed them in foster care or orphanages.

Relatedly, Canada did this, too. It is called "The Sixties Scoop" where Canadian provincial governments scooped over twenty thousand Indigenous children from their families and adopted them out to non-Indigenous homes or placed them in the foster care system. Many children were farmed or sold internationally to organizations or families around the world, including countries such as the United States, Australia, and New Zealand (The Canadian Encyclopedia, 2022).

## CONCLUSION

Helen Sara Farley is a researcher of significance. Her work with online distance learning, virtual reality, LMS systems, and mLearning have been impactful for many. Her contribution to the landscape of distance learning is notable and progressive. Her acknowledgment, understanding, and work towards a more equitable education system for the incarcerated is both admirable and encouraging. She has researched virtual reality among other educational technologies around the world and used this knowledge to make advancements in Australia and New Zealand. Our hope is that researchers in online distance education in Canada are aware of her research and considering similar ways to address educational inequities for Canada's disadvantaged groups, most notably Indigenous peoples. For example, could we implement offline Moodle programs into Canadian prisons to enhance student learning? Would this help address existing inequities in prisons here as their populations, like Australia and New Zealand, are also disproportionately Indigenous?

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## ONLINE LEARNERS' EDUCATIONAL PARADIGM PREFERENCES: TWO FACTORS IMPACTING INTEGRATION OF EMERGENT TECHNOLOGY

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### ABSTRACT

A doctoral dissertation employed a critical pragmatic research paradigm and a transformative mixed methods methodology to explore what educational paradigm most empowers learners to acquire higher levels of emergent technology integration for learning on demand. Participants included 12 graduate-level students from two Master of Education courses at one online North American institute during one four-month term. A Paradigm Shift Framework (Wark, 2018) was designed to generate quantitative questionnaires and qualitative interviews for capturing participants' paradigmatic preferences and perceived levels of integration mastery with 16 emergent educational technologies throughout the term. This paper identifies two possible factors for why, collectively, respondents in Course A moderately increased their preference for a behavioural paradigm, while Course B respondents significantly increased their preference for a perceptual paradigm by the end of the term. The first factor is respondents' conception of the term, emergent technology, and the second is the practice of mindfulness.

**Keywords:** Andragogy, educational paradigms, emergent technology, heutagogy, mindfulness, Paradigm Shift Framework, pedagogy

### INTRODUCTION

Gros (2016) claims that *emergent technologies* (or "[t]ools, concepts, innovations, and advancements utilized in diverse educational settings to serve varied education-related purposes"; Velentsiano, 2010, p. 33) are most likely "adopted from other fields so integration typically warrants the co-evolution of such technologies with educational practices" (Wark & Ally, 2020a, p. 1013). Veletsianos (2020) agrees, going on to say that the use of emergent technologies in education "may necessitate the development of different theories, pedagogies, and approaches to teaching, learning, assessment, and organization (p. 18)." The conundrum that educators face is how to adequately facilitate learners' ongoing capacity to reflexively integrate suitable emergent technologies in a world characterized by everchanging technologies and education practices (Brynjolfsson & McAfee, 2014; Kurzweil, 2005; Moore, 1965/1998, 1975; Wark, 2018).

To help educators resolve this conundrum, a doctoral dissertation explored what *educational paradigm* (defined as "the shared beliefs, theories, and practices, including research practices, associated with a particular educational group or school of thought"; Wark, 2018, pg. 26) most assisted learners in integrating 16 currently-emerging technologies for learning on demand. A critical pragmatic research paradigm, mixed methods methodology, and Paradigm Shift Framework (Wark, 2018) were employed for this project. Quantitative questionnaires and qualitative interview instruments developed from the Paradigm Shift Framework were used to gather data from 12 volunteer students enrolled in two Masters of Education in Distance Education (MEd DE) courses during the Fall 2017 semester at one online North American institution.



The dissertation focused upon individual and whole group, rather than course-based respondent results. Nevertheless, while undertaking this study, some notable differences between Course A and Course B respondent profiles emerged. When the term began, all respondents in both courses reported being at the early practice level with the integration of the 16 emergent educational technologies for learning, yet their end-of-term integration levels varied remarkably. These end-of-term results were not anticipated because various course elements in both courses remained consistently similar throughout the term. Only two significant differences could be identified in the data. First, the data suggested that many respondents struggled with the broad definition of the term, emergent technology, as defined by Veletsianos (2010). Second, only Course B respondents were exposed to mindfulness teaching and learning strategies. It is these findings that are discussed herein.

## LITERATURE REVIEW

This literature review opens with definitions for some key terms before moving on to a succinct review of the theory, nature, and power of learning, as well as the roles that technology-enabled distance education and mindfulness teaching and learning strategies play in the learning process.

### Definitions

The first key term requiring definition is *technology*, which consists of the Greek root words: *techne* (art, craft, skill, or means for obtaining something) and *logos* (inner thought or feeling expressed outwardly). There are innumerable definitions for the word; most are associated with the Greek root, *techne*, which expresses a utilitarian view of technology (Thierer, 2014). The dissertation and this paper, however, acknowledge both root words, thus defining technology as “tools, means, skills, crafts, or systems that are outward reflections of individual and societal values and motivations” (Wark, 2018, p. 4).

Since Veletsiano’s (2010) definition of *emergent technology* (“[t]ools, concepts, innovations, and advancements utilized in diverse educational settings to serve varied education-related purposes,” p. 33) also captures both root words for the term, technology, it is Veletsianos’ meaning of “emergent technology,” that is adhered to in the dissertation and this paper.

Numerous scholars, such as Freire (1970/1993), Newmann and Associates (1996), Murphy (1996), van Manen (1999), Mortimore (1999), and Hamilton and McWilliam (2001), use the word, pedagogy, as broad term to describe various approaches to teaching and learning. Nevertheless, for the purpose of this paper, *pedagogy*, is meant to be understood as a teaching approach identified specifically with the behavioural paradigm.

### The Theory, Nature, and Power of Learning

The dissertation considers two disparate epistemic views on the source of human knowledge, as well as the educational paradigms and learning approaches generated from these views. The first viewpoint, established by the empiricist, Aristotle, argues that the source of knowledge is the external, objective world. Learning requires absorbing this world through human senses. This belief constitutes the foundation of the behavioural paradigm and pedagogical approach to learning (Emery, 1981; Hammond et al., 2001). Plato, the rationalist, counters that the source of knowledge is subjective, innate human perceptions. This latter position yields the foundation of a perceptual paradigm and a *heutagogical* (or “learner-determined”; Hase & Kenyon, 2001), approach to learning (Emery, 1981; Hammond, et al., 2001; Hase & Kenyon, 2001, 2013). This review on the theories of learning necessitates a literary exploration about how humans learn naturally.

Literature on natural learning characterizes pre-school children as being instinctively curious, active learners who are intrinsically motivated by their dynamic interests to learn (Dewey, 1897, 1903, 1916/2007; Hase & Kenyon, 2013). Learning naturally carries on throughout life, is often social, and occurs in any setting (Benson, Harkavy, & Puckett, 2007; Dewey, 1897, 1903, 1916/2007). Humans intrinsically strive to achieve autonomy, mastery, purpose, and innovation (Pink, 2007), as well as to create a better humanity (Freire, 1970/1993). Neurological findings support the premise that the source of knowledge is innate, individual perceptions; genetics, experiences, and psycho-physiological states influence perceptions (Kluger & Stengel, 2011; Slater, 2002). Perceptual learning engages instrumental reasoning and *transformational learning* (a dynamic blend of [1] rational thought, consisting of logic *and* affective thinking, and [2] creative intuition; Emery, 1981; Mezirow, 1991; Robertson, 1997). Thus, the reviewed literature on natural learning and neurology substantiates the epistemic view that individual, innate perceptions are the source of human knowledge.

It is this apparent contradiction between what is currently known versus what is practiced in relation to learning that prompted a critical pragmatic comparative review of who retains the locus of control over learning in each paradigm. The traditional educational system is based upon a behavioural paradigm and pedagogical approach to learning. This system is governed by a top-down hierarchy of social, political, and educational elite (Bourne, 1917; Emery, 1981; Freire, 1970/1993). The curriculum is abstract, fractured, linear, one size-fits-all, and determined by those in power (Murphy, 1996). The institution and teacher control instructional time, pace, place, content, resources, delivery, and evaluation. Learning officially occurs in the formal schooling context, typically during the learner's younger years (Collins & Halverson, 2010). The goal is to transmit knowledge sanctified by the social elite to the masses in a manner that fosters rote memorization, instrumental reasoning, dependent learners, and ultimately, social compliance (Emery, 1981; Hase & Kenyon, 2001, 2013; Murphy, 1996; Palaialogos, 2011).

In an educational system governed by a perceptual paradigm and heutagogical approach to learning, the institution is governed by a networked egalitarian system emulating principles of autonomy, diversity, openness, interactivity (Downes, 2010), and responsibility (Freire, 1970/1993). The curriculum is holistic, individualistic, and based upon a learner-determined individual educational plan (IEP). The learner controls their learning throughout life within their unique personal learning environments (PLEs) with the support of their personal learning networks (PLNs; Blaschke, 2013; Hase & Kenyon, 2001, 2013). The teacher, or "learning leader," becomes a transient resource among many human and non-human resources in the learner's PLN/PLE. The goal of this system is to help the learner become independent and personally responsible for their own learning and educational path, which requires learners to hone instrumental reasoning *and* transformative thinking skills. (Emery, 1981; Hase & Kenyon, 2001, 2013; Mezirow, 1991; Robertson, 1997).

A third approach to learning reviewed in the literature is *andragogy* (a term coined by Kapp in 1833 to describe Plato's learning theory; Nottingham Andragogy Group, 1983), which Knowles associated to his own concept of adult self-directed learning (SDL; 1970). Knowles initially asserted that adult learners are unlike child learners because adults know what they want to learn about and are self-motivated to obtain such learning. In educative practice, the adult learner may possess some control over the learning context, but the instructor usually retains control over the learning process and task (Knowles, 1970; Palalas et al., 2017). Knowles (1984) eventually retracted his original assertion that adult learners are unique, arguing instead that all learners exist on a continuum between pedagogy and andragogy. While the reviewed literature did not indicate what paradigm andragogy is most closely associated with, the significant reliance upon the teacher to



direct most aspects of the learning process suggests possible adherence to the behavioural paradigm.

### Technology-enabled Distance Education

The field of distance education (DE) is uniquely positioned to offer learners with the opportunity to realize control over their own learning. First, a central, persistent goal of DE is to provide education for all (Weydemere, 1971). Second, emergent technologies have been exponentially eroding the parameters of space and time (Bates, 2005; Moore, 1965/1998, 1975), increasingly enabling learners to learn when, where, what, and how learners desire. Nevertheless, some literature indicates that the emancipating role of DE is currently threatened by educators who desire to replicate the face-to-face behavioural/pedagogical educational system in the DE environment (Collins & Halverson, 2009; Herrington et al., 2009; Ng'ambi et al., 2012; Willams et al., 2011).

### Mindfulness Teaching and Learning Strategies

One branch of contemplative science, mindfulness, focuses upon developing the relationship between mind and body through techniques such as meditation, deep listening, dance, breathing, reflection, and journaling (Barbezat & Bush, 2014; David, 2009; Goleman & Davidson, 2017). One of the goals of such practices is to center one's awareness of their body and thoughts fully in the present moment, rather than in past or future states (Miller, 2013). In other words, *mindfulness* means "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (Kabat-Zinn, 1994, p. 3). Scholars such as Purser et al. (2016), as well as Goleman and Davidson (2017), point out that while the contemporary mindfulness movement has been touted by the media and some research reports have lauded the benefits of mindfulness while downplaying methodological weaknesses, much of the science that supports mindfulness is difficult to discredit.

Educators are becoming increasingly interested in mindfulness teaching and learning strategies because mindfulness "opens the mind and gives space for new understanding" (Barbezat & Bush, 2014, p. 98). David (2009) suggests that mindfulness enhances the learner's: (1) readiness to learn, (2) academic performance, (3) attention and concentration, (4) self-reflection and self-calming, (5) classroom participation and self-control, (6) social and emotional learning, (7) pro-social behaviours and relationships, and (8) holistic well-being, while also reducing test anxiety and providing tools to reduce stress (p. 9). Yet while educational research in face-to-face class settings indicates that mindfulness teaching and learning strategies promote attention, impulse control, self-awareness, compassion, and empathy, a paucity of studies exist on mindfulness teaching and learning in the online learning environment (Palalas, 2018). One of the few existing studies was an auto-ethnography by Palalas et al. (2018) that occurred in the Course B setting of the dissertation study, during the term after the dissertation data was collected.

### METHODS AND PROCEDURES

The dissertation was founded on a critical pragmatic research paradigm (Deegan, 1988) and an exploratory transformative mixed methods methodology (Mertens, 2015). Analytic review of existing frameworks, models, and taxonomies led to the conclusion that none were capable of capturing paradigmatic elements of online learning environments and technology integration levels among students (Wark, 2018). Thus, a Paradigm Shift Framework, based upon reviewed literature and comprised of a Paradigm Shift Model and an Omni-tech Taxonomy, was created by the author (2018) to guide the development of data collection instruments for the dissertation and subsequent data analyses. A brief overview of the framework begins with an introduction to the Paradigm Shift Model.

## Paradigm Shift Model

The Paradigm Shift Model represents two disparate educational paradigmatic states with an intervening shift between these states (Figure 1). This model is graphically illustrated as a Venn diagram to reflect that learning is “an individual, non-linear, messy, and dynamic process” (Garnett & O’Beirne, 2013; Hase & Kenyon, 2013; Wark, 2018). In Figure 1, P represents a primarily behaviouristic paradigm/pedagogical approach that encourages learner reflection, A represents a shifting paradigm/andragogical approach that aims to promote critical reflection, and H represents a perceptual paradigm/heutagogical approach that engages reflexivity. Reflection encourages learners’ efficiency and effectiveness of performance (Finlay, 2008; Schön, 1983, 1987); critical reflection requires learners to analyze existing socio-political powers in relation to new knowledge or experience (Rose, 2013; Smyth, 1992), and reflexivity fosters the introspection of self, praxis, and human nature (Freire, 1970/1993; Ryan, n.d., Smyth, 1992). It is important to note that when learners achieve the heutagogical state of self-determined learning, they retain control over their own learning journey. This means that such learners may choose to learn in P or A environments if the learning outcomes in these environments mesh with the heutagogical learners’ perceived learning goals (Wark, 2018; Wark & Ally, 2020a, 2020b, 2020c).

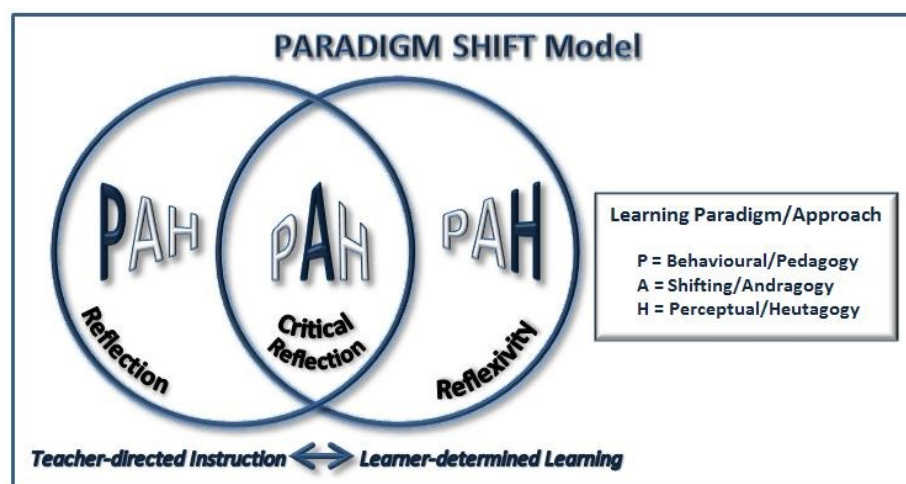


Figure 1:

Paradigm Shift Model showing movement between teacher-directed and learner-determined approaches to learning. P=a behavioural/pedagogical, A=a shifting/andragogical, and H=a perceptual/heutagogical paradigm and approach to learning (Wark, 2018).

## Omni-tech Taxonomy

The Omni-tech Taxonomy (Figure 2) reflects varying levels of technology integration expected in relation to, from the left to right left columns, the behavioural/Pedagogical (P), shifting/andragogical (A), and perceptual/heutagogical (H) learning environments. The foci of technology integration in the P environment are upon the acquisition and practice of knowledge, skills, and attitudes. In the A environment, practice leads to technology integration competency. The learner gains the transformative capacity to perpetually learn about and take on a leadership role in technology integration as they deem necessary in the H environment. Even when choosing to participate in P or A learning environments, the heutagogical learner retains the power and choice over their own learning (Wark, 2018; Wark & Ally, 2020a, 2020b, 2020c).

A more detailed graphic of the transformative learning and leading (H) phase of the Omni-tech taxonomy is provided to the far right of Figure 2. In this phase, learning to integrate emergent technologies occurs naturally. The learner's emergent technology integration experiences and perceptions dynamically influence each other through reflexive thought, and innate drives to find purpose, achieve mastery, gain autonomy, and innovate within the learner's holistic, natural, omni-learning personal learning environment (PLE). Instrumental reasoning, rational thought, and creative intuition are dynamically employed, enabling the learner to "reflexively interpret experiences and transform perceptions, while simultaneously satiating intrinsic drives for purpose, mastery, autonomy, and innovation" (Wark & Ally, 2020a, p. 1016; see also Wark, 2018).

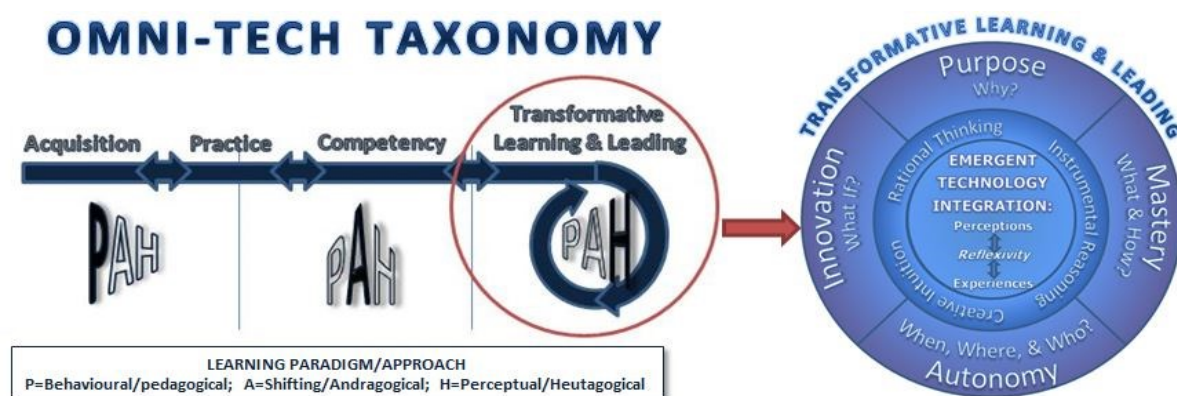


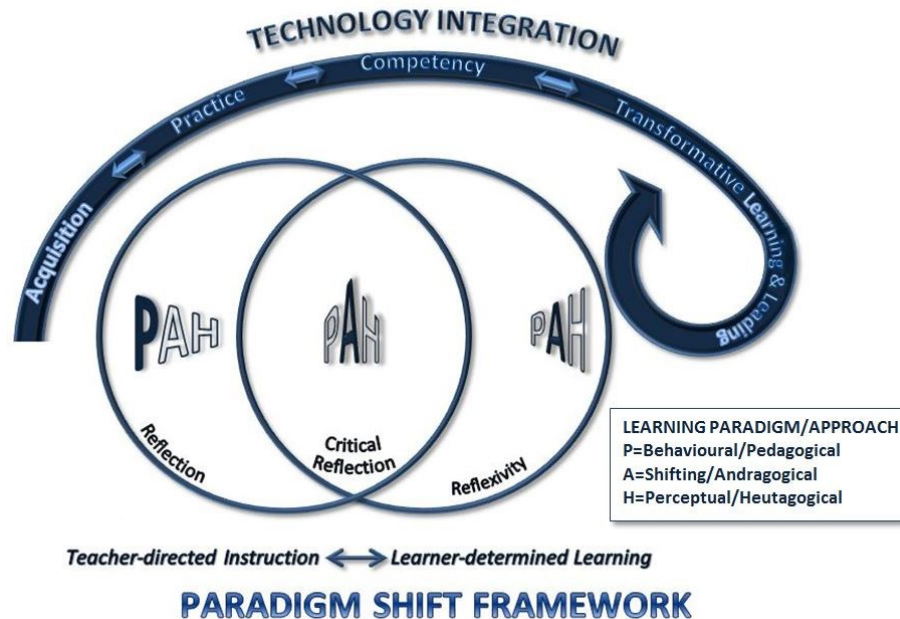
Figure 2:

Omni-tech Taxonomy, illustrating transformative learning and leading details (Wark, 2018).

### Paradigm Shift Framework

The Paradigm Shift Framework combines the Paradigm Shift Model and Omni-tech Taxonomy to capture the learner's levels of emergent technology integration within the P, A, and H environments (Figure 3). Briefly stated, the teacher determines what and how technology knowledge, skills, and attitudes are acquired and practiced by the learner in a P environment; assessment reflects efficiency and effectiveness of the learner's progress. The learner engages with other learners, the instructor, and possibly other experts to facilitate the learner's growing competency with emergent technology integration for learning in the A environment. Learning how to use these technologies is no longer a major learning outcome; technologies are simply means for facilitating discourse, critical reflection, and other higher-order thinking skills within the learner's growing learning community (Garrison et al., 2001).

The integration of emergent technologies for learning in the H environment is an ongoing, dynamic, and reflexive process. During this process, "the learner determines: (1) what is learned, (2) how it is learned, (3) why it is being learned, (4) when and where the learning occurs, (5) who is involved in the learning, (6) how the learning can be adapted for use in novel situations, and (7) what learning outcomes and consequences this technology integration may have on the learner, the environment, and collective humanity" (Wark & Ally, 2020a, p. 1017). While engaging in this process, the learner enhances their capacity for transformative learning and leading (Wark, 2018; Wark & Ally, 2020a, 2020b, 2020c). The author developed this framework (including the model and taxonomy) to bind the theoretical, conceptual, and substantive elements of the dissertation. It was subsequently used to guide the research process, to create the research instruments, to analyze the data, and to interpret the findings of this study.



**Figure 3:**  
**Paradigm Shift Framework, illustrating the merger of the omni-tech taxonomy**  
**(dark blue technology integration arrow at the top of this image) with the Paradigm**  
**Shift Model (Wark, 2018).**

## DATA COLLECTION

Data was collected from 12 volunteer MEd DE student respondents during four-month Fall 2017 semester at an online North American institution. Seven respondents were enrolled in Course A; five were enrolled in Course B. The courses were selected purposively. Course A involved the theory and practice of distance education, including the use of emergent technologies. Course B focused upon mobile learning.

Data from all participants were collected from online quantitative pre-term and post-term questionnaires, and participant-verified early- and post-term qualitative telephone interviews. While not statistically significant, the quantitative data was used to verify, extend, and enrich qualitative data findings (Cohen et al., 2011; Mertens, 2015). A second coder was employed to co-code 25% of the interviews. After the coders established the coding framework together, 17% of the interviews were independently coded. On average, 146 units were coded per sample. Inter-coder reliability was 92%, with a 0.947 Kappa Coefficient, and intra-coder reliability was 93.6%, with a 0.985 Kappa. The coders also separately coded the final qualitative scores for each participant, yielding a 93.3% level of agreement.

Data collected from respondents was supplemented with observations and other notes from the researcher's journal, as well interviews with the two course instructors and information drawn from the public version of the course pages located on the University website.

## RESULTS

The study included 35.3% of students who completed both courses and reflected the gender ratios found in both class settings – 75% of respondents were female, 17% were male, and 8% did not select a gender designation. Forty-two percent lived in large urban



centers (population >500,000), and 75% had completed over half of the MEd DE program before participating in the study.

On the pre-and post-term questionnaires, respondents were asked to assess their current level of technology integration for each of 16 emergent technologies on a scale where 0=no response, 1=little knowledge (I know very little about this technology), 2=acquisition (I am beginning to gain the basic skills and knowledge required to use this technology), 3=practice (I am practicing how to use this technology), 4=competency (I am able to use this technology as required for school or work), and 5=capacity (I adapt this technology for use in unique or novel situations). These technologies included: 3D printing, augmented reality, cloud computing, conversational interfaces, educational game technologies, flipped classrooms, interactive whiteboards, learner analytics, mobile learning, massive open online courses (MOOCs,) online learning management systems (LMSs), online social networking, open content, QR codes, tablet computing, and wearable smart technologies.

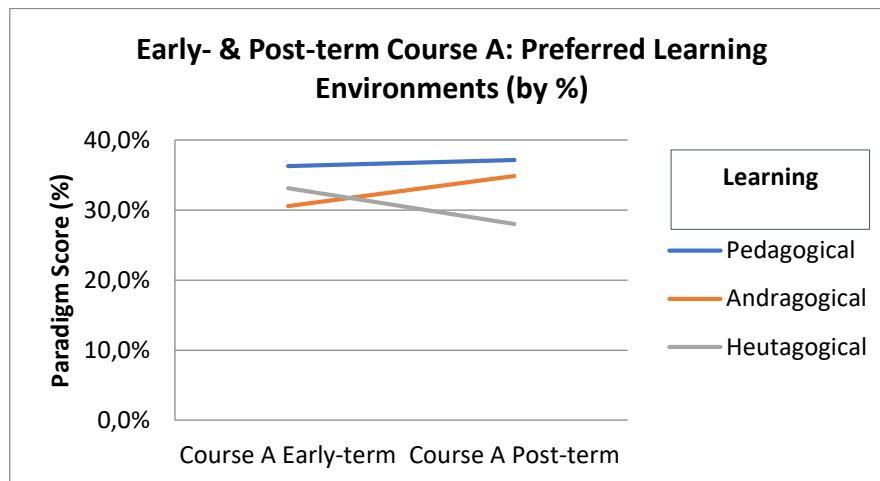
Averages calculated for all 16 technologies for each respondent indicated that all respondents in both courses were at the early practice level in integrating these emerging technologies for learning at the beginning of the term. As a collective, respondents in both courses who had consistently preferred a P environment throughout the term reported a minor drop to the earliest stage of the practice level by the end of the term. None of these P respondents had voluntarily set a personal emergent technology integration goal for the term.

Respondents from both courses whose paradigmatic preferences appeared to shift during the term collectively reported a slight increase in their practice level with the 16 technologies when the term was over. When the shifting paradigm group was separated into those who: (1) did not set an emergent technology integration goal for the term, (2) set, but did not change their goal, and (3) set and then changed their goal, it was found that those who did not set a goal or set, but did not change their goal, had perceived negligible change in their pre-term practice level with these technologies. Those who set and changed their goal during the term reported a minor increase in their practice level by the end of the term.

Lastly, respondents who had consistently preferred the H environment reported a significant increase to the early stage of the competency level by the end of the term. All of these H respondents had voluntarily set an emergent technology integration goal during the term.

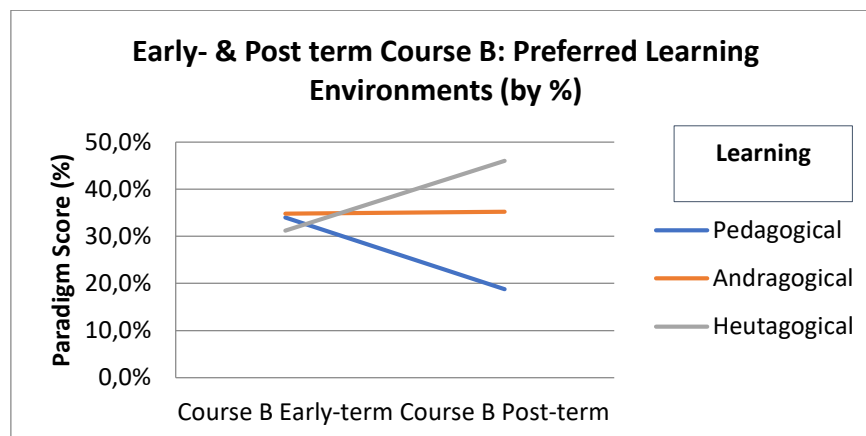
Although the dissertation questions focused upon individual and group results by paradigmatic preference and therefore did not report on class-based results, some differences between the two classes were noted during the data analysis process. At the beginning of the term, respondents in both classes appeared to be fairly evenly distributed between P, A, and H learning environment preferences. Nevertheless, by the end of the term these course-based results changed significantly.

Course A participants' collective preference for a P learning environment early in the term (N=36.3% of Course A respondents; Figure 4) increased by the end of the term (N=37.1%). The second most preferred environment early in the term was H (N=33.1%), while A was least preferred (N=30.6%). However, by the end of the term Course A participants preferred an A (N=34.9%) over an H (N=28%) environment.



**Figure 4:**  
Early- versus post-term Course A preferred learning environment.

At the beginning of the term, 34% of Course B participants indicated preference for a P learning environment, 34.8% preferred an A environment, and 31.2% preferred an H environment (Figure 5). By the end of the term, 46% of Course B respondents most preferred an H learning environment; 35.2% preferred an A environment, and the remaining 18.8% preferred a P environment.



**Figure 5:**  
Early- versus post-term Course B preferred learning environment.

Interviews with the two course instructors and perusal of the public pages containing information about the courses on the University website were combined with respondent data to create a comprehensive profile for each classroom setting. Subsequent examination of the course environments indicated that most course elements were nearly synonymous between Course A and B. Course assignments were the most learner-determined element in both courses. Early in the term, some respondents from both courses told the researcher that they could only choose assignments from a list provided by the instructors. However, the course syllabus webpages stated that learners could adapt assignments with instructor approval. The instructors confirmed that what was posted on the web pages was correct. The one instructor said that in addition to telling students during synchronous sessions that they could approach her with assignment ideas, she also posted asynchronous notification of this to the class Moodle site. The other instructor told a similar story, while noting that some students did not seem to absorb this information early on, but they did once they began to work on group assignments in her course. Furthermore, she said that even though students were given choice and flexibility in assignments, they still came back to her with

a myriad of questions that, had they more fully understood their level of freedom, they would not need to ask.

Both courses provided learners with opportunity to merge real world, often work-related goals and activities with assignment expectations. During her interview, one instructor recalled an assignment example that demonstrated heutagogy in action. A student approached her with a request to do a PowerPoint presentation to show workplace college administrators that the program this student taught was a viable candidate for online learning. The student wanted to apply what she was learning in the course to a professional goal that was important to her. The other instructor said that group assignments in her course were also designed to encourage real-world application of learning for students.

Assignment submission deadlines were also flexible in both courses. In the one course, suggested submission dates during the term were given by the instructor, but students were not required to submit assignments until the end of the term. In the other course, students could negotiate assignment deadlines by sending an email to the instructor detailing suggested submission dates and related reasons. The instructor usually accepted these suggestions.

One of the least learner-determined elements in both courses was assignment grades. Nevertheless, students were given some control over grading. In the one course, 20% of the final grade for each student was determined by that student. The instructor typically accepted that grade unless she felt that the individual was being too hard on themselves. In the other course, group members were asked to grade each other on the two group assignments. The instructor only interfered with these grades if she noticed that a student who had not done much group work was given a grade that they did not deserve.

Course activities were a blend of the two paradigmatic approaches. In both courses, the instructors and students were bound by course timelines; course content and related asynchronous discussions were broken into one or two week segments. While the one instructor did not discuss course readings during her interview, the other said that learners in her class could select the readings that they felt were most relevant to them. (This option was vexing to those who desired a more teacher-directed approach; some respondents in her course voiced concern about missing readings that might affect their course grade.) Students in the one course could respond to readings and postings at any time during that module timeframe. Students who were posting comments that were meant to prompt discussion in the second course were encouraged to post these catalytic comments early during each module timeframe if they wanted to give others time to respond. In this second course, the instructor sometimes moved module deadlines slightly to prompt further discussion.

In one course, students could attend as many synchronous sessions as they desired; however, their self-assigned participation grade was expected to reflect this attendance record. In the other course, four synchronous sessions were mandatory. The fifth was an optional session on mindfulness teaching and learning strategies.

All in all, assignments, activities, and timelines were significantly learner-centered, and in some respects, learner-determined in both courses. It appeared that the instructors were very approachable and open to learner suggestions, ideas, timelines, and goals. The instructors intentionally sought to make learning activities and assignments relevant to other aspects of their learners' lives, and seemed very pleased when students could complete assignments that met course *and* workplace goals. Some student control was given in both courses in relation to assessment and grades; in the one course students appeared to have primary control over one-fifth of their grade, while in the other course, students were asked to grade each other on group assignments.

In some ways, the courses also reflected the behavioural paradigm. Most of the behavioural elements appeared to be institutionally or faculty-driven. For instance, course readings and related activities were set into a module format that disallowed much flexibility in discussion topics or timeframes. To counter these external controls, the instructors attempted to give students as much time as possible to post comments. The instructor who talked about course readings also said that she asked respondents to select the readings that they were most interested in to supplement the mandated list of core readings.

The course syllabus, objectives, outcomes, general assignment areas, assessment, course start and end dates, and related global aspects of the course were also determined through the behavioural-based hierarchical system. Instructors and students in these courses had little to no control over these course elements. Nevertheless, within this strict global environment, both course instructors did what they could to provide a learner-centered, and where possible, a learner-determined instructional environment. To illustrate, while there was little flexibility in course start and end dates set by the program and institutional administrators, both instructors gave the learners substantial leeway to determine their own assignment submission deadlines.

In synthesis, both courses appeared to offer almost the same mix of P, A, and H approaches to teaching and learning within their class environments. Based on this assessment, there appeared to be nothing that could really explain why Course A respondents, as a collective, slightly strengthened their early-term preference for a P environment by the end of the term. However, the moderate increase in some respondents' preference for an A environment might be explained by the instructor's attempt to offer as many learner-centric or learner-determined opportunities as possible within the behavioural paradigm manifested in the current educational system.

What seemed more puzzling was that there was very little difference in the near balance between P, A, and H course profiles in both courses at the beginning of the term, yet by the end of the term the Course B profile had become significantly more H and less P in nature. Nothing in the aforementioned comparative analysis between the two courses seemed to illuminate any noteworthy differences.

A return to respondent-generated data indicated that 43% of Course A respondents had voluntarily set a personal emergent technology integration goal for the course. In contrast, 80% of Course B respondents had voluntarily set an emergent technology integration goal for the term. One possible explanation for this difference could be related to respondents' understanding of the term, emergent technology.

Examination of respondents' interviews showed that many respondents viewed emergent technologies as utilitarian tools, even though all respondent instruments used in the study offered Veletsiano's (2010) much broader definition of the term, emergent technology. The pre- and post-term questionnaires presented the definition before asking respondents to rate their level of integration of the 16 emergent technologies listed in the study. This list of technologies included examples of conceptual, systemic, and innovative emergent technologies in addition to technological tools. Veletsiano's definition was also presented at the beginning of the early- and post-term interview scripts that respondents received two weeks or so before the scheduled interview date. The definition was read to each respondent when each interview began and the respondent was then asked if they had any question about the definition before interview questions were asked. Comments collected during interviews indicated that most respondents referred exclusively to technological tools when discussing emergent technologies, as these following quotes illustrate:



**The technology is the tool or medium I present my classroom in, the curriculum itself is impacted only by new pedagogies for learning or changes prescribed by the Ministry of Education... [Respondent 1]**

**My goal at the beginning of this course was to be more at ease with mobile technology. I wanted to be using my tablet and cell phone more effectively for learning. I recently bought a tablet about one year ago in preparation for this course. I wanted to learn more about mobile technology and be more efficient with the tool. I wanted to learn more about mobile applications like creating apps. [Respondent 2]**

**What I am thinking of here is relevancy of the applications. Do they have the ability to actually apply from different tools and incorporate them into our work? [Respondent 3]**

**One respondent in Course B described how her understanding of the term, mobile learning, had deepened as the term evolved. During her post-term interview, she said:**

**So my initial thought going into the class was that my interest is in instructional design and mobile learning is just a design on a mobile device. But then coming out of the class, I realized that it was a little bit different, more in depth. Mobile technology is a whole other world, a whole other entity in terms of itself, in terms of being able to explore, and all of that.**

**Only one respondent reported struggling with understanding emergent technology in the broader sense of the term. In his post-term interview, he said:**

**I still find it confusing, kind of like last time. When I think about the phrase, "emergent technologies," I immediately go to physical tools. Then suddenly I have to backtrack and consider something like ideational or conceptual tools.**

**While Course A provided respondents with the opportunity to explore and incorporate the use of emergent technologies (as defined by Veletsianos, 2010), the course objectives, content, activities, and outcomes did not focus upon technological tools. Although Course B was about the conceptual and systemic notions of mobile learning, Course B objectives, activities, assignments, and outcomes were designed to employ the use of mobile devices. If most respondents associated the term, emergent technology, solely with the utilitarian notion of technological tools, this could explain why more Course B respondents set personal emergent technology goals, since Course B incorporated various uses of mobile devices for learning during the term. As other results indicated, respondents who preferred a P environment did not set emergent technology integration goals for the term because the curriculum, instructor, course objectives, and course outcomes did not mandate that they should. To illustrate, when these respondents were asked if they set a personal emergent technology integration goal for the term, one Course A respondent said, "No... this isn't a technology course." Another Course A respondent gave this reply:**

**I did not with this course and I was actually a little perplexed by that question just because it's an online teaching and learning course about online teaching and learning, but it is not really a course specifically about technology. So, it wouldn't be a course where I would set that type of goal because I am not going to learn about new technologies in it.**

**On the other hand, those who preferred an H environment set and achieved their personal emergent technology goals because they felt empowered and determined to do so. Thus, it is possible that respondents in Course B collectively increased their preference for an H environment by the end of the term because they perceived that the course enabled them**

to: (1) set and achieve personal learning goals with mobile technologies, and (2) understand the conceptual and systemic notion of mobile learning as an emergent technology.

There was one other course element that may have most empowered Course B respondents to not only acquire higher levels of emergent technology integration, but to become more self-determined learners. That was the inclusion of mindfulness teaching and learning strategies in that course setting during the term.

In the final, and optional Course B synchronous session, the instructor discussed a variety of teaching and learning strategies that she had initiated during the term to help learners become more mindful. Some of the mindfulness techniques that the instructor employed were strategies such as connecting with students on a regular basis; offering apps that helped learners stay connected with other members of the class, stay organized, remain current; and helping students to incorporate other life events, goals, and activities with course-based events and outcomes. All synchronous sessions started with a short personal meditation period, where students learned to set aside external interferences and demands to focus on being present and in the moment. They were asked to identify reasons for taking the course that were personally meaningful and to discuss personal goals that they hoped the course would help them to achieve. They were taught mindful listening by observing how the teacher listened mindfully to them and then practicing this strategy when working with others during the course.

In an unpublished action research project on mindfulness undertaken by the Course B instructor and this author, another group of students enrolled in the same course at a later date described the profound effect that these mindfulness teaching and learning strategies had on them. Many said that they were unaware of any personal goals when they enrolled in the course. Through patient mindful practice, course participants helped each other identify personal goals and keep abreast of progressive development towards that goal as the term unfolded. Students also said that a number of the teaching and learning strategies, including apps introduced by the instructor and other learners, helped them focus on the task at hand and organize their lives, while significantly reducing their stress level. More importantly, these respondents reported that the mindfulness strategies they employed as a result of taking this course helped them to gain control over their own learning, as well as other aspects of their lives. Given this insight into how this one unique Course B factor affected another group of learners, it was quite possible that this factor had great influence in the development of a more learner-determined class profile by the end of the term.

## CONCLUSION

This paper has presented a comparative analysis of preferred educational paradigms in two MEd DE courses at an online North American institution during one four-month term in 2017. The data used for this presentation were derived from a doctoral dissertation that used a critical pragmatic research paradigm and a transformative mixed methods methodology to explore what educational paradigm most empowers learners to acquire higher levels of emergent technology integration for learning on demand. Twelve graduate students volunteered to join this study. A Paradigm Shift Framework (Wark, 2018) was designed to create quantitative online pre- and post-term questionnaires, as well as early- and post-term qualitative interviews to capture these participants' paradigmatic preferences and their perceived levels of integration mastery with 16 emergent educational technologies throughout the term.

The study considered two disparate epistemic views on the source of human knowledge (that is, external, objective world or subjective, innate human perceptions), the educational paradigms associated with these views (behaviourism versus perceptual

learning), and the learning approaches employed to translate these theories into daily educational practice (pedagogy versus heutagogy; Emery, 1981; Hammond et al., 2011; Hase & Kenyon, 2001, 2013). At the practical level, the most significant difference between these epistemic stances, paradigms, and learning approaches was who retained the locus of control over learning – the teacher or the learner (Wark, 2018).

The most significant finding was that while all respondents reported being at the early practice level with integration of the 16 emergent educational technologies when the term began, their end-of-term integration levels varied remarkably. Those who preferred a perceptual learning paradigm/heutagogical approach acquired an early competency level with these emergent technologies, while those adhering to a behavioural paradigm/pedagogical approach reported a slight decrease in their pre-term practice level by the end of the term.

Collectively, respondents in Course A and Course B indicated a slight preference for a behavioural paradigm/pedagogical learning approach early in the term. By the end of the term, the preference for the behavioural paradigm/pedagogical learning approach had increased slightly among Course A respondents, while the preference for a perceptual learning paradigm/heutagogical approach had significantly increased and the preference for a behavioural paradigm/pedagogical approach had significantly decreased in Course B.

Both course instructors gave students considerable choice among course aspects within the instructors' realm of control. Examples of such aspects included offering numerous assignment topic choices, opportunities for students to tailor assignments to suit unique goals, flexible deadlines for assignment submissions, and some self- or peer-grading options. Other, more global aspects of both courses, such as the course syllabus, module delivery timelines, and assessment allocations were controlled by department faculty, the institution, or the government, so could not be changed by the instructor without consent from these educational stakeholders. Thus, it was determined that both class environments manifested similar aspects of both paradigms and related learning approaches.

Exploration as to why such differences in respondent paradigm preferences occurred within and between two course settings that appeared to be notably similar in nature led to two tentative conclusions. First, examination of respondents' interview discussions showed that many respondents viewed emergent technologies as utilitarian tools, even though all respondent instruments provided Veletsiano's (2010) definition of the term, emergent technology. While Course A provided respondents with the opportunity to explore and incorporate the use of emergent technologies, the course objectives, content, activities, and outcomes did not focus specifically upon any technological tools. Although Course B was about the conceptual and systemic notions of mobile learning, Course B objectives, activities, assignments, and outcomes were designed to employ the use of mobile devices. This might have explained why more Course B respondents set personal emergent technology goals. This decision, in turn, may have affected their paradigmatic preferences during the term.

The second element that may have increased participants' preference for a perceptual paradigm was the use of mindfulness teaching and learning strategies in Course B. These strategies sought to help learners focus on the present environment, identify their personal reasons for pursuing education and enrolling in the course, organize their busy lives, and gain control over their personal learning experience. Although this author was unaware that these techniques were being employed in the Course B setting at the time of the dissertation study, preliminary analysis of subsequent research with another group of students from the same course during a subsequent term indicated a marked increase among respondents in that study to become more heutagogical learners as the term progressed.

The relationship between respondents' conception of the term, emergent technology and the employment of mindfulness teaching and learning strategies in Course B may have individually or collectively impacted the preferred learning paradigm profiles in both courses. It is concluded that if learners are able to recognize the possibility of learning about an emerging technology in a course, they are more likely to set a personal emergent technology goal while enrolled in that course. Secondly, if mindfulness strategies encourage learners to set, assess, adjust, and achieve personal learning goals, such learners are more likely to set personal emergent technology integration learning goals during the term.

Future research on each element must be undertaken before more definitive conclusions can be drawn. To this end, it is recommended that further research employing the term, emergent technology, includes measures to ensure that participants' conception of the phrase aligns with the study definition. One approach could be to engage in a discussion that involves asking participants what the term means to them; another might include listing specific examples of various emergent technologies that they may be familiar with. Care would have to be taken, though, so that participants did not feel offended, intimidated, or naïve during the process of clarifying the term. Presentation of examples may also influence the direction and focus of participants' subsequent responses, so the inclusion of examples must be carefully considered before being added to study instruments. More research is also needed to determine to how profound and enduring the inclusion of mindfulness teaching and learning strategies in a formal online course are on learners' ability to achieve personal emergent technology integration goals for learning on demand.

The potential influence of being better able to identify emergent technologies, practicing mindfulness teaching and learning techniques, or both on learners' choice to set and achieve personal emergent technology integration goals is significant because, according to the dissertation results, the relationship between preferred learning paradigms and personal goal setting impacts the level of emergent technology integration that students achieve. In brief, the more empowered and self-determined a learner is, the higher the level of emergent technology integration the learner attains. Adopting a perceptual paradigm and heutagogical approach to learning will assist educational stakeholders, *especially learners*, in developing learners' capacity to perpetually and reflexively integrate appropriate emergent technologies in this world of unpredictable, dynamically-fluxing technologies and educative practices.

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## MITIGATING THE MATILDA EFFECT ON ELIZABETH BURGE: LIGHT A FIRE, DON'T CURSE THE DARK

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### ABSTRACT

This paper aims to restore the voice and work of Elizabeth Burge, a historically relevant and underrepresented female pioneer who contributed extensively to the field of distance education (DE) and online distance learning (ODL). Burge's extensive writing and research career spanned over 40 years and covered topics such as innovative educational technologies, gender issues, andragogy, and online learning. As educational technology advanced, she continued to research its ongoing impact on learners. Burge was a leader in providing strategies and theories on how to enhance learning opportunities while still questioning their value. Before her 2012 retirement, Burge was a prolific researcher, writer, editor, and collaborator who provided many literary contributions to adult learning, distance education, and online distance learning. As the technology evolved, so did Burge's research. Like many women before her, Burge's work appears to remain anonymous in the field of technology-enhanced education, while her male counterparts' literary contributions are deemed seminal. This paper aims to reinstate Burge's voice by illuminating her work on gender issues, DE, and ODL to garner her a rightful place in educational history and provide a role model for women in academia.

**Keywords:** Gender, gender equity, online distance learning, women in online learning, women in distance education, Elizabeth Burge, Matilda effect

### INTRODUCTION

In her Foreword to the book, *Toward New Horizons for Women in Distance Education* (Faith, 1988), Elizabeth Burge refers to the work of Virginia Woolf. Virginia Woolf's essay (1929), *A Room of One's Own*, identifies women collectively as a historically poorly paid, silenced underclass, and emphasizes women's right to be acknowledged and valued in society. Woolf rejects the patriarchal hierarchy that values men's voices and writing over women's, and leads to the social and economic suppression of women. Woolf poses that if women do not see themselves represented in the form of a female model, it is difficult for them to develop their voices. Woolf's (1929) essay states that women's work is not represented accurately throughout history, and therefore it is not acknowledged as essential or valued as equally as men's work. The absence of the historic contribution of women in society suppresses them financially and socially, while maintaining the male-dominated hierarchy. As Burge pointed out in her Foreword, Virginia Woolf's writings

reflect the social barriers that continue to restrict women socially, professionally, and financially to this day.

Woolf's work sought to restore the voices of forgotten women writers by returning the authority to women's voices and experiences, and placing historical value on their work (Gildersleeve, 2020). Considering the current systematic barriers, pay inequality, and the hierarchy of importance placed on men's work compared to women's, Woolf's work is as relevant today as it was in 1929. Today, the patriarchal structures that silence women remain intact and manifest in complex, multifaceted reinforcing and subliminal ways (Morgan et al., 2018). The absence of women's voices from history fortifies the status quo of the male hierarchy in society and the value of men's work as being superior to women's, leading to the normalization of gender inequalities and biases. Reestablishing the critical historic contribution of women in the field of technology, which permeates every aspect of the modern world, is a crucial step in establishing a model for future generations of women and the economic and social value of women's work in contemporary society.

During the COVID-19 pandemic, technology-enabled and online distance learning became the focus of educational institutions worldwide. Research on the history and methods of online learning was at an all-time high as educational institutions scrambled to integrate online learning into their systems (Jadunandan, 2022; Sandhu, 2022). Currently, most of the seminal literary references in DE and ODL are by male researchers. Few references acknowledge the innovative work of female pioneers of the same era (Bainbridge & Wark, 2022). This paper aims to look back on the work and experiences of one female pioneer as a model for future women educators and academics specializing in the male-dominated world of technology, distance education, and online learning. As the world transitions to a technology-enhanced education system, the inclusion of women's academic contributions is crucial not only to advance their careers but also to address skill shortages, provide role models and mentorship for future female leaders and researchers, and to increase the innovation potential of the world (Council of Canadian Academies, 2012).

Women have made gains in educational attainment, yet remain underrepresented in full time-faculty and leadership roles in education (Kaufman & Colyar, 2022). In Canada, for instance, women continue to face cultural and structural barriers in academia and encounter gender disparity in appointments and earnings (Cohen & Kiran, 2021; Doolittle & Wang, 2022; Momani et al., 2019; World Economic Forum, 2019).

Systematic barriers prevent many women from rising beyond a certain level in academia. This phenomenon is known as the *leaky pipeline* and refers to the decrease in women's representation as they move up in an organization's hierarchies. The *sticky floor* concept refers to how women are denied opportunities for career advancement, forcing them to remain in lower-level positions within the organization's hierarchy (Bishu et al., 2017). These two concepts highlight the inherent ways that organizational systems discourage or prevent women from moving to positions of power where they could execute change. "These barriers are composed of a set of unstated norms and distorted expectations that obstruct women in their quest to reach their full professorships, deanships, research chairs or university presidencies" (Kaufman & Colyar, 2022, p. 9).

Women often face complex and conflicting professional decisions and either opt out of academia because of systemic barriers commonly related to caregiving or are pushed out of academia on their path to upward mobility. For example, women only make up 39% of all full-time faculty in Canada and are paid, on average, \$13,000.00 CAD less than their male counterparts (Baker et al., 2019; Napierala & Coylar, 2022). This underrepresentation of women in full-time professorship roles, due to gender inequalities and structural barriers, obstructs women from reaching the highest level of academia, thereby preventing

them from making changes that would reduce systematic barriers and enhance gender equality.

Women continue to be significantly under-represented in the Science, Technology, Engineering, and Math (STEM) fields. In the history of science, women's scientific achievements have often been undercut, under-accounted for, or minimized. This systematic undervaluing and underrepresentation of women's contributions to science is known as the *Matilda effect* (Rossiter, 1993). The Matilda effect applies not only to science but also to other male-dominated (or "male coded") areas of academia, such as educational technology and distance education (Schmidt et al., 2021).

The Matilda effect is evident in many areas of academia. For example, males dominate the field of research; female researchers are either forgotten or their work is under-recognized. Studies have shown that women's research is less cited than men's and that women receive less credit for co-authored work when writing with their male counterparts (Morgan et al., 2018; Sarsons, 2017; Zhang et al., 2021). Women professors are also more often targeted for service work (such as mentoring and sitting on committees) than men, which leaves them with less time to do grant proposals, research, and conference presentations that help academics to garner tenure (Sarsons, 2017). Currently, there are not enough women in positions of power to help reduce gender inequalities and systematic barriers, or to encourage women's recruitment, promotion, and retention in academia. Therefore, this paper aims to restore the voice and work of Elizabeth Burge, a female pioneer of DE and ODL, by reflecting upon her experiences as she encountered systematic barriers during her career and by illuminating her literary contributions as a woman pioneer in this field.

#### ELIZABETH BURGE BACKGROUND

Dr. Elizabeth Burge specialized in gender issues, andragogy, and online learning. Dr. Burge's four decades of research and literary contributions reflected the inception and development of technology-enabled learning, and the struggles and other experiences of women educators as they adapted to, and developed techniques and methods that enhanced learning. Like Woolf's (1929) characters in *A Room of One's Own*, Burge was often dismissed by her male counterparts, yet she forged a path to becoming a female leader in the new era of distance education. However, like the contributions of many other women pioneers of technology-enabled learning research, Burge's research has been lost, overshadowed by the male-dominated work of the same era (Bainbridge & Wark, 2022; Rossiter, 1993). By illuminating Burge's work and firsthand experiences, women researchers and educators are provided with a role model who strove tirelessly in the male-dominated arena of DE and ODL to provide a voice for women in this field.

Dr. Elizabeth Burge was born in Australia and received national professional accreditation from the Australian library association, an undergraduate degree in English literature and history from the University of Adelaide, and a graduate diploma in technology from the University of South Australia. For 16 years, Burge worked in the Australian state library and for various Australian government agencies. During this time, Burge started to manage a distance education library that relied on telephone conversations and mail. This is where she began to think about changing things to help students access information (Bainbridge & Wark, 2022).

In 1980, Burge moved to Canada to accept a one-year government scholarship to look at better ways to provide students with knowledge and improved teaching methods (Bainbridge & Wark, 2022). She took on a position in the adult education department at the Ontario Institute for Studies in Education (OISE). At OISE, Burge completed her MEd (1981) and her EdD (1993) in adult education. Burge worked at OISE until 1993, when she took a teaching position at the University of New Brunswick until her retirement in 2012.

Bainbridge and Wark's (2022) interview with Burge presents a woman who firmly believed in advancing technology to improve education that most benefits learners. Burge's students often commented that she liked to ask "brain-burning questions" (Burge & Haughty, 2001). With the student experience always at the front of her mind, Burge perpetually considered why technology was being used, how it was being used, and how it impacted the end user, the students. In Bainbridge and Wark's (2022) interview, Burge reveals her insatiable curiosity and passion for teaching and learning:

Goals...I didn't think in that way. I just saw opportunities, like where someone was talking at a conference about ethics. Then I'd go home and think about it: "There is no book on this in distance education, so I better get going, etc." I think its more when I hear issues and opportunities popping up, or I see something that I think that is not helpful for the students or for the teachers or for the researcher or whatever (p. 45).

Burge's extensive work includes the evolution of technology teaching and learning strategies, and portrays a historical perspective of DE and ODL learning through a feminist lens.

#### **FEMINIST EDUCATIONAL EXPERIENCES AND RESEARCH**

Dr. Elizabeth Burge became interested in distance education (DE) when she ran a Distance Education library for the Australian Government's Technical and Further Education (TAFTE) vocational training programs, where she acted as Director of the Resource Center for the Open College of Adelaide. In this position, Burge was "dealing with people who were posting papers to various people and having telephone discussions." She became interested in finding better ways to manage DE to improve students' learning experiences (Bainbridge & Wark, 2022). In 1980, Burge applied for and received a one-year scholarship to the Ontario Institute for Studies in Education (OISE) in the adult education department. Six years later, Burge completed her adult education doctoral dissertation on exploring how master's students experienced computer conferencing. At the time, Burge's research on computer conferencing was at the forefront of educational innovation.

In 1982, Burge, a graduate student at OSIE, found out about the International Council for Correspondence Education, now known as the International Council on Distance Education (ICDE) developments at the University of British Columbia and decided to attend (Bainbridge & Wark, 2022). At this time, women only made up about one quarter of the attendees. Burge and a group of her female counterparts became tired of the male-oriented language describing all instructors and students as male, so they finally took action. They shocked the men by speaking out and protesting the exclusion of women. "Women delegates (25% of the total) began to express their feelings of trivialization, marginalization, and exclusion—as a result of various linguistic structures, vocabulary, and behaviours indicative of sexism, an unconscious assumption of male power" (Burge, 1990). At this conference, Burge and the other women DE leaders who attended also decided to join together to try and make a change. Burge believed that, to disrupt the status quo, women had to band together, avoid negative ideas, and get things done (Bainbridge & Wark, 2022).

After this conference, The Women's International Network (WIN) of the ICDE was formed to support, network, and provide professional development for women in DE (Burge, 1990). Burge also started to write and distribute a small newsletter based on her continued conversations with other female DE leaders (Bainbridge & Wark, 2022). Consequently, three years later, at the 1985 Melbourne ICDE conference, the DE women leaders were ready to take on the challenges of what they called "the disappearing women" who were

absent in learning materials and instructions, and in references to the terms, “teachers” and “learners.” The Melbourne ICDE was deemed a success when Burge’s male counterparts admitted that they must follow the women’s demands to change; to use more gender-inclusive language within their learning materials, lecturers, and professional conduct. Burge and her female counterparts led the way to removing the normalized language barriers that undervalued women’s work, while providing recognition for the under-represented “disappearing women” who studied and worked in the field of DE and the broader realm of academia.

As a result of the 1985 Melbourne ICDE conference, Burge and the other DE women leaders decided that they had to record and formalize a feminist approach in this field. Burge described how they decided to pursue this initiative to provide women with a voice in the field of DE. She explained that:

We have to start recording what's going on here. These women teachers, researchers, administrators, you name it, what is their experience like in their DE activities?... What is going on out there? How can we help women educators using DE modes? And how can we help male teachers, etc., to consider females’ perspectives? (Burge, quoted in Bainbridge & Wark, 2022, p. 44).

From this initiative, the very first book about female distance educators and their experiences was written. *Toward New Horizons for Women in Distance Education* (Faith, 1988) included articles from women DE educators from around the world, dealing with gender factors, equity, and new challenges for women in distance education. In Burge’s introduction to the book, she used the adage “Light a candle, don’t curse the dark” as a metaphor for the title of her chapter in the book. Burge believed that it was important for women to identify issues of inequality and act on them. Like Woolf, Burge focused on the darkness or the absence of the unwritten history of women in DE, working diligently throughout her career towards shining a light on female educators’ contributions in this field. Rather than complaining about the lack of equity for women in academia, Burge helped to design a space for recording the experiences of women educators and their students.

In the forward of *Toward New Horizons for Women in Distance Education* (Faith, 1988), Burge referred to Virginia Woolf’s (1929) position that women need to have female writers as models to prevent gender bias and promote equality in literature. Like Woolf, she argued that women are different from men and therefore represented a different world perspective. This perspective needed to be acknowledged and recorded to attain gender equality. Having personally experienced the impact of gender inequality, Burge became the driving force for this inaugural book on women in distance education. Then, in her 1989 article, *Women as Learners; Issues for Visual and Virtual Classrooms*, Burge further explained the inherent systematic problems in education and the importance of advancing feminist education by quoting Lenskyi, “...traditional male-dominated educational systems maintain existing gender, race, and social class inequalities, by controlling the construction of knowledge and defining how knowledge should be transmitted” (p. 7). Burge’s recognition of women’s experiences as DE learners and teachers, and her illumination of academic and societal barriers for women in her academic literature improved women’s visibility in DE and ODL.

Burge also experienced the Matilda effect during her career. A self-described incorrigible metaphorical thinker, she wrote a cat analogy to describe the features of learning technology, which became quite popular (Bainbridge & Wark, 2022). Burge grew angry when she learned that a male professor publicly presented her poem as his own, refusing to give her due credit. This illustrative experience represents the systematic under-recognition of women’s accomplishments, and the liberties that some men take with



women's work. Women academics are already at risk of the *imposter phenomenon* (the perception of not belonging and viewing themselves as charlatans in their field)—despite their successes or accomplishments (Clance, 1985; Vaughan et al., 2019). The blatant lack of acknowledgment of women's accomplishments not only leads to the devaluing of their work, but also affects their self-confidence and career decisions, thus contributing to the leaky pipe syndrome that permeates the academic ranks.

Burge's professional career reflects women's perpetual struggles and barriers in academia. She tirelessly fought for the right for women's work, their voices, and their experiences to be acknowledged and acted upon. Before Burge retired, as a final homage to the value of women's work, she designed a free website to record the experiences of women activists over the age of 65 from Atlantic Canada (Bainbridge & Wark, 2022). With support from the library of the University of New Brunswick, Burge interviewed numerous female activists and recorded their experiences for posterity. "The project honours the work of Atlantic Canada elder women activists in various societal arenas (including but not limited to women's issues) and captures the wisdom in their experiential learning" (Burge, 2018). The Women of Social Activist of Atlantic Canada webpage ([womenactivists.lib.unb.ca](http://womenactivists.lib.unb.ca)) illuminates the work and social activist experiences of over 30 women activists from the Atlantic provinces. This was the final formal activity that established Burge as a leader in active feminist ideology, a collaborator, writer, editor, educator, and an inadvertent feminist historian who provided a contemporary model for future generations of women.

#### A PIONEER IN DISTANCE EDUCATION AND ONLINE DISTANCE LEARNING

Elizabeth Burge's research offers a timeline of technology innovation in DE and ODL. Her interests and research changed to reflect the ongoing innovations in learning-enabled technology since the beginning of her career. From the inception of video and audio conferencing to modern online learning, Burge's work followed the development of the electronic highway. Her work focused on how adult learners in distance education could learn better with technology.

In addition to her work on gender issues, Burge, a prolific researcher, also authored many articles and collaborated on research involving innovative models for library management, virtual library environments, and andragogy in distance education and online learning environments (Bainbridge & Wark, 2022).

At the base of Burge's research and teaching was her commitment to her students and their learning. Although she advocated for technology-enhanced learning in distance education from its inception, she always questioned its use. One of her favourite quotes from Neil Postman reflected her feeling regarding the use of technology in education:

Every culture must negotiate with technology, whether it does so intelligently or not. A bargain is struck in which technology giveth and technology taketh away. The wise know this well and are rarely impressed by dramatic technological changes and are never overjoyed' (Postman, 1992, p. 5 as cited in Bainbridge & Wark, 2022, p. 47).

From her experiences with conferencing technologies to online learning, Burge debated the advantages and disadvantages of using advancing technology in distance education. She believed that the intelligent use of technology should support the strengths, learning goals, and learning styles of learners, provide flexibility and choice, and promote interaction (Burge, 1990, 1994; Burge & Roberts, 2012)

In 1993, Burge co-wrote *Classrooms with a Difference: A Practical Guide to Using Conferencing Technologies*, a comprehensive manual that established adult learning

principles of learning strategists, models of teaching, course design, and the use of various conferencing technologies in student learning. This manual provided many learner-centred strategies that are still relevant today. It also reflected Burge's constructivist views, which permeated her work and her commitment to finding effective methods of using technology in DE. Integrating a constructivist perspective into her work, Burge believed that asking first the 'why and when for what' questions before asking the 'how' questions were critical to controlling the timing of interventions in the learning process. She also believed that the 'what' and 'why' questions should connect to learning strategies and outcomes, without denying the learner's choices.

Burge understood that instructors needed to balance the amount of freedom available within a course by moving into a more facilitative role, while providing a flexible teaching and learning environment (Burge, 1995). During her career, Burge also developed and co-wrote several articles and chapters that provided practical solutions and examples for teaching and learning, instructional design, and the systematic development of conferencing and online systems (Bainbridge & Wark, 2022).

At the cusp of the contemporary learner-centred movement, Burge posited that technology should always enhance the learner's experience, putting the students' learning experience first by building inclusionary relationships. Burge wrote:

"My teaching and learning design experience also have reinforced my conviction that adult educators must be more concerned with dialogue about information rather than the delivery of information; with learning processes rather than learning products, with the learner first, rather than with the teacher first" (1991, p. 3).

Whether researching library or distance education topics, Burge's work revolved around the idea of consistently providing a flexible, learner-centred DE environment for adult learners.

Burge was an advocate and true pioneer of learner-centred education as a means for instructors to engage with and design courses that facilitate self-directed, responsible adult DE learners. Burge's continued position on a student-centred approach to DE can be validated with a quick search in Google Scholar, which recently produced over 17,000 scholarly articles on the subject since 2018.

### **CRITICISM OF BURGE'S WORK**

Garrison's (1988) criticized Burge's (1988) work on adult learning in distance education by suggesting that her work appealed to people's emotions and was one-sided. This gendering of emotion by Garrison reinforces the social construct that men control their emotions while women are a product of their emotions. These gender-laden rules are based on stereotypical expectations, and consequently, display of women's emotions results in the depletion of women's interpersonal power in work relationships. "In many ways, this treacherous emotional terrain can be likened to an emotional battlefield. Unsuccessful navigation of the emotional battlefield creates cycles of powerlessness that impede women's ability to develop and leverage power in their work relationships" (Ragins & Winkel, 2011, p. 389).

Burge was acutely aware of the power of Garrison's gendered dismissive language, patiently responding that learner-centred DE is learner-responsible, not learner-directed. She submitted that Garrison provided nothing new in his critique of her work and hid his opinions behind "scholarly scaffolding" (Burge, 1989). When asked what some of the challenges she faced in the field of DE and ODL were over the years, Burge replied, "Men who don't think women are as clever as they are, if not sometimes more" (Bainbridge &

Wark, 2022, p. 49).

## CONCLUSION

Ironically, after toiling diligently throughout her career to record and promote the work of female educators in DE and ODL, Burge's own work now seems to be hidden in the dark creases of history. Despite women's best efforts, successes, and contributions to society, much of their work remains shoved to the back of library shelves. Discounting the contributions and perspectives of women in DE and ODL impoverishes the field for all educational stakeholders. Those who seek a richer, more equitable educational system and culture must continue to fight for women's and other minorities' places in the field, striving to replace the historically entrenched, one-sided patriarchal hierarchy and systemic biases that promote inequality and render some work less valuable, simply due to the contributor's gender.

This paper sheds light on Dr. Burge's four decades of research, highlighting her literary contributions and collaborations in gender issues, androgyny, innovative technologies, and online teaching and learning. In addition, illustrations of Burge's firsthand experiences as a woman pioneer in DE and ODL provide a view of DE through a feminist lens. Dr. Burge is a collaborator, facilitator, conservator, volunteer, writer, poet, editor, teacher, and female pioneer in our field. Her legacy of manuals, strategies, textbooks, papers, and newsletters reflect ideas, strategies, and theories that are relevant to this day.

Although the technologies Burge wrote about continue to change, her innovative strategies and ideas have not. Burge's promotion of a DE model that puts the learner first is more relevant now than ever. Her dedication to providing and promoting a gender-sensitive, gender-inclusive learning environment in the field of DE makes her an excellent role model for all academic stakeholders. Looking back on her career, collaborations, and challenges, Dr. Burge muses, "It is lovely sometimes being a pioneer" (Bainbridge & Wark, 2022, p. 47).

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