



Cultivating a Growth Mindset within a Blended Learning Environment at a University in South Africa: A Design-Based Research Study

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Abstract

This Design Based Research study attempts to unlock the spirit of personal empowerment among professional adult learners within the higher educational system through an interpretivist qualitative lens of observation and reflection.

Adult Learners in this research include the educators assigned to transmit subject information and the professional development of relevant skills and competencies as required within a Blended Learning Environment. Candidates were selected from professional academic, training and learning institutions and the sample of individuals hold professional positions in their respective fields. The workshop practices were based on simplified hand, eye, body, breathing, calming, mental stimulations to enhance the awareness of their ability to self-regulate their thinking, emotional and physiological processes. Furthermore, the outcomes of the research also showcase how often overlooked qualities of Human Excellence can be unhinged through Intentionality, Awareness and Attentional Training, Reflection/Contemplation, and Mindful Learning Processes.

The overall analysis and feedback sessions are drawn from the candidates' demonstrable understanding of their ability to enhance awareness of their personal perceptions, biases, internal energies, proprioception, mental states, and habitual behavioural conditioning. These components of personal change within a blended learning space are designed as part of the Foundational and Intermittent phases of application to the professional development program. Design principles and related artefacts derived from the DBR methodology provide educators and researchers a means by which educational practices are potentially optimised. In conclusion this DBR incentivises researchers, adult educators and policymakers to deepen investigations in improving professional development standards and practices within Blended Learning environments in the Higher learning institutions.

Key Words: Adult Learning, Attention, Awareness, BL, Blended Learning, DBR, Design-Based Research, Experiential Learning, Facilitation, Fixed Mindset, Growth Mindset, Intentionality, Mindfulness, Mindful Learning, Personal Development, Professional Development, Psychological Flexibility, Reflection, Technology-Enhanced Learning.

Abbreviations and Acronyms

AC	Abstract Concepts
AE	Active Experiments
ASM	Autism Spectrum Disorder
BL	Blended Learning
CE	Concrete Experience
DBR	Design-Based Research
DT	Design Thinking
ETs	Emerging Technologies
HEIs	Higher Education Institutions
ICTs	Information and Communication Technologies
KELT	Kolb's Experiential Learning Theory
LL	Lifelong Learning
OERiGA	Open Educational Resources of Indigenous Games
PD	Professional Development
RO	Reflective Observation
TEL	Technology-Enhanced Learning

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Chapter 1: Introduction

Introduction

The turbulent situation of the current Global Health crisis (COVID) with its unprecedented challenges is threatening our perception of control. The perception of control is when people believe that they have a certain power over a situation (Abboud, 2017). This control can be seen in how our daily lives are impacted by the global health crisis, and especially how education is offered. Along with this crisis, ruling authorities in most countries imposed restrictive measures by limiting physical interactions. As a result, the educational institutions were forced into implementing emergency remote teaching (ERT) as a short-term solution for the continuation of education (Dhawan, 2020). As an alternative to ERT, the blended learning (BL) process should have been implemented as the mode of teaching-and-learning to ensure that learners learn more effectively. BL is a multi-faceted concept that is dependent on the context to improve the teaching-and-learning process. BL is a mindful process which includes a mixture of different teaching and learning techniques, with the effective integration of Information and Communication Technologies (ICTs) beneficial to the learning process and the learning outcome in mind. The effective integration of ICTs refers to using the technologies as mediating tools to improve the learning experience of learners (Kirkwood & Price, 2014). This means that blended learning courses can either be offered as fully face-to-face, fully online or offered as hybrid courses (Medina, 2018). So, the design and integration of BL courses are dependent on the context. Within a BL environment, educators also add to the personal touch of the courses. Educators are required to interchangeably shift roles from content owners to facilitators of learning within the BL environment accordingly to effectively scaffold the learners' learning process (Ali et al., 2015; Medina, 2018).

Some educators were unable to effectively use the ICTs in their practices during ERT. Most learners were overwhelmed with an overload of information during this time. The communications to learners online were not clear and this caused confusion (Dhawan, 2020). This was because educators were unprepared as they were untrained in BL or overwhelmed, as this was an overwhelming period for everyone. Studies (Belluigi et al., 2020; Dhawan, 2020), have found the implementation of ERT at many Higher Educational Institutions (HEIs) in Africa to be unsuccessful as poor pedagogical practices were exposed. For more than a decade prior to the global health crisis, there has been resistance to using emerging technologies (ETs) at some Higher Education Institutions (Ng'ambi et al., 2016). As a result, educators were not all well-prepared to teach online. It appears many educators were trying to replicate their face-to-face instructions, instead of customising the courses to enhance the learning process and experience online (Hodges et al.,

2020; Tzavara, 2021). As such, the educators' unpreparedness when teaching online caused disruption and coordination constraints of the information presented during the learning process (Mardiana, 2020).

Professional development (PD) was identified as a key prerequisite to equip educators with the knowledge and skills to optimise their performance in these increasingly challenging online and blended learning environments (Lim et al., 2016; Abboud, 2017). However, the effectiveness of professional development is profoundly influenced by people's mindsets. A mindset is a set of beliefs that predetermines the way in which each person thinks, feels, interprets, and responds to any situation or challenge in life (Kamins & Dweck, 1999; Dweck, 2016; Abboud, 2017; Dweck & Yeager, 2019). People who are influenced by a fixed mindset perceive challenges as obstacles. These challenges can be stressful to some people which can cause difficulty with concentration and making decisions. It will cause one to become highly resistant to change due to fear of the unknown (Dweck & Yeager, 2019). For instance, the ongoing barriers of the effective uptake of Information and Communication Technologies in educator practices has been slow at HEIs. In fact, in Higher Education Institutions educational change has often been inconsistent, slow, and resisted by many educators (McQuirter, 2020).

The literature reviewed by the researcher has not adequately addressed the reasons for the resistance to constructive change of educators at HEIs to overcome these challenges. This phenomenon of resistance may impact the adaptation to the BL process. As such, the intention of the researcher is to explore the cultivation of a growth mindset towards better understanding the design of a practice for adult learners as a personal development tool. A growth mindset can be defined as being psychologically flexible which is the skill of being adaptive. The more flexible one becomes, the less one will be overwhelmed by emotions (Hardy, 2020). To acquire a growth mindset is a journey towards self-discovery, as one learns to understand oneself, one learns to regulate one's thinking patterns and emotions. Research in psychology suggests that having a growth mindset has many advantages, such as coping better with transitions as people's minds are in a positive state (Kamins & Dweck, 1999). This may assist with closing the gap in the literature and overcoming the phenomenon of adaptation to a blended learning process.

A design-based research (DBR) study will be undertaken to determine the applicability of the process of designing the practice. Design-based research is defined as a systematic but flexible research approach used to bridge the gap between theory and practice through reflective inquiry. The DBR approach consists of four phases (Reeves, 2006; Herrington et al., 2007). The first phase is focused on the analysis of the practical educational problem collaboratively by researchers and

practitioners. The development of solutions to the educational problem that can be implemented in the classroom is proposed in phase two (Reeves, 2006; Herrington et al., 2007). The development of the proposed solution is guided by existing design principles and Kolb's (1984) cycle of experiential learning framework. The implementation and evaluation of the proposed solutions are tested and refined in practice through iterative cycles in phase three. The practitioner works closely with the participants and closely observes the intervention by reflecting in or on-action to make changes during or after the process. Reflection on-action and reflection in-action are two processes of reflection, according to Schon (1983). Reflection on-action is the process of consciously looking at past experiences, actions including emotions. This process assists the learners with acquiring new knowledge and understanding of the event. For example, video recordings of teaching lessons can provide information for reflection when they are watched after the event has taken place. Reflection in-action is the ability to think on one's feet and to make a conscious decision moment by moment (Schon, 1983). For instance, noticing one's patterns of thoughts. For knowledge to be discovered and internalized, the learner must test assumptions and hypotheses about the outcomes of decisions and actions taken. After this reflective process, the learner can weigh the outcomes against past learning and future implications (Schon, 1983). This reflective process is integral to all phases of experiential learning. From identifying intention and choosing the experience, to considering preconceptions and observing how they change as the experience unfolds. Reflection is an essential tool for adjusting the experience and to measure outcomes (Bolton, 2010). In the fourth phase, the draft principles for the design of the intervention or learning environment as the proposed solution is reflected on and analysed, to produce the design principles. These design principles can be used to inform future development and implementation decisions (Reeves, 2006; Herrington et al., 2007).

1.1. Key Concepts

The following section provides a brief overview of the key concepts that are central to the research study. That is, blended learning, growth mindset, reflection, mindful learning, and adult learning principles. These key concepts will be elaborated on in the next chapter.

1.1.1. Blended Learning (BL)

Blended learning (BL) is a multi-faceted concept. The understanding of the blended learning concept, as Ali et al. (2015), and Medina (2018), emphasize, may potentially be a concern, as it may pose challenges when educators' understanding of the process is approached with limiting beliefs. Thorne (2003), affirms that the BL concept is an advancement of the online learning concept. BL

should not replicate classroom teaching activities. It should be thought of as a transformation of the online and face-to-face instructional mode, as the learning outcome achieved should be more meaningful. Thorne (2003), adds that the blended learning concept is in fact a process of the progression of learning, to provide educators with possibilities to customize their curricula to fit adult learners' learning styles and learning needs. Medina (2018), relates to Thorne's (2003), view on the BL concept, and further explains that BL is a process that facilitates the levels of interaction amongst adult learners. Furthermore, the BL process provides educators with the decision to adjust teaching and learning practices to implement synchronous as well as asynchronous delivery modes.

Extensive research has been carried out on educator professional development courses within the blended learning process. Some scholars, such as Ololube et al. (2015), assert that educators tend to be more willing to engage with this change to BL as one clarifies the importance and benefits of mindful learning. However, no study is explicitly defining the transitioning process of educators to be able to change to a BL process from the face-to-face instruction mode at South African Higher Education Institutions. Educators have had to use new platforms and technological tools, whilst they are trying to adapt to the transitioning to the blended learning environment. Along with these challenges, they must be able to cope with their own stresses as we face uncertainty, as well as the stress and psychological imbalances of students (Babelyuk, 2021). With demands increasing, it is becoming increasingly difficult to concentrate effectively, as life is becoming more distracted and complex (Nideffer & Sharpe, 1978). The understanding of the mindset therefore plays an important role in finding solutions for current barriers that may impact the educators' ability to cope and adapt to the challenges at hand.

1.1.2. Growth Mindset

A mindset incorporates all one's senses, it is a way of thinking and feeling one's perception and perspectives. It is a habit of the mind formed overtime within a certain context. It is about being conscious and the mind is therefore set in a certain way. The mindset, as Dweck and Yeager (2019), concedes, plays an essential role in guiding an individual's belief and the choices the person makes. Mindsets are powerful as people's beliefs about themselves, and the world affects their success or failures. The mindset therefore shapes the cognitive mechanism of how people deal with the perceived outcomes. According to Dweck's (2006), theory there are two types of mindsets that exist; a fixed mindset and a growth mindset. A fixed mindset is the belief that one's abilities, talents or intelligence are innate and cannot be changed. Whereas a growth mindset is the belief that one's initial basic qualities such as intelligence and abilities can be developed overtime through hard work, learning and effort (Dweck, 2006; Dweck & Yeager, 2019).

1.1.3. Adult Learning Principles

In the 1920's, the Adult Education field became prominent as a professional field of practice with its own knowledge base consisting of speculative theories, principles, and descriptions as to how adults learn. The adult learning theory, also known as andragogy, is a concept that highlights the distinct ways adults best respond to learning. In their useful research, Knowles et al., (2014), the adult learning theories, assumptions and adult learning principles are presented to best approach and structure the learning process to positively impact the adult learning experience. Adult learners, according to Knowles et al. (2014), are mostly motivated to learn when they have a need to know and experience the results of their efforts. Adults are therefore selective to learning content that is useful and meaningful in dealing with challenges or circumstances that are relevant in their daily lives and work.

Knowles et al.'s (2014), theory suggest that learning from work and actual real-life experiences is necessary, as this process enables adults to apply their learning to solve specific problems. Subsequently, for learners to make meaning of their experiences, it requires the incorporation of reflective practices as daily activities into their lives (Matthew et al., 2017). To scaffold a learning process by building on the learners' past experiences to learn new information will add greater context to their learning.

1.1.4. Reflection

Reflection is a thinking process that requires a mental effort for a sustained focus on a specific learning activity for example to either change or improve it. Reflection is basically about what one pays one's attention to. It involves observation and a stillness of the mind, as a sustained intention and attention is required to focus for a deeper understanding of a situation. Dewey's (in Rogers, 2002), explanation of reflection is that it can only be acquired through practice and experience, as it is a systematic thinking process that is active and purposeful. According to Dewey (in Rogers, 2002), an awareness is required during the reflective thinking process to focus one's mind in a specific direction to find answers during an internal dialogue with oneself. The author explains that without an awareness, one will go into autopilot. To be able to reflect, therefore, requires an awareness of using one's mind. Reflection is about slowing down one's mental activity to think and focus on the specific learning activity. So, reflective thinking can only really transpire when one settles one's mental filters to think clearly, to make meaning of what is being learnt. Through this reflective thinking process, one acquires critical thinking and logical reasoning skills (Rodgers, 2002).

Matthew et al. (2017), suggest that the key aspects that supports educator and learner professional development is through reflective practice. Reflective practices, according to the authors, facilitate the process of learning, teaching, and one's understanding. By learning to pay attention through the reflective practices, it encourages the development of seeing in a new way and to raise awareness. The reflective process promotes a mindful awareness of one's surroundings, making it possible for one to identify causes that may contribute to problems which enables one to establish action plans that can be applied as possible solutions (Mathew et al., 2017). Mindful awareness through reflection, as Abboud (2017), suggests, are actions to be taken to cultivate a growth mindset when learning mindfully.

1.1.5. Mindful Learning

Mindful awareness is a state of mind that strengthens one's conscious awareness to recognise how one is feeling or what one is thinking in any given moment as a result of one's sensitivity to the present context. To be mindful is a process of actively noticing new things which allows one to be present as one pays attention to the current information without judgement (Abboud, 2017; Langer, 2016). To approach learning in this way will result in better performance as one focuses on the present whilst using experiences of the past. The practice of learning mindfully, therefore, means to focus on the present moment during a learning situation and absorbing what is happening as it happens. The mindful learner, as Langer (2016), suggests, acquires a deep awareness with a flexible and adaptive mindset enabling the learner to actively engage in the present moment of learning by noticing new insights and connections for application in different contexts.

1.2. Context of the Study

For more than two decades, the influence of the digitally networked world, as Ng'ambi, et al., (2016), affirm, has changed the South African Higher Education Institutions (SA HEIs) significantly from poor Information and Communication Technology infrastructures to more cloud-based ICT infrastructures which have unlimited educational resources, as well as possibilities available beyond the institutions. The purpose of the ICT implementations at the HEIs was for technology-enhanced learning (TEL) and for education to be more accessible. Technology-enhanced learning means that educators should use the technology for the purpose of improving the learning process by making students more actively involved (Kirkwood & Price, 2014). The University in which this study is based is one of the South African Higher Education Institutions (HEIs). It has access to

more cloud-based ICT infrastructures, however, educational practices have remained mostly unchanged (Ng'ambi et al., 2016).

This university's vision for 2030, is to shift their approach from a face-to-face-based teaching institution into an online and blended learning environment, with the intention of enhancing the adult learners' learning experience. The blended learning process is not a new concept. BL has proven to be more effective than online learning and the traditional face-to-face instruction, as it accommodates an increasingly diverse population of adult learners whilst adding value to the learning environment (Alammary et al., 2014; Medina, 2018). To ensure that learners remain engaged, researchers (Lim et al., 2016; Abboud, 2017), advise that professional development courses be implemented at institutions as a lifelong learning (LL) process for educators to remain upskilled as technologies constantly evolve.

The challenge of the effective implementation of the BL process will be to effectively prepare educators as they are the drivers of change and not the institutions (Brown, 2011). Change can be difficult (Dweck, 2019), but it cannot be achieved when educators perceive the technology as a barrier to their career growth (Mardinia, 2020). Thus, the context of this study will seek to potentially contribute to the personal development of educators at South African HEIs to transition to the blended learning process in these challenging times, where a high level of adaptability is required.

1.3. Research Objective

This research proposes the blended learning system as the solution to improve the learning experiences of the diverse community of educators at South African Higher Education Institutions. Professional and skills development of educators is a critical aspect within HEIs for the successful implementation of the BL process. This research aims to contribute to the existing knowledge of the blended learning system by closing the gap established from the literature that the researcher reviewed. Professional development for educators within the BL system exists in South Africa, but the gap in literature has not sufficiently addressed the phenomenon to support educators at HEIs for adaptation to a blended learning process.

The main objective of this research, therefore, is to explore ways of potentially cultivating growth mindsets of educators as adult learners at South African HEIs as a personal development tool through an intervention. The intervention may support adult learners with the challenge of transitioning from a face-to-face teaching approach to a blended learning process, and these skills

may advance adult learners to better prepare for challenges that may arise overtime. The reason for this proposed study is that technology in education has been an area of change that has been problematic. These problems seem to persist as the current research on the ERT during 2020 informs us (Dharwan, 2020). In addition, Gachago et al., (2020), discuss the encouragement of creativity during the blended learning professional development short course offered at an institution in the Western Cape, with an extension of developing design-based thinking mindsets. However, the scholars are not explicit in defining if the course involves the cultivation of growth mindsets. The design-thinking mindset embodies the growth mindset. The growth mindset is key to people being creative as well as innovative, and it will determine their response to feedback (Dweck & Yeager, 2019). Educators at HEIs have multiple job responsibilities and their personal lives to lead. However, added to these challenges are the psychological imbalances of students which are added stresses caused by the global health crisis (Oducado et al., 2020). It is noted that stressful or threatening situations inhibit learning (Vogel & Schwabe, 2016). As Dweck's (2019) research concludes, psychological perceptions are very powerful, as they can prevent, or allow us to achieve our full potential, depending on our current mindsets.

To achieve this overarching objective, it is important to

- Understand the existing body of knowledge of the blended learning (BL) process and its proposed strategies to prepare Educators through the transitioning process from the face-to-face instruction and then identify the gaps in knowledge,
- Understand the concepts that lead to a 'growth mindset' as a possible solution to address the gaps identified above,
- Design the intervention as informed by the literature and the interview with the participants in phase 1,
- Implement the intervention that will potentially assist with the cultivation of a 'growth mindset' which was developed outcomes in real-world context, and
- Analyse the outcome of the intervention through Kolb's (1984), Cycle of experiential learning theory.

1.4. Research Questions

The main research question for this study that is being addressed is: *In what ways can the cultivation of a growth mindset address the phenomenon of adaptation to a blended learning (BL) experiential process?*

The main question is divided into the following sub-questions, which are guided by Kolb's Cycle of Experiential Learning Framework (Kolb,1984):

1. *How do Higher Education Lecturers make sense of the blended learning (BL) process experience and their adaptation to change?*
2. *What are the perceived prerequisite concepts required in an intervention programme that could promote a growth mindset to adapt to a blended learning (BL) experiential process'?*

Conclusion

A BL environment is the most effective teaching-and-learning approach to be incorporated into the South African HEIs. Professional development programmes have been established as a key pre-requisite to prepare educators to the adaptation to a BL environment from the face-to-face instructional approach. However, it has been established that the success of professional development programmes is determined by people's mindsets. A design-based research intervention is thus explored during this study to cultivate a growth mindset to support educators as learners to adapt from the face-to-face instructional mode of teaching to a BL approach. The study is deemed to establish the design principles to better understand the design of a practice that will lead to the cultivation of a growth mindset for adult learners as a personal development tool. The more flexible the mind, the more learners can adapt to change and any challenges that may occur. The key concepts have been briefly discussed in this chapter; that is blended learning, growth mindset, mindful learning, reflection, and the adult learning principles. The concepts will be elaborated on in more detail in the literature review in chapter 2.

Chapter 2: Literature Review

Roadmap of the Chapter

This chapter first looks at Kolb's (1984), experiential theory, as the conceptual framework and lens that is used to guide this study to contextualise the research findings. Then, it looks at the key concepts central to this study that consistently emerge from a synthesis of the literature review and that have provided me with insights on the ideas on how to approach the intervention. These are, the blended learning concept, then growth mindsets. Thereafter, mindful awareness will be discussed. The adult learning principles follow, including the work of Malcolm Knowles on the assumptions of how an adult learner learns. This is followed by a discussion of reflection. Mindful attention, mindful awareness, and reflectiveness are inner resources, skills and habits that are developed through deliberate practice and intention. The concepts of mindful awareness, mindful learning, reflection, and adult learning principles are assumed to be the focal areas of development in the growth-directed learning process. These interrelated concepts supported the research questions and framed the design-based instructional intervention towards the development of design principles in connection with how the intervention works in practice, grounded in the data.

2.1. Conceptual Framework

Herrington, et al. (2007), propose that theory informs practical design principles when using the Design-based research (DBR) methodology. Theory, as Ochara (2013), affirms, acts as a lens through which we focus and magnify only important information. To address the phenomenon of adaptation to the BL environment, I will need to look at existing theories of learning that are most useful to design the intervention. Thus, I will discuss Kolb's (1984), Cycle of Experiential Learning conceptual lens, through which the phenomenon will be examined.

2.1.1. The Experiential Learning Process: Kolb's (1984), Cycle of Experiential Learning

Kolb's (1984), cycle of experiential learning theory provides useful ways of constructing knowledge through one's lived experience. The experiential terminology is the theoretical perspective on which to describe the individual's learning process that is applied in all situations and aspects of their lives (Kolb, 2015). The theory of Experiential learning is grounded in the assumption that learning is a natural human phenomenon (Kolb, 2015), since human-beings learn everyday of their lives (Mima, 2018). It is a hands-on participatory process for one to make use of one's senses to make sense of one's experience and what has been learnt for long-term memory. The experiential theory promotes deep learning rather than surface learning. Surface learning refers to memorising information (Kolb, 2015), whereas deep learning is when one learns about a specific subject matter for instance using different learning methods, from role playing and discussions, to reading and

experimentations. The combination of methods improves the learning process and learner memory retention when they are learning through application and discussions rather than memorising (Kolb, 2015). During discussions, learners will learn from others' perceptions and the different perspectives which will lead to a greater understanding as context is created on the content.

Kolb's (1984), cycle of experiential learning theory is a four-stage learning cycle model of experiential processes as illustrated in the graph below. The experiential learning cycle starts with a concrete learning experience (CE) that forms the underpinnings for observations and reflections. These findings are assimilated and distilled into abstract concepts (AC). New clues for action can be drawn and actively tested with active experimentation (AE) from this, to understand. In addition, new learning experiences will evolve. The experiential learning cycle consists of being open and willing to engage in present as well as past experiences by which reflective and observational skills are developed (Kolb, 1984). Reflective observational (RO) skills are developed to mindfully engage and generate new perspectives on one's learning experiences. This is followed by learning to analyse and synthesise information that contributes to the input of problem solving and decision-making processes (Kolb, 1984; Kolb, 2015).

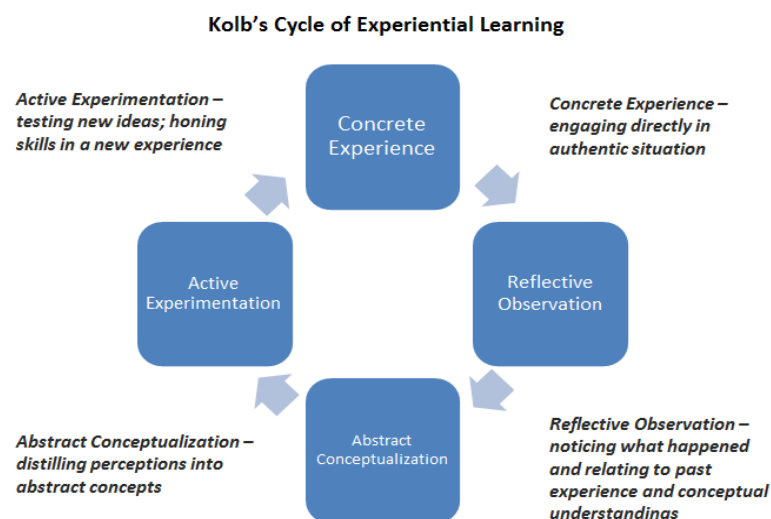


Fig 1: Kolb (1984).

The knowledge that is acquired through the experiential learning process consists of information and facts from formal learning. It also consists of actual experiences and learning activities that incorporate authentic scenarios and /or simulations. For this reason, it can be affirmed that experiential learning is an integration of the knowledge derived from content and contextual experiences, the creative educational activities to facilitate and collaborate in active learning processes as well as being grounded in reflective practices (Kolb, 1984). Whereas, if one looks at learning outside of most formal classroom situations, it is apparent that it is both cooperative and social, as well as being supportive of individual expression and growth (Mima, 2018). One's experience influences one's thinking (Hokor, 2022). As such, the experiential learning process is described by Kolb (2015), in terms of a holistic process of learning.

The learning process incorporates the two interwoven areas of activity; that is, the external environment and the internal environment. The external environment is typically constructed by someone else, and the internal environment is constructed and directed through one's internal resources (Kolb, 2015). For instance, learning from experience encourages learners to apply their knowledge and conceptual understanding to authentic problems or situations. While, the educator plays the role as the facilitator, to facilitate the learners during the learning process. Opportunities for practice and reflection are presented to the students to be more motivated in noticing new perspectives and understandings, which transforms their learning experience. Through this learning process, one's behaviour will change, and so does the brain. Knowledge is therefore constructed through the conversion of one's experience, since one's nervous system is built to respond to one's experience (Jensen, 2005).

2.2. Literature Review

The review of empirical literature informs this design-based research study. It also establishes a theoretical grounding to the study, as it presents the foundation of the knowledge on the topic being researched. The theoretical grounding assists with understanding the existing research that draws attention to knowledge and ideas relevant to the field of study for future research and instructional design interventions (Titus, 2016).

2.2.1. Blended Learning (BL)

The blended learning terminology according to Cronje's (2020), study emerges from the words blend and learning. The word 'blend' infers to combine objects or things, and 'learning' refers to the integration of new knowledge. Alammary et al. (2014), Medina (2018), and Cronje (2020), share the same view that blended learning is not a new concept. Cronje (2020), explains that the BL

concept traces back to a 1999 press release in Atlanta. Cronje (2020), recognises that the concept is afflicted by ambiguity. For Cronje (2020), variations of the BL definition exist, yet only a few authors discern that the BL definitions exclude the learning concept. Cronje's (2020), research refers to the most common definition of BL easily understood as, blending face-to-face instruction with computer mediated instruction. Still, the context guides the decision of what and how to blend. Consequently, Cronje (2020:120), proposes that, "the appropriate use of a mix of theories, methods and technologies to optimise learning in a given context" as the underpinning of the BL definition.

BL is a multifaceted concept. However, many researchers (Ali et al., 2015; Kim et al., 2015; Ololube et al., 2015; Lim et al., 2016; Medina, 2018), point out that BL is not just bolting technology integrated components onto face-to-face instructional modes; it should be a mindful implementation process of these components, including the process of how educators should interchangeably shift roles from content owner to facilitator of learning. Ali et al. (2015), and Medina (2018), affirm that BL presents educators with options to adapt their curricula appropriate to the students' learning needs and learning styles to enhance their learning process. BL is defined differently by different people, as no unified understanding of the concept exists (Alammary et al., 2014; Ali et al., 2015; Medina, 2018; Kastner, 2021). These authors draw specific attention to the fact that educators' understanding of the BL concept may pose challenges when the process is approached with limiting beliefs. Ali et al. (2015), claim that the challenge is when the educators design and approach their pedagogy conforming to their own understanding which may impact the students' learning experience. Medina (2018), foresees that the cause of this challenge may be due to a lack of knowledge of BL as well as being inexperienced in the field.

Thorne (2003), refers to blended learning as an improvement of the online learning concept. Thorne (2003), further adds that BL is a process to improve learning, as it provides educators the flexibility to adapt their curricula appropriate to the adult learners' learning styles and learning needs. The author suggests that educators can create exciting interdisciplinary lessons that expose students to a variety of learning modalities when using the BL approach. Both Thorne (2003), and Kastner (2021), narrate that meaningful learning should be the achieved outcome when BL is used as the mode of learning-and-teaching. Medina's (2018), position on blended learning relates to Thorne and Kastner viewpoints, as such that the author advocates that the BL approach is the best approach to be used for teaching. BL for Medina (2018) is a pedagogical approach that offers educational communities the opportunity to modify and improve the learning process using synchronous and asynchronous delivery modes to increase levels of interaction amongst the adult learners. Whereas Verkroost et al. (2008), define BL as a combination of

pedagogical methods, using a synthesis of different strategies. Verkroost et al. (2008), explain that a course can be designed and offered as fully face-to-face or as fully online when using the BL process.

The shared perspective of Alammery et al. (2014), and Medina (2018), are that there are existing initiatives of efficient BL structures readily available, as the approach has been used for more than two decades. Alammery et al. (2014), however assert that there are three different types of BL design approaches that impact the learning process differently. That is, low-impact, medium-impact, and the high-impact approach. Firstly, the low-impact approaches are when online components are added on top of an already existing traditional face-to-face course. This is without removing any of the existing activities nor redesigning the course for student-centred learning. Secondly, the medium-impact BL approach according to Alammery et al. (2014), are when the educator changes a selection of face-to-face activities to introduce it differently online. For instance, the educator reduces a three-hour face-to-face lecture by one hour, followed by an online introduction for students to discuss in groups. Finally, the high-impact approach are courses that have been redesigned with the intention of a specific outcome. So, the instructional /learning designer or educator designs the course mindfully by implementing specific learning components that will lead to a specific learning outcome. The integration of different modes of teaching and learning processes and ICTs for a BL environment can therefore be explained as a thoughtful or rather mindful process (Alammery et al., 2014; Ali et al., 2015; Medina 2018). This means that the educators must be purposeful in their intention to select the ICTs, content, and pedagogical mode of teaching that will be useful and beneficial for the learning process to lead to a specific learning outcome.

With this view in mind, most authors in the literature share a common perspective on BL as such, that the integration of the BL requires the implementation of different modes of teaching-and-learning, using different Information and Communication Technologies (ICTs) to improve the learners' learning process. However, the definition of Verkroost et al. (2008), is that BL can be fully face-to-face which excludes the use of technologies which cannot be considered for the design of programs during the 21st century. Assuming that, the 21st century economies have emerged into technological driven spaces globally (Mima, 2018). Furthermore, the sense of uncertainty exists with ongoing catastrophes, such as the recent events surrounding the global health crisis that interrupted the normal operation of some HEIs (Nworie, 2021).

To this end, the perspective the researcher draw from the literature, is that BL is the blending of different ICTs combined with different teaching-and-learning modalities dependent on the context. In essence, the BL process is an extension of the traditional way of teaching. BL particularly infers an extension of the educator skills as they add the personal touch to the process. Educators are required to intentionally switch roles from instructor to facilitators of learning as required (Ololube et al., 2015). Accordingly, due to the changing nature of ICTs, educators are required to acquire a wider set of skills to adapt to current and future challenges. Ngambi et al. (2016), affirm that the facilitator or educator's approach to the integration of the ICTs into the teaching-and-learning requires an intentional approach. Since ICTs amongst some educators have been mostly restricted to prescriptive learning and technologies are supposed to be used as enablers to improve the learning experience. Learning is dissimilar in kind from teaching to such an extent that no matter how much educators may teach, it does not necessarily mean that the learners are learning. Educators are the drivers of change and not the institutions. So, the generativity in educators' thinking as well as practices will transform teaching (Brown, 2011; Mima, 2018).

2.2.1.1. Proposed Solutions for the Adaptation from Face-to-Face Instruction to the BL Process

The predictions of many researchers (Carliner, 2004; Norberg, 2011; 2014; Abboud, 2017; Ali et al., 2015; Medina, 2018), are that blended learning systems will be introduced as the new traditional learning-and-teaching models into Higher Education Institutions. It is assumed that the BL process is beneficial for diverse learners as educators can customise the learning process to resonate with all learners' learning needs and skills by integrating the different modes of pedagogical practices and ICTs significant to the learning outcome. The effective integration of the BL environment is proposed to increase learning retention through deliberate interactive hands-on activities using the technologies and learner engagements (Norberg, 2011; Ali et al., 2015). For example, online annotation tools can be used to discuss readings and increase the learner engagement. Another example is game-based learning activities can be used to teach content, when the student plays the game and gets the correct answer then they move to a different level. Blended learning is popular within the corporate sector, and it is rapidly growing as a teaching-and-learning approach in HEIs (Kastner, 2021). Kastner (2021), asserts that the shift from traditional teaching to BL is challenging as the focus and barriers are beyond the ICTs and learning management systems. This shift, according to the author, requires the HEIs to adopt and implement the BL approach systematically and strategically. The challenges of BL are putting additional stress on educators everywhere.

In their useful research on the BL approach as the method of instruction, Kim et al. (2015), clarify that BL is not just about the integration of ICTs into the classroom, it is about the role of the educator as well. The educators are the drivers of change within institutions as their teaching methods will drive the change during the BL process. The authors propose that through professional development educators need to be prepared for the adaptation from the traditional face-to-face teaching approach to BL. The CHOMP (Collaboration, Hands-On Learning, Ongoing Learning, Mindset Shifts, and Personalise) framework is used for the educator development programme at Stanford University's Graduate School of Education. A brief snapshot of the framework for deeper insights, informs one that relationship building is central in a BL environment for collaboration between educators. The professional development programmes are designed for educators as 21st century learners so they may learn and experience the blended learning approach first hand from experts in the field. The experts will play the role as the facilitator or coach. The responsibility of the facilitator or coach is to assess the educators' knowledge and understanding of BL, in addition to making an allowance for their different learning styles and learning needs. It is assumed that the educators will directly learn through experience from the facilitators' practices during the facilitation of the learning sessions. During this learning experience best practices are developed, as educators learn how to personalise the learning process by pace, path, place, and modality. Learning according to Kim et al. (2015), is an active process. Deep learning therefore occurs when one is actively engaged in the learning process, so leaders should encourage an environment whereby learning is approached as a lifelong process as the learning process in BL is ongoing.

Kim et al. (2015), advise that for BL to be successful, integrated educators are expected to shift their mindsets relooking at their roles as educators. The BL process demands an expansion of the educator's skills from the traditional way of teaching to an extension as a facilitator of learning. The educator is also required to be mindful as to when and how to shift roles from teaching a concept to facilitating learners through their learning process. Kim et al. (2015), and Ololube et al. (2015), agree that educators will be inclined to explore the BL process when the value and reasons as to why the BL approach are implemented as the preferred modality at their institutions. Ololube et al. (2015), further propose that institutions expound on the importance and benefits of mindful learning to enable educators to engage with this change to BL.

In the article titled 'Blended Learning: An Innovative Approach', Dangwal (2017), emphasises that whilst the BL approach is required for teaching-and-learning, the implementation process of blended teaching is not an easy task. The scholar advocates that the demands of educators' roles during the BL approach are diverse. The educators are expected to correlate their knowledge with

the present technological advancements and globalisation when adopting the BL approach. The achievement of these expectations is suggested to improve the quality of education as well as minimise teaching errors for the benefit of all learners. However, Dangwal (2017), explains that the traditional face-to-face courses are not regularly revised, and the educators' professional skills and knowledge are not upgraded. As such, learners are not well prepared for the modern market and their professions during the traditional teaching approach only. Dangwal (2017), therefore advises that before implementing the BL approach, basic prerequisites are required for the success thereof. Examples of the basic prerequisites are that flexibility is required in the system, and educators should be well trained and have a scientific attitude with good observational skills. In addition, educators should have a wider outlook and be ready to accept change and be innovative and psychologically flexible. Psychological flexibility is when the mind is more flexible as one is less emotional. So, one can cope with changes in circumstances by changing one's perspective to adapt to the situation by becoming more rooted in the present moment. This trait is especially imperative when there are unexpected events that may occur, or when people must deal with stressors, difficult feelings, thoughts, and emotions that may arise (Ramaci et al., 2019). Dangwal (2017), proposes that the development of the right type of attitude and mindset should be prepared for the BL implementation by making people aware of the benefits of BL. Awareness programmes and discussion forums should also be initiated for the change in attitudes. The author further advises that it is crucial to adapt to BL in a well-planned and organised way.

Professional development (PD) was identified by Lim et al. (2016), as a key prerequisite for the entire HEI to transform to a BL environment. The transformation should however be looked at holistically as such, that it occurs from administrators to the educators, from Faculty policies to learning support teams, and instructional designers should be readily available in each Faculty. Lim et al. (2016), recommend that a mutual understanding of BL is embedded in the PD programmes. To ensure that learners remain engaged, Lim et al. (2016), and Abboud (2017), advise that PD is implemented as a lifelong learning (LL) process for educators to remain upskilled as technologies constantly evolve. This is to equip educators with the knowledge and skills to optimise their performance in these increasingly challenging online and blended learning environments (Lim et al., 2016).

Extensive research on educator professional development to adapt to a BL environment is growing in SA HEIs. However, there is scarce evidence in the literature that explicitly provides details on how to address the phenomenon to support educators with the transitioning process to adapt to a blended learning environment from the traditional face-to-face instructional mode during the PD

programmes at SA HEIs. Educators are training for generations as classroom instructors that stand in front of black or whiteboards, using standard style textbooks, and lecturing to their students. In this environment Mima (2018), affirms that intellectual work is a thought to be knowledge transfer. The learners' minds are treated as containers and learning is seen as the pouring of knowledge into these containers and saving it. With this view of knowledge acquisition, for decades the goal of education has been for educators to give importance to acquiring and saving information (Mima, 2018). In addition, educators have multiple job responsibilities, and the global health crisis has added to their stresses and overall well-being (Oducado et al., 2020). The sudden rush to the online mode during the global health crisis has also influenced the understanding of BL and its requirements for many educators who have not engaged in this process before. Moreover, the ongoing barriers of educational change have been inconsistent and the effective uptake of ICTs at HEIs have been slow (McQuirter, 2020; Ng'ambi, et al., 2016). Change can be difficult (Dweck, 2019), but it cannot be achieved when educators perceive the technology as a barrier to their career growth (Medina, 2018). Stressful situations are noted to inhibit the learning process and the individual mindset is crucial for the success of the learning outcome (Oducado et al., 2020). In the field of psychology several researchers (Kamins & Dweck, 1999; Dweck & Yeager, 2019; Abboud, 2017), have shown how individual mindsets influence their learning, memory, resilience, and the desire to excel in one's performance.

Studies in the South African HE context have also not explicitly outlined the factors that will assist educators to become receptive to the learning process during BL professional development courses. Most professional development programs aim at supporting educators to use the emerging technologies adequately in the classrooms. According to literature (Swartz et al., 2018; Gachago et al., 2021), there are existing professional development programmes at South African Higher Education Institutions for the blended learning process. A University in South Africa provides educators with information as to how to connect with their students by building activities into their classrooms to encourage social inclusion. Social inclusion is defined as the process of making all people within a society feel appreciated and important (Collins, 2022). A neighbouring university here, offers a BL professional development workshop whilst encouraging design thinking (DT) mindsets during the process. This is to cultivate creative confidence through experimentation for educators to use the technology effectively for the design of their curricula in their practices (Gachago et al., 2020). Design thinking is a rigorous, systemic, collaborative, and human-centred approach to problem solving. A brief overview of design thinking mindsets is that these people perceive problems as opportunities and will therefore first define the problem prior

to solving it with others, to ensure that change is not only made on the surface (Gachago et al., 2020).

Research led by Dweck (2006), substantiates that the effectiveness of professional development is profoundly influenced by people's mindsets. A mindset is a set of beliefs that predetermines the way in which each person thinks, feels, interprets, and responds to any situation or challenge in life. In addition, a growth mindset is the foundation to creativity (Kamins & Dweck &, 1999; Dweck, 2016; Abboud, 2017; Dweck & Yeager, 2019). Langer's (2016), research on the other hand, proves that mindfulness has led to one becoming receptive to learning, an increase in creativity, productivity, attention and decrease burnout in the workplace.

2.2.2. Growth Mindset

The mind incorporates all one's senses. It is a way of thinking and feeling, one's perception and perspectives. A mindset is a collection of habits and thinking behaviours formed overtime within a certain context. It is about being conscious, and as a result the mind is set in a certain way. The mindset is an important aspect in guiding an individual's belief and the choices the person makes (Saraff et al., 2020; Dweck & Yeager, 2019). The mindset orients the way one deals with situations, by means of mapping out as to what is happening and making a choice as to what one should do. Both sets of authors relate that mindsets are powerful as people's beliefs about themselves, and their world consciously and unconsciously directly influence their behaviour and choices. So, the difference in mindsets may lead to distinct differences in behaviour (Saraff et al., 2020; Dweck & Yeager, 2019). In other words, one's response to their own thoughts has an enormous influence on how well people will reach their full potential. As such, the mindset shapes the cognitive mechanism of how people deal with the perceived outcomes, ultimately affecting their achievement.

Mindsets are best understood under two categories according to Dweck (2006). That is, a growth mindset and a fixed mindset. Dweck's (2006), growth mindset theory infers that having this mindset is the belief that one's abilities can be developed by putting in time and effort to achieve one's goals. Yet, one is unable to estimate as to how much change is possible in one's development. The growth mindset is a starting point for change (Dweck, 2006). Even so, one should decide where their efforts for change will be most valuable. Dweck's (2006), research informs us that when one acquires the belief that one can develop one's abilities, it enables the achievement of one's true potential. The author's research led to the understanding that people with growth mindsets have a commitment and willingness to immerse themselves in learning

without relying on approval from others is what drives them towards their personal achievement. It is understood that not everyone entirely has a growth mindset, as it is a continuous process of mindful improvement evolving overtime by learning through experience.

People with a growth mindset have the belief that one's basic abilities can be developed through hard work, dedication, and perseverance (Abboud, 2017; Dweck, 2006; Derler, 2019; Dweck & Yeager, 2019). These authors all claim that when people acquire the qualities of a growth mindset, then they will grow beyond their current roles as they will always seek an opportunity to learn and improve from their mistakes instead of being derailed by it. Moreover, people who attain these qualities are adaptable and open to new challenges as the challenges are perceived as a natural part of the learning process. To be adaptable is the ability to change accordingly to the changing circumstances. Abboud (2017), provides an example of how people with these mindsets overcome challenges such that should they work in under-resourced or disadvantaged environments they will remain positive, as they have acquired skills of perseverance to achieve long-term goals. In fact, having a growth mindset enables one's intelligence or abilities to improve since one is unafraid to take risks to improve and value the effort to learn. This leads to one becoming resilient to setbacks as challenges are embraced. Subsequently, one will grow concurrently with inspiration from like-minded people (Dweck 2006; Dweck & Yeager, 2019).

Dweck's (2006), research substantiates that individual mindsets are crucial for learning success. Learning and personal improvement is viewed by growth mindsets as more important than looking smart or outperforming others. Effort is viewed as the key to mastery and for one's personal growth. A mistake is thus perceived as an opportunity to grow or improve. Harrison et al.'s (2021), research validates that when individuals acquire a growth mindset then they are more receptive to learning. In fact, when one acquires a 'growth mindset', it will lead to a lifelong learning process beyond academic learning as people with these traits will always push themselves outside of their comfort zones to grow (Dweck, 2006; Beere, 2016). For the best learning outcomes to be achieved, one will therefore need to focus and become aware of the way one thinks about oneself and respond to others.

On the contrary, an individual with a fixed mindset firmly believes that intelligence or abilities and traits are set in stone and so overlook their knowledge gaps (Abboud, 2017). If an individual has these fixed beliefs, they will most likely not try to change as effort is perceived as a sign of low ability that can potentially make them look 'dumb' if they perform poorly. In times of constant change, rigid or fixed thinking makes people vulnerable to mental (psychological) health concerns such as anxiety or stress (Waldeck et al., 2021). As a result, change can cause people to fall into a

threat response that will make them less likely to learn. Since the thinking is that there is not much that they can do to improve their abilities, they usually do not try very hard with anything. Abboud (2017), claims that people with these fixed mindsets will be fearful of making mistakes as they are fearful of being judged. As such, they will not be open to trying new challenges when the outcome is uncertain, as a mistake is perceived to them as failure.

People who lean more towards the fixed mindset belief constantly feel that they need to prove themselves, so they spend time documenting their skills or intelligence, instead of trying to develop it. Instead of focusing on their own growth, they worry more about what others think of them. As such, fixed mindsets feel threatened by negative feedback even if it is meant constructively (Beere, 2016). Although negative feedback in academic settings are often unavoidable, these setbacks can diminish motivation (Nagy et al., 2023). On the contrary, growth mindsets demonstrate different patterns of activation to fixed mindsets when they receive negative feedback on performance (Dweck, 2006; Beere, 2016; Abboud, 2017, Dweck & Yeager, 2019). Despite having the growth mindset, one may still experience fixed-mindset thoughts and emotions constantly. However, one chooses to perceive setbacks as part of the learning process as the experience does not determine one's intellectual abilities (Nagy et al., 2023). The growth mindset can be referred to as a flexible or adaptive mindset, as it is the practice of flexible thinking, being open-minded and optimistic. Acquiring a flexible mindset assists with the adaptation to change and engaging in new learning experiences whilst overcoming stressful situations.

2.2.2.1. Cultivating a Growth Mindset

The intention behind Dweck's (2006), growth mindset theory is not to categorise people but to understand the difference between the two mindsets – growth and fixed mindset. The theory implies that everyone has a combination of a growth and fixed mindset, evolving continuously according to one's experience. The author's research is leading people to recognise and become aware of one's own awareness on which continuum they are on in the present moment. When one becomes more aware of noticing one's habits and what one is attending to, it enables one to intentionally shift focus to move in the direction of growth. Language is important when cultivating a growth mindset by using positive self-talk, for instance including the word 'yet' in a sentence. Instead of saying 'I am unable to draw', one should rephrase their sentence with 'I am not able to draw yet'. Another example of positive self-talk and empowering oneself, one should rephrase the sentence 'I am not good at solving mathematical problems', to 'I am not good at solving mathematical problems yet'. Considering that when one is fixed in one's thinking there is little room for growth with these limiting or restrictive beliefs about intelligence and effort. As the

research led by Dweck (2006), substantiates that a growth mindset is a continuous internal process that one needs to intentionally work towards consciously or with mindfulness. The role of mindfulness contributes to the learners' holistic growth for educational purposes, as well as for social and emotional development (Langer, 2016; Saraff et al., 2020). In fact, research investigating brain plasticity reveals that when practicing mindfulness, it allows the brain to grow which is the premise of the growth mindset (Smalley & Winston, 2010).

In their useful research of evaluating existing growth mindset interventions in HEI settings, Cheng et al. (2021), claim that the social science and humanities fields are seeking low-cost growth mindset interventions. According to the authors' systematic review most past studies focused on texts, providing participants with information on mindsets information at the beginning of the intervention by reading publications or listening to TED Talks, watching video clips, or seminars are conducted. Except for one study that uses infographics to cultivate a growth mindset in HE. Cheng et al. (2021), suggest that the focus on videos or texts during the interventions entirely tend to overlook the potential of the relation between infographics and mindset interventions. Infographics warrants researchers attention as it can condense complex ideas and enhance learners' motivations and creativity in educational settings. To assess learners' mindset changes using Dweck's (2006), implicit theories of intelligence questionnaire to measure the extent to which intelligence is perceived as a malleable factor before and after an intervention is frequently used. Another study has proven by assessing the learners' mindset changes that mindfulness can improve learners' growth mindsets.

In their study, titled 'The Effect on Mindfulness on Self-concept, Self-esteem, and Growth Mindset: Evidence from Undergraduate Students', Saraff et al. (2020), tests the influence of mindfulness as a pedagogical intervention on the self-concept, self-esteem and the mindset of the learners' becoming growth directed. The self-concept is referred to as the perceptions learners' have of themselves and how this can influence one's actions or behaviours. This was a 12 sessions program of one hour either providing discussions of mindfulness and /or doing meditation exercises. In this study, Saraff et al. (2020), conducted Dweck's Intelligence questionnaire before and after their intervention, much the same as Cheng et al.'s. (2021), study. Saraff et al.'s (2020), study suggests mindfulness as a motivational tool to be adapted in one's daily life as a practice as it is an aid to deal with difficult phases that may occur in one's life. The findings from the study suggests that mindfulness influences one to become growth directed, as it encourages flexibility, motivation, emotional regulation, and attention. Mindfulness is also beneficial for one's overall wellbeing, reducing anxiety and stress. The authors advise that mindfulness is significant in group settings and that future practical guidelines for this practice can be established.

In Gregory's (2021), useful five-year quantitative study titled 'Mindset Predicting Mindfulness: Developing Professional Capacity', the relationship between mindset and mindfulness is studied to determine the development of the professional growth of educators. The instruments that are used for this study are Dweck's Intelligence Scale and Baer et al.'s (2006), Five Factor Mindfulness Questionnaire (FFMQ). The findings of this study are that mindfulness is the predicting factor to move one's mindset towards a growth orientation. Gregory (2021), concluded that the greater the lean towards a growth mindset correlates with higher scores on the mindfulness inventory. Since this study relied on the honesty of the educators' own thoughts and actions, there may be a possibility for the respondents reporting socially desirable answers instead of considering how they really feel. Even so, according to Gregory (2021), previous research on mindfulness theory constructed by Langer established positive outcomes at schools and changes in the educators' mindsets on Dweck's theory has proven to improve the outcome of learner's academic outcomes. As such, Gregory (2021), proposes that the meaning of Dweck's mindset theory should be recaptured by encouraging ongoing development of educator professional capacity by focusing on mindfulness and mindsets together. Research by Nagy et al. (2023), correlates with Gregory's (2021), research, suggesting that interventions focussing on mindfulness and growth mindset beliefs are consistent with supporting learner motivation in academic environments especially when negative feedback is perceived as a setback. Simple mindful attention practices can be introduced to learners, such as breathing exercises assisting to come into the present which will improve concentration levels as well as the memory as one will focus on one thing at a time. Induction interventions on growth mindset beliefs can be as simple as informing learners of how the brain works, how malleable the mind is by referring to intelligence and abilities as one's characteristics that can change through deliberate practices and beliefs. Gregory (2021), and Nagy et al.'s (2023), research therefore substantiates that the integration of mindful practices within a growth mindset intervention will be more constructive.

2.2.3. Mindful Awareness

Kabat-Zinn (2002), explains mindfulness, which I refer to in this study as mindful awareness, as an intentional state of conscious awareness in the present, developed through attention in a non-reactive and permissive way. Intention can be described as directing one's thoughts to perform a determined action. One's intention sets the scene for what unfolds moment to moment during a deliberate practice which corresponds for instance with the intention to being more attentive and active in learning a skill (Reid, 2011). The strength of one's intention can be explained as the degree of firmness or depth to hold one's focus and commitment to enact on one's intention. Strong intentions, according to Connor and Norman (2022), provide better predictions of one's behaviour

as it allows one to become more stable overtime. Intentions evolve and change according to the need and desire of one's goals when practicing mindfulness (Reid, 2011). Mindful Awareness refers to a form of awareness whereby one observes and pays attention to one's inner states, such as, thoughts or feelings, whilst being aware of what is happening outside the body in the world. By being aware of one's own awareness is being watchful of what is happening in the present moment. This infers, when in a state of awareness, one stops thinking about one's past and unknown future. So, mindful awareness is the act of fully attending to doing what one is doing with intentional awareness (Reid, 2011).

Many researchers (Kabat Zinn, 2022; Langer, 2016; Reid, 2011; Saraff et al., 2020; Gregory, 2021), agree that being mindful is about taking control of the mind by noticing what one attends to. Mindful Awareness is to maintain a moment-to-moment awareness of one's thoughts, feelings, bodily sensations, and the encompassing environment. Seeing that naturally, the mind is conflicting in nature. One moment the mind emits one thought, and the next thoughts may pop up on the complete opposite, making true clarity difficult from the surface of the mind. Without clarity or mindful awareness, one cannot be fully present which makes it easy to become distracted from the matter at hand (Kolb, 2015; Kabat Zinn, 2002; Langer, 2016). Clarity comes from the stillness of the mind when being mindfully aware. So, one's actions are referred to as mindless when one is fixed or rigid and on autopilot, with predetermined rules that limit one's approach to learning. By being mindless, one is functioning with habitual reactions and not watching the processes of thought and their effects on one's own behaviour. Mind wandering or mindlessness are habits of the mind running on autopilot during the absence of awareness. In mindlessness, one is less engaged in the world around us as one is not focussed on the present moment. Like any skill or ability, one can loosen the grip of habits, limiting, and fixed ways of thinking by developing one's mindful awareness through regular and purposeful practice (Kabat & Zinn, 2002; Langer, 2016). Langer (2016), confirms that the cultivation of mindful awareness can be experienced more directly without the participation of meditative or contemplative practices.

The practice of mindful awareness is learning to see and experience a situation as it is, by training oneself to see beyond the mental filters of thoughts or notions of life. Mindful awareness reveals a different way of seeing, knowing and being in the world. Research indicates that mindfulness reduces anxiety, stress, and depression, as it improves one's overall well-being, the executive function, emotional regulation, one's attention and memory (Kabat Zinn, 2002; Reid, 2011; Langer, 2016; Saraff et al., 2020; Gregory, 2021). Since the practice of mindful awareness involves learning to practice stillness and silence, it helps one to settle down the noise of over thinking of one's past and future. Kolb (2015), asserts that when one rehearses future and past events, it clutters the

mind causing fatigue which increases stress. The stabilising effects of the mind-body materialise as a feeling of aliveness through awareness in this state of reaching deeper stillness and inner silence. Through this mental training process, one will recognise the constant state of flux and change transpiring from one mental occurrence to another.

According to the Dalai Lama (2005), there is a direct link between mindful awareness and mindful attentional training that aligns to the process of learning to understand and control one's personal cognitive, emotional, and somatic processes. The cultivation of mindful awareness is grounded on a deliberate intention to focus one's attention to a specific aspect of an object. In doing so requires an ongoing reinforcement of attention to fine tune and sustain focus on the learning object (Langer, 2016). McNeil (2009), explains that energy flows where one's attention goes, so whatever occupies one's attentional field is where that person is in that moment. To sustain attention on one thing preserves one's mental energy and enhances one's focus. Contrasting to multitasking that splits one's attention causing mental fatigue. The process of attention is key to understanding what learning it is about and how it takes place. Posner and Rothbart (2007), describe attention as a discipline that must be practiced improving on as it influences one's cognitive and emotional processes. Personal attention can therefore be conditioned and trained through mindful awareness practices to enhance the ability of learning within any context. It is also important to develop focussed attention with the ability to self-regulate inner experiences, sensations, and emotional intelligence. Prioritising to push oneself to turn off all distractions and the noise in one's mind by focusing on the work at hand will deepen one's concentration only on that task. When one becomes distracted by thoughts or external noise, the distractions must be acknowledged for what it is, and the mind must be redirected to what one is attending to in the present moment for concentration to improve (Langer, 2016).

When people are intentionally attentive, they are being purposeful as this process requires goal setting. This process makes people purposely open to new information. As with all resources, attention is limited individually as it is an internal resource that is being harnessed and improved through deliberate practice. Mindful awareness creates a way to leverage attention in an efficient manner, overcoming the state of mindlessness that disrupts one from purposefully directing one's mind to objects that may be overlooked in a mindless state (Kabat-Zinn, 2002; Langer, 2016). When one learns the practice of being mindfully aware, the executive circuits of the brain responsible for calmness, relaxed response, attention, regulating emotions, being insightful, being flexible and empathetic in immediate responses, as well as improvement in cognitive abilities are activated and strengthened. This state of mindful awareness assists with decluttering and clearing one's mind resulting in improving one's memory (Smally & Winston, 2010).

2.2.3.1. Mindful Learning

‘Mindful learning’ is described by Langer (2016), as:

- being open to uncertainty and novelty by experiencing information in a new way,
- being sensitised and attend to different contexts, and how different experiences as well as networks of information are connected to create new knowledge and understanding,
- being actively present in the moment of observation, listening, or in hands-on active engagements,
- viewing ideas from different perspectives and expanding learners creative as well as critical thinking abilities to produce innovative possibilities, and
- drawing from these distinctions new classifications and combining different perspectives that will lead to new insights.

So, to become mindful in one’s learning is to learn how to focus can be referred to as mindful learning. To be mindful is to pay attention in the present moment, to one’s thinking, one’s behaviour to be able to shift one’s perspective and mind when required (Langer, 2016). Mindful awareness is to clear one’s thinking from any distractions caused by internal factors or external factors, by acknowledging these factors then redirecting one’s mind intentionally to the present moment (Kabat-Zinn, 2002). If an anxious mind pops up, one can get rid of it through focusing on one’s breathing to clear the mind. When one is flexible in one’s thinking by being able to shift and change one’s mindset, it improves one’s intention to become a better learner as there is so much to learn so this process helps one to learn. Langer (2016), substantiates that the real educational potential of mindful learning is in shifting mind-sets to become aware of the actual educational challenges. The mindful learner will therefore acquire an awareness with an adaptive mindset through actively engaging in the present moment of learning, by noticing new insights and connections for application in different contexts (Langer, 2016).

2.2.4. Adult Learning Principles

Adult education, according to UNESCO (2023), is education that is specifically directed to people who are viewed as adults by the populace to which they belong. The focus of education is intended to either improve the adults’ professional or technical qualifications, to enrich or acquire knowledge for a specific purpose whether it is for formal, informal or for the development of skills. During the 1920’s, the Adult Education field became prominent as a professional field of practice with its own knowledge base that is composed of speculative theories, principles, and descriptions

as to how adults learn. An approach from behavioural psychologists, Knowles et al., (2014), was used for the research inquiry in relation to how adults learn.

The adult learning theories, principles, and assumptions such as experiential learning, are challenging for educators to extend their roles from subject-content management to a wider set of skills, competencies, approaches, tools, and methods to continuously cultivate and engage with (Knowles et al., 2014). According to Knowles et al. (2014), the characteristics of adult learners are assumed as being self-regulating. The authors' assumptions are that adults take responsibility for their own actions, with an intention and readiness to be actively engaged in the learning process. Adult learners as the authors assume are mostly motivated to learn when they have a need to know and experience the results of their efforts. As such, adults are selective in learning content that is useful and meaningful in dealing with challenges or circumstances that are relevant in their daily lives and work.

Knowles et al. (2014), advise that learning from work and actual real-life or hands-on experiences is necessary, as it enables adults to apply their learning to solve specific problems. The learning process is so much different from teaching as such that one needs to understand how the brain works for the learning process to be effective and how one can help the brain to learn better. The most effective learning occurs when the classroom environment includes factors of mutual respect, immediacy, safety, relevance, and engagement (Knowles, et al., 2014). These fundamental adult learning assumptions form the basis from which to guide the adult educators learning process when designing teaching-and-learning programs to teach and facilitate adult learners. Knowles et al. (2014), propose that immediacy is required for the subject content since the assumption is that adults learn best from what is meaningful to them. This learning process aligns to Jensen's (2005), research that the natural brain processing functions that search for relationships, meaning, as well as patterns that are constructed on prior knowledge and experience.

Knowles et al. (2014), challenge the widely held view that adults tend to resist information arbitrarily imposed on them. As a result, the scholars recommend that the learner contract, and Learner Needs Assessments should be designed to inform the learning required. The scholars further suggest that the learning or training needs assessment consists of a questionnaire drawn up for learners to identify their reasons for the course work and their goals in attending the course. This will allow the educator or facilitator to design their teaching-and-learning approach according to the needs of the learner, as proposed by Knowles et al. (2014). Subsequently, adult learners will learn to identify their learning needs, set their personal and professional goals, as well as stipulate

their best way to learn in the given context. So, when a course is introduced to the learners then the educator must be explicit on the purpose of the specific activities, the learning process, and the learning outcomes to provide clarity to the learners. Dweck and Yeager (2019), suggest that the process of adult learners being able to identify their own strengths and weaknesses will orient the learning process to be effective. Naturally, adult learners will learn how to evaluate skills and learning performances (Knowles et al., 2014). According to Bersin (2004), the experiential way of learning is the best way for adults to learn. Experiential learning produces better results than memorisation, as it involves a hands-on active participation and a reflective process enabling learners to make sense of their own experiences. Learning therefore only takes place when one actively reflects on the experience.

2.2.5. Reflection

Matthew et al. (2017), describe reflection as a process of thinking about something deliberately to assess a specific situation. Rodgers (2002), further describes Dewey's view of reflection as a systematic thinking process that one acquires through practice and experience. This means that the reflective thinking process is a deliberate practice as one reflects for a specific purpose to either change or improve a learning process. Reflective thinking is also an active practice as it requires a conscious effort to think about events and to develop insights into it. An awareness is therefore required during the reflective thinking process as it necessitates a sustained focus and an intentional effort to direct one's mind in a specific direction to obtain answers during the internal dialogue with oneself (Rodgers, 2002). Basically, this process of awareness to promote reflection indicates that reflective thinking can purely only happen when one settles one's mental filters. In doing so, it enables a stillness from within which leads to a harmonious state of mind, creating a space for one to think with clarity to make sense of what was learnt (Rodgers, 2002). Matthew et al. (2017), elaborate on Dewey's reflective process, explaining that reflection is about linking and synthesising learning into more integrated, extensive, and unified, internalised, and personalised ways. The authors affirm that through the process of reflection one observes the learning process to understand it. Consequently, the starting point of reflection is to first make an intention, thereafter, settling one's mind to bring one's focus to the learning topic (Matthew et al., 2017). Dewey (in Rodgers, 2002) and Matthew et al. (2017), advocate that the reflective thinking process should be referred to as a skill that one develops through deliberate ongoing practice. The authors' theories suggest that through the action of reflective learning, one will always change when interacting with the environment. The process of reflection can be understood as a practice that encompasses a disciplined way of thinking, an internal dialogue, and an internal questioning process with oneself about the learning topic at hand.

Reflection closely correlates to the concept of learning from experience. This refers to an individual's thinking process about what was done and what has transpired, then from these experiences a decision is made on what should be done differently to improve the learning process. Through the process of reflection, Moon (2004), suggests that through and from firsthand experience adult learners will be able to view issues from different perspectives and gain new insights. The learners will thus be able to challenge assumptions as well as established patterns of behaviour, whilst encouraging the development of new ways of seeing. Bolton (2010), and Brookfield (2017), affirm that reflection is about how each part of the learning process has been captured and understood. The authors further explain that by directing learners to make sense of what they have learned and the reason as to why the topic is being learned, deepens the learning process. Bolton (2010), therefore acknowledges reflection as an important component for adjusting the learning experience and measuring the learning outcomes. Reflection is an effective practice to intentionally engage in a process of continuous learning.

Matthew et al., (2017) and Rodgers (2002), encourage reflective practice to be integrated into educator and adult learner learning process as it has been identified as a key component for professional and personal development. The authors propose that the integration of reflective practices should encompass the integration of activities into people's daily lives to make meaning of their experiences. Abboud (2017), suggests that mindful awareness through reflection, consists of actions to be taken to cultivate a growth mindset. So, attentional training, reflective practices and mindful awareness are all skills required for the mindful learning process to occur and for one to become aware to shift one's mind to the natural state of being growth directed.

Conclusion: Preparing for Tomorrow, Today

It is known that there has been a slow uptake of ICTs at HEIs in South Africa. In addition, there has also been an increase in distractions as the pandemic has caused psychological imbalances which is added to educator stresses. Even so, blended learning is promoted in literature as the best approach to teaching and learning at HEIs. Blended learning is the blending of different modes of teaching and learning processes and the integration of ICTs to improve the learning process. BL is basically an extension of the educator skills and the BL process selected is dependent on the context. The literature proposes that professional development is key to the adaptation to a blended learning process. However, there is no indication that the face-to-face instructional mode at HEIs has been considered as a habit that has been formed over several years that requires a deliberate practice to shift habits of thinking and behaviour.

The cultivation of a growth mindset is therefore promoted to support educators to the adaptation from a face-to-face teaching and learning approach to a blended learning process. The Growth mindset is the belief that one can choose to change one's abilities and habits through deliberate practice and effort. The draft principles in the literature identify individuals as having a growth mindset when one acquires the inner resources and skills of being reflective, psychologically flexible, and in a state of mindful awareness. To practice reflection, mindful learning and mindful attention requires purposeful intention, and to practice intention requires an awareness. To realise that one is in a growth mindset or in a flexible way of thinking requires mindful awareness so that one can redirect one's mind when required. The adult learning insights with the experiential learning process is integral in the development of this design-based research study.

CHAPTER 3

The Methodology and Research Design

Chapter 3 discusses the methodology that was adopted for this study. This chapter also justifies the chosen research approach to investigate and carry out the inquiry. The chapter further describes design-based research (DBR) as the approach to address this study's research questions. It also includes the positionality of the researcher in the context of this study.

This chapter includes the worldview in terms of design, referring to the basic set of beliefs that guide and influence the practice of the study (Creswell, 2007). This study takes on an interpretivist qualitative worldview. The interpretivist worldview according to Creswell (2007), enables the researcher to view the world through the participants' perceptions, perspectives, and experiences. This qualitative interpretivist study therefore focuses on understanding and interpreting the subjective meaning of participants' experiences. This involves generating theory that are grounded in the data itself. How I am dealing with the knowledge is interpreting what participants know and what they do not know. During the global health crisis, the true nature of the digitalisation and blended learning phenomena constituted the ontology that was genuinely real. In dealing with the reality of this phenomena, the researcher intends to interpret and understand its significance.

A design-based research (or educational design research) approach was adopted for this study. Both Collins (1990), and Brown's (1992), belief is that the nature of traditional educational research often encounters challenges in translating the findings to improve classroom practices. These challenges arise from two challenges; that is, the research results are either incorrect or vague as it does not account for context, and the research process is detached from practice as it is conducted in controlled and laboratory-like learning environments. In contrast to this belief, many researchers (Collins, 1990; Brown, 1992; Wang, 2005; Reeves, 2006; Herrington et al., 2007), advocate that when using the design-based research approach, the known learning theories are implemented in authentic learning environments. Design-based research is an interventionist research approach that focuses on the design, implementation, and refinement of innovative solutions in real educational settings. Unlike the traditional educational research, which often separates the design and implementation phases (Reeves, 2006; Herrington et al., 2007). Design-based research is further described as a holistic approach as researchers and practitioners in the field of education technology use this approach to understand education or the learning process, as well as try to find ways to improve the real-world educational problem in its proper context. It is focused on the design to create a balance between the psychological and educational research

objectives. This balance is to achieve usable knowledge about online learning environments for practitioners to benefit from the researchers' work (Herrington et al., 2007). DBR therefore raises significant research questions of how interventions can truly benefit and address educational challenges.

3.1. Research Questions

The main research question for this study that is being addressed is: *In what ways can the cultivation of a growth mindset address the phenomenon of adaptation to a blended learning (BL) experiential process?*

The main question is divided into the following sub-questions, which are guided by Kolb's Cycle of Experiential Framework (Kolb, 1984):

1. *How do Higher Education Lecturers make sense of the blended learning (BL) experience?*
2. *How do Higher Education Lecturers make sense of their adaptation to change to a blended learning process?*
3. *How do participants perceive the prerequisite concepts required in an intervention that could promote a growth mindset to adapt to a blended learning (BL) experiential process?*

3.2. Research Method: Design-Based Research (DBR)

Design-based research according to several scholars (Herrington et al., 2007; Reeves, 2006; McKenney & Reeves, 2019), is an interventionist approach that closes the gap between theory and practice. Herrington et al., (2007), affirms that the value of this research approach, is that DBR is grounded in theory and yields knowledge or guidelines that can be used by other practitioners to improve educational practice. This means that theoretical research is combined with practice to strengthen the link between research in education and authentic problems. DBR is frequently linked with doing research in the context of technology enhanced learning (TEL). As such, the design of an intervention using DBR to find practical solutions on how to support educators with the transitioning process from the didactic way of teaching to the adaptation of a BL environment seem relevant as being an educational challenge. Considering the challenge of the slow uptake of ICTs at SA HEIs over several years (Ng'ambi et al 2016), and the recent effects of the pandemic.

Authentic problems such as the adaptation to blended learning are an acute example of a complex educational challenge. 'A Design-Based Metacognitive Intervention Plan for Mindful Blended

Learning in University Education of South Africa' is therefore implemented in real-time in an authentic natural environment. According to the 'Cambridge University Press & Assessment' (2023), real-time refers to the actual time during which the event occurs or unfolds. Considering that all participants physically reside in different locations, the researcher closed the distance gap by integrating an online intervention. The Zoom online collaborative tool was accessible to all participants and was thus selected as the authentic learning environment for this intervention. The synchronous blended learning environment was designed as the authentic natural learning environment. This refers to the mode of the education where the learners and educator engage in real-time interaction typically using internet-based communication tools (Nyamapfene, 2017). Such as, the Zoom platform that is being used as the learning environment in the context of this study.

An authentic natural learning environment within the DBR is described as a real-world educational setting that is created in the context of how and where meaningful learning takes place to meet the students' learning needs. It is a setting where learning is based on incorporating real-world experiences with authentic tasks for a deeper understanding of the subject matter (Kolb, 1984). The authentic natural learning environment is further characterised as a flexible, reflective, and collaborative learning space that engages the students with authentic activities that are relevant to their lives in the natural learning environment. According to Bozalek and Ng'ambi (2015), meaningful learning takes place when students' prior knowledge and competencies are considered. So, it is imperative to select ICTs that would be suitable to engage students during the learning process. In addition, a fundamental principle of DBR according to various scholars (Reeves, 2006; Herrington et al., 2007; Kennedy-Clark, 2013), is to integrate known and hypothetical design principles with technological advances to render solutions that are plausible.

The design-based research approach signifies high-quality research used in education, as it yields interventions and usable knowledge constructed from vigorous evidence and logical reasoning (McKenney & Reeves, 2019). Interventions in educational settings are described by Lazowski and Hulleman (2016:606), as "a manipulation implemented by an external agent (such as a teacher or researcher) intended to change students' cognitions, emotions, or behaviors". Interventions can be inferred as proactive and intentional actions taken by educational personnel to support struggling students to overcome obstacles that prevent them from acquiring the skills taught by the educational system. The intervention methods must be adjusted according to the students' specific learning needs as many factors may affect the learning process, including their beliefs (Black & Allen, 2020). In DBR, many researchers (McKenney & Reeves, 2012; Shattuck & Anderson, 2013), describe the term intervention as the activity, object, or process that is designed

collaboratively, implemented, and evaluated as a possible solution to address an identified phenomenon or research question. The design of the intervention is with the intention to produce a certain outcome or to change a situation. Examples of design-based research interventions can be in the form of a learning activity, an assessment of some sort, an introduction to an administrative activity (Anderson & Shattuck, 2012), textbook, a policy, workshop, a presentation, or an instructional program (Shah et al., 2015). The design of an intervention encompasses designing and developing a set of strategies based on existing theories and frameworks, tested design principles as well as prior research (Herrington et al., 2007; Reeves, 2006; McKinney & Reeves, 2019). Such strategies involve the use of artefacts and tools.

The tools in DBR refer to a variety of instruments, methods, behaviours, or technological software that is designed and developed by the researcher to address and probe into the phenomenon of study. These research tools are used to collect the data that facilitates the research process and support the research objective. After the data collection process, the data is analysed and then interpreted (Herrington et al., 2007). Examples of the research tools are protocols, observations, focus groups, questionnaires, assessment rubrics, surveys, interviews, and semi-structured interviews. Whereas artefact(s) in DBR refer to products or practical outputs of the research process. The researcher can develop the products alone as an alternative to the products being designed by other programmers and resource specialists. These artefacts used in DBR are considered when designing and implementing the intervention. There are two types of artefacts that exist in DBR; that is intangible and tangible design artefacts (Herrington et al., 2007). The intangible design artefacts refer to the concepts, ideas and theories that are used during the research process. Some examples of these are the conceptual frameworks, the design principles, the design patterns which constitute the reusable solutions for frequent design problems, and the hypotheses that help to guide the data collection process and analysis in DBR. The tangible design artefacts refer to the physical or digital objects (Herrington et al., 2007). Examples of the tangible design artefacts used in DBR are diaries, journals, wireframes, storyboards, videos or YouTube videos, mock-ups, professional development programs or workshops, visual tools such as infographics, PowerPoint presentations, and interactive tools such as Learning Management Systems (LMS) or the Zoom collaborative online Tool.

The purpose of the DBR approach is to improve theories that already exist or to develop new theories that can support and lead to a deepened understanding of learning. It is also to develop, evaluate and refine the design of curricula, tools, and artefacts (Kennedy-Clark, 2013). DBR encompasses iterations, reflective inquiry, and it is a systematic process to re-define the problems, possible solutions and the draft principles that may address the phenomenon. This means that

there is reflection taking place at all steps of DBR. So, if there are changes made, the researcher should ensure consistency throughout the entire study. DBR is a rigorous and collaborative approach, in the sense that it relies on the expertise and collaborative work amongst the researcher and practitioners from multidisciplinary backgrounds that are relevant to the field that is being researched to improve the quality of the research. The contribution of the DBR approach is therefore beyond perfecting a particular product (Reeves, 2006; Herrington et al., 2007; Kennedy-Clark, 2013; Makhoalibe, 2017; McKinney & Reeves, 2019). According to Collins (1990), the approach is about inquiring more into the nature of learning in a complex system of persistent problems to refine generative or predictive theories of learning.

The DBR approach is flexible (Reeves, 2006; Herrington et al., 2007). The researcher is perceived as a change agent and can therefore take on multiple roles during the research; such as instructional and learning designer, curriculum designer, researcher, participant, and facilitator. The researcher and practitioners establish a partnership within DBR by working closely to collaborate on solutions to establish a needs and context analysis during their exploration of the phenomenon of interest. In DBR, it is essential for the positionality of the researcher to be disclosed in the context of the study, for readers to be aware of possible preconceptions that may have been brought to the study.

DBR consists of four phases as illustrated in Figure 2 below by Reeves (2006). Each of the four phases is dependent on the outcome of the previous one. The outcome of the data collection and analysis of each phase will inform the process in the phases that follow:

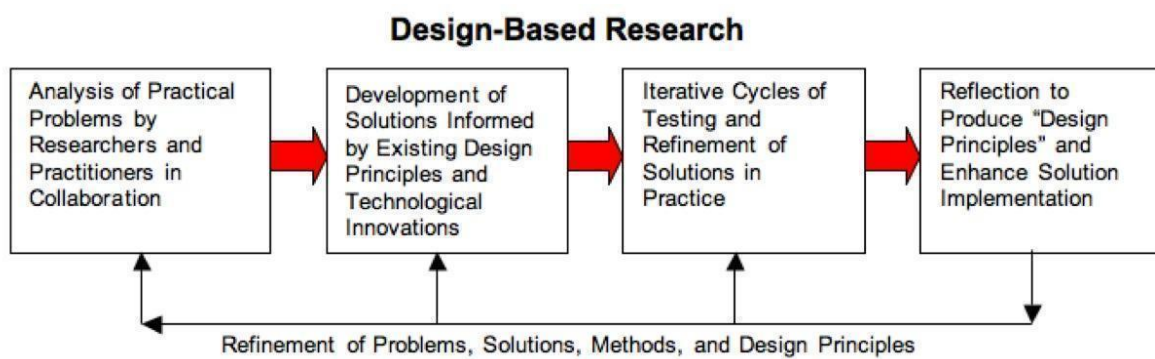


Fig 2: Reeves (2006).

3.2.1. Phase 1

During the initial stage of the phase 1 data collection process, the literature is consulted to explore the research phenomenon to see how others dealt with a similar challenge. In relation to this, a needs and context analysis are undertaken (Reeves, 2006; Kennedy-Clark, 2013). The DBR approach places much value on the contribution of practitioners and researchers alike, either working in the field of the problem area or investigating the problem of interest. Thus, the research phenomenon is explored through the collaboration and engagement with other practitioners in the field. Participants can be selected from multi-disciplinary backgrounds but should also be selected on the criteria of being relevant to the field of study so that their contribution to the study will be useful and beneficial. This is to either establish a needs analysis for the development of the intervention or to establish how the response of practitioners correspond to the data collected from the literature (Reeves, 2006; Herrington et al., 2007; McKinny & Reeves, 2019). This data collection process can be accomplished by means of a focus group or using an interview process.

3.2.2. Phase 2

The development and design of possible solutions in the form of an intervention is discussed during phase 2. Existing draft principles are retrieved from the literature as assumptions to inform possible solutions to assist with the design of the intervention. So, the key concepts from the literature are elaborated on during this phase to yield deeper understanding on the study and the conceptualisation process. The selected conceptual framework that guides the process of the intervention and the activities is introduced in this section (Reeves, 2006; Herrington et al., 2007). Kolb's (1984) cycle of the experiential learning framework is adopted in this study as a useful guide in the conceptualisation and analysis process.

3.2.3. Phase 3

The intervention is implemented during phase 3. The same participants as in Phase 1 can be used for the intervention or different participants can be used during this implementation process. Usually there are several iterations implemented. However, due to time constraints of the minor dissertation there will only be one iteration to test the intervention. The iterations are used to gain theoretical and practical insights of interventions. Each iteration is reflected upon to improve and refine the iteration that follows. The same participants can be used for all the iterations or different participants can be used during different iterations.

3.2.4. Phase 4

In phase 4 of DBR, the researcher reflects on the intervention to assess the outcome. If the intervention has not failed then the outcome of the intervention will produce potential outputs that are generated in the form of knowledge and products (Herrington et al., 2007). During this reflective and final analysis stage of DBR the researcher is contrasting and comparing how the participants who undertook the intervention respond in terms of what is implied by the literature. There are key principles (sometimes called elements) generated by participants during the intervention, then it is refined using the conceptual learning theory to have a theoretical understanding of the final product. The final product (or scientific output) referred to as the design principle is the knowledge claim of DBR. The design principles are made credible if the principles align to the learning theory. The design principles according to Reeves (2006), and Herrington et al. (2007), can be used to inform or improve educational practices in future or further research can be conducted.

The intervention may also generate a practical output referred to as artefact(s). These artefact(s) were designed to guide the successful implementation of the research as the product of the design. Furthermore, the professional development of all involved during the DBR collaborative and research process will be enhanced. The collaborative process is fundamental to describe and accomplish the process of the DBR intervention (Herrington et al., 2007). The professional development of the researcher is also an additional benefit referred to as the societal output.

3.3. The Researcher's Positionality

The researcher's positionality as an adult learner within the educational technology field and female academic administrative staff member at a South African HEI, researcher, collaborator, and project administrator for the Open Educational Resources of indigenous Games in Africa (OERiGA) project is deeply influenced by a multi-faceted journey. Since her early years as a mathematics tutor, where she customised lessons to meet individual learners' needs and incorporated creative exercises like "brain gym" (applications of applied kinesiology) to improve their retention levels and to promote mindful awareness, calmness, and focus, she has nurtured a holistic approach to education.

The researcher's involvement with an institution in Cape Town as a previous employee where she facilitated and reinforced individuals facing various intellectual disabilities and physical challenges, including autism spectrum disorder (ASM), the value of independence and resilience by becoming more aware of their abilities through group activities. Coaching at a different Learning Institution during 2015 further enriched her experiences, exposing her to a variety of accelerated learning

methods to enhance learning in fields ranging from mathematics, accounting to entrepreneurship, career coaching and ‘learning how to learn’.

In her professional endeavours, the researcher consistently embraced an experimental approach to learning, fostering a unique perspective, asking pertinent questions, and refining her skills through trial and error. She actively sought staff training opportunities, to continually enhance her skill set and integrate new knowledge into her work.

Dealing with diverse working cultures and mindsets are challenging in any workplace. By navigating through the intricacies of workplace dynamics has honed the researcher’s ability to manage the stressors whilst getting things done in the best way possible. This has been instrumental in developing qualities such as a strong sense of focus, calm-alertness, resilience, empathy, compassion, and patience in managing the workload as it requires deep learning, especially when confronted with challenges related to power dynamics and control.

In summary, the researcher’s positionality is a rich tapestry of experiences, emphasizing adaptability, continuous learning, and an unwavering commitment to growth, both personally and professionally.

3.4. Description of the Study Participants

According to Reeves (2006), design-based research is not an activity that a researcher can conduct in isolation from practice. In education, the participant is therefore central to the investigation of the study when using the qualitative research methodology. They are considered as collaborators as well as contributors to the study. The choice of participants relates to the purpose of the study. In DBR qualitative studies. These participants are individuals who reflect the characteristics or are influenced by the problems being considered during the research process (Herrington et al., 2007). The participants in this study consisted of 5 postgraduate students. Two participants collaborated with the researcher during phase 1 by exploring the phenomenon of adaptation to the blended learning environment. Four participants participated during the implementation of the workshop in phase 3, which included one of the participants who participated during the initial first phase.

All the participants are researchers in the field of blended learning, employed as lecturers, learning designers and trainers at Higher Educational Institutions in Africa. This selection criteria for the participants were ideal, since the researcher assumed that they could provide more insights during the study, from their experience as adult learners as well as practitioners. The participants consisted of males and females. The participants were located within Africa and South Africa, but none of them were in proximity from each other.

3.5. Research Design and Data Collection

The data collection process involves a qualitative research methodology. Makhoalibe (2017), asserts that qualitative research methods are often used in research to obtain a deeper understanding of human behaviour or the motivations that influence human behaviour. The interviews and the intervention were audiotaped and transcribed for the data collection process to ensure accuracy. This data collection process allowed the researcher to focus on the interview and intervention without distractions.

A semi-structured interview was conducted with two participants separately to explore how educators make sense of blended learning and to explore the phenomenon of the adaptation to the blended during phase 1. The pre-interview questions are available in [Appendix 1](#). The duration of each interview was approximately 30 minutes. The outcome of these interviews, existing draft principles and Kolb's (1984) cycle of the experiential learning framework guided the design of the intervention. The intervention was designed during phase 2 – 'A Design-Based Metacognitive Intervention Plan for Mindful Blended Learning in University Education of South Africa'. This intervention plan was informed by a set of assumptions retrieved from literature. According to the literature, developing mindful awareness and fostering reflection is associated with the cultivation of a growth mindset (Abboud, 2017). The intervention was a workshop that was conducted with four participants for approximately 90 minutes. To encourage participation, participants had to indicate their availability on an online poll.

An online synchronous platform was used for the workshop, as the researcher aimed to recruit participants from a diverse pool who were not physically located within proximity nor in the same province. A blended learning approach was used for the workshop as it is a flexible approach. The workshop included the concepts of blended learning, growth mindset, mindful awareness, mindful learning, and reflection, guided by the adult learning principles of Knowles et al., (2014), and Kolb's (1984), cycle of the experiential learning theory. Immediately thereafter, the post evaluation questionnaire ([Appendix 2](#)) was presented as a focus group session with the 4 participants who participated in the workshop. The focus group session lasted for approximately 15 minutes and formed part of phase 3 of the study.

3.5.1. Data Presentation of the Workshop Design & Implementation

Design of the Workshop

Title: 'A Design-Based Metacognitive Intervention Plan for Mindful Blended Learning in University Education of South Africa'.

Duration: 90 minutes

Facilitator: Fahiem Titus

Platform: Zoom collaborative tool

Participants: All participants are postgraduate students and are employees at HEIs either in SA or Africa - Lecturers, Trainers of educators at schools and of Lecturers, Researchers in Online and Blended learning, Educational Technologists, Instructional and Learning Designers

Learning Environment: Synchronous Online Blended Learning Environment

Workshop Goals and Objectives:

- **The overarching Goal:** To acquire design principles that will lead to the cultivation of growth mindset which will empower and support educators to adapt to the blended learning process.
- **Learning Objectives and achievements by the end of workshop were outlined as follows:**
 - To understand the fundamentals of DBR as a research approach, identify the benefits of using DBR, and experiencing how an educational phenomenon is addressed using the DBR approach in an Authentic Contextualised Blended Learning Application.
 - The workshop illustrates blended learning is not only about computer generated technologies but includes mental, kinaesthetic, perceptual and vibrational aspects of human engagement in alternative learning and teaching methodologies.
 - To identify and select applicable ICTs supporting and enhancing the potential learning process and outcomes.
 - Educators are enabled to shift roles from didactic teaching to the contextual facilitation of learning as required. This contributes to the personal touch in the blended learning environment by allowing learners to access their personal awareness, self-direction and preparedness to engage in relevant training practices to enhance their personal capacity.
 - To explore the growth mindset concept; the why and how to achieve and maintain this state of mind. To express the relevance of a growth mindset concept in

relation to self-regulation in the context of blended learning to collaboratively establish preliminary design principles.

- The design principles lead to identifying the immense inner resources we have as learners and teachers through systematic training practices that may harness our enthusiasm, curiosity, and critical, clear-thinking abilities to sustain a growth-directed mindset. These inner resources allow mindful learning to unfold with different perspectives in embracing change, an openness to adapt to new learning, understandings, and experiences. The learners learn to regulate their mind, thoughts, feelings or reactions towards a healthier present moment awareness; demonstrating its usefulness in managing most stress or distressed states of fear, anxiety driven situations.
- The intention of the training practices is to acquire competencies in engaging these states of mindful awareness, developing psychological flexibility, and improving reflective and attentional abilities. Foundational to acquiring these abilities requires the quieting, silencing and clearing the mind from the internal mental chatters, distractions and over stimulation of our senses which can with consistent practice lead to:
 - Improved focused and attentional abilities
 - Calmer mind and release of bodily tensions
 - the improvement of the working memory,
 - improving one's powers of intentionality through ongoing practice to align to the desired outcomes of what one wants to achieve.
 - develop the internal visual and creative imagination faculties to ultimately improve the learning process.

Information and Communication Technologies (ICTs) Resources Required:

- ICT tools enable the content delivery and contextual engagement of the workshop and activities taking place online.
 - Researcher used a laptop with Wi-Fi connection.
 - All participants used their own laptops or smartphones and Wi-Fi to participate in the intervention. These devices were used to avoid interruption caused by loadshedding schedules. Zoom application are readily uploaded onto their devices.
- Zoom was selected as the online learning platform for the workshop and interviews. All participants are familiar with using this software programme and have access to it.

- Audio recording and chat features enabled in Zoom.
- Enables the researcher to use a blend of sound, visual material such as infographics, and the integration of other ICTs such as YouTube videos to draw students' attention and to incorporate the different learning styles.
- Enabler for the experiential learning cycle to occur.
- Presentation slides:
 - MS PowerPoint is the main presentation tool used for information sharing and integration of other ICT tools on the slides. Participants are familiar with this tool, so the researcher wanted to illustrate software tools can be utilised in a blended learning environment to meet learning objectives.
 - Tool selected as an enabler for *concrete experience (CE)* as real-world examples are showcased, and vivid visual representations to enable participants to relate to the topic being discussed or presented with the practical insights being gained.
 - Tool selected as an enabler for *abstract conceptualisation (AC)* as the information, concepts and frameworks presented and displayed on the presentation slides are structured to explain all abstract ideas related to the workshop goal and objectives.
 - Tool selected as an enabler for *reflective observation (RO)* – after the topic content and concepts are presented, the participants are either facilitated to engage in reflective observation through for example:
 1. Asking of questions to reflect on their personal experiences, to reflect on what was presented or displayed or on the activities.
 2. Interactive Discussions.
 3. During the active experimentation activities (hand-on exercises) that are displayed on the slides with infographics and steps to doing the activity, demonstrated, and facilitated whilst observing themselves.
 4. Reflecting on their experiences after participating in the exercises.
 5. Brainstorming session after the workshop during the post-evaluation questionnaire focus group session with questions displayed on the slide.
 - Tool used as an enabler for *active experimentation (AE)* to occur:
 1. Group exercises incorporated on slides to guide participants in hands-on activities.

- Two YouTube videos with sound, graphics, and text:
 1. Blended learning video briefly explaining the concept and its benefits.
 2. Growth mindset video briefly explaining the concept, its benefits and how it is interwoven with mindful awareness.
- Infographics retrieved from the book titled, 'How to Concentrate Like Einstein' by Remy Roulier (2012):
 1. Integrated for the active participation, illustration, and facilitation of examples of exercises that can be integrated as daily practices to improve one's attention.

Workshop Design Outline in Alignment with Kolb's (1984) Experiential Learning Theory (KELT):

1. **Introduction (CE)**
 - Welcome and thanking participants for their participation and introducing the facilitator.
 - Activating the presence mode.
 - Present a concise overview of the workshop agenda on the PowerPoint slide. Then briefly explain the agenda, objectives, and expectations.
 - Participants were briefly re-introduced to the brain's function during the learning process according to neuroscience research. So, the facilitator will therefore pause for a few moments in-between different concepts and activities to allow time for participants to absorb what was being learnt and to avoid distracting of the attention. Thereafter, the facilitator will remind participants of the next activity or concept that will be addressed to deliberately shift their intention and attention to what is presently being attended to.
 - Addressed ethical considerations related to participant consent, participation, data handling, and confidentiality for participants to feel a sense of security.

2. **Session 1: Understanding the Design-Based Research Approach, Adult Learning Principles, Kolb's (1984) Experiential Learning Cycle and Research Phenomena**
 - A brief overview of the DBR were presented (AB & CE).
 - It was explained that DBR can take on the form of multiple research methodologies, such as mixed methods approach, quantitative or qualitative inquiry methods.

- Due to time constraints of the minor dissertation the researcher selected one research approach, the qualitative research method for data collection. The qualitative methods address the why and how research questions. The data being collected is based on the participant experience. The researcher seeks an in-depth understanding of the research study regarding the self-regulatory concepts which may lead to the development of a growth mindset. As this may support educators to adapt to a blended learning process underpinned by Kolb's experiential learning theory (1984). The self-regulatory concepts (mindful awareness, reflective practices, observation, perception, focussed attention) are studied in light of the participative experiences and perspectives on the workshop as the potential solution to the research phenomenon.
- The reasons for selecting this study:
 - a brief overview of the researcher background provided,
 - how the researcher's background experience fits into the research interests and how these experiences contribute to the study.
- Which adult learning principles and approaches are used for the workshop, why and how these are implemented into the workshop.
- By Linking the DBR with this research study and intervention, the DBR approach was put into context as to:
 - How the researcher approached the study using this methodology -
 - a concise explanation related to the draft principles extracted to guide the implementation of the workshop as solution.
 - Participants were informed of their relevance to the project – selected as valuable collaborators and co-researchers to assist with the establishment of the design principles.
 - The factors influencing decision-making on the selection of instruments for data collection. The artifacts and tools to be used and how it will be used for both data collection and training workshop delivery.
 - The implementation of the workshop design and activities based on Kolb's experiential learning theory (KELT). A brief overview of the theory was provided as well.
 - Analysis takes places through all phases of DBR to refine processes of the study and KELT provides the framework for the final data, and interpretive thematic analysis.

2.1. Discussion (RO & AE)

- Facilitator opened the question and answer, as well as discussion session by asking participants if they had any questions, require clarity for any of the information provided or if they have any comments, information, or objections they would like to share.
- A new understanding of DBR then arose amongst some participants.

3. Session 2: Engaging with Blended Learning (AC & CE)

- A YouTube video of a brief introduction to the BL concept was displayed.

3.1. Discussion (RO & AE)

- Group discussions on different views of BL were expressed.
- Researcher discussed the BL according to literature and the context of the workshop for participants to experience the synchronous online BL environment.

4. Session 3: Growth Mindset (KELT Cycle)

- A brief Growth Mindset YouTube Video was used to introduce the concept, the purpose of the concept according to Carol Dweck, and how to work towards becoming growth directed through mindful awareness. (AC & CE)
- Immediately after the video, the researcher reflected on the concept presented, then provided a brief introduction on psychological flexibility and mindful awareness, the importance thereof, and how to acquire these skills, as well as how it relates to acquiring a growth mindset. These concepts were put into context and examples were provided. (AC, CE & RO)
- The researcher presented the following points for participants to unlearn and replace with new habits, and putting it into context with some examples:
 - How one's intention is most important for setting one's goals prior to attending to the objective, even if one intends to write an article for example but not sure where to start. However, one keeps reminding oneself and picturing this intention, then one will become aligned to achieving this intention as the picture will become more vivid and one's emotions, feelings and behaviour will then align in that direction. (AC)
 - An example was provided to participants on how the researcher practices her intention and attention by relating it to the researcher's experience when she was faced with challenges to

maintain and sustain her focus and still manage to complete important work under highly stressful conditions. (CE)

- People are unable to multi-task, so when one's mind is divided then one cannot attend to a task fully and one of the tasks will suffer whereby one is able to miss some information or make mistakes. Habits can be changed through ongoing and deliberate daily mindful awareness and reflective practices to overcome fear, clear the chatter in one's mind and to destress in the present moment. Through these practices, one will become more open to learning, the memory, focus and attention will improve. Through these daily practices, one will acquire these skills through effort. (AE)
 - For example, speaking to someone on the phone whilst attending to an email at the same time one will be able to attend to. However, one will either miss important parts of the conversation with the person on the phone or there may be an error in the typing response on the email. (CE & RO)
- The importance of positive self-talk was expressed, where one should always make effort to become awareness of one's language to change habits, by using the word 'Yet' in one's conversations when one has not reached a certain achievement yet to empower and shift the mind. Sheer mental effort and intentionality is required to redirect the mind to be more kind with oneself (gentle self-persuasion), as the mind is naturally conditioned to think negatively. (AC)
 - Practical examples provided to link this theory to reality. (CE)

4.1. Discussion (RO, AE, CE)

- The researcher then started a question-and-answer session, which lead to discussions around these concepts.

5. Group Activity (AC, CE & RO)

- Infographics of exercises with instructions on how to do the exercises were displayed on the screen:
 - The purpose of each exercise was explained.
 - Then the researcher demonstrated the exercises for the participants to observe prior to facilitating them through each exercise.

5.1.1. **Facilitated Group Activity** (KELT Cycle)

- The researcher started facilitating each activity for participants to experience each exercise and be able to put this experience in their own context.
 - Grounding exercises were first implemented – For example the mindful breathing exercise as a daily conditioning process to develop a faculty of observing oneself, and to notice and become watchful as to what is happening in the moment, what one is being distracted by and attending to. This exercise was also for one to become attuned to one’s mind and body to know when one is anxious when the breathing is irregular. Through sensations, observation, and reflection one notices the cool air that one breathes in with the nose whilst it fills up in the tummy as it expands and the warm air that one breathes out whilst releasing the air. This was a typical example to demonstrate how one can unlearn and relearn how one should breathe like an infant to remain grounded in one’s body fully present, and to learn how to redirect ones thinking.
 - The tension and relaxation exercises then followed. Tightening the fist and then releasing it, was an example used for one to be able to identify when one is uncomfortable and tense, and how to release this tension.
 - The researcher then created a space for active engagement by posing questions as to what participants do to overcome eye fatigue caused by tension buildup whilst working on the computer since eye fatigue is also a contributor of inattention. An exercise to relax the eye muscles to soften one’s focus to overcome the eye fatigue was then facilitated. Participants were then facilitated with an extension of this exercise that helps with shifting focus.
 - The last two exercises were focused on stimulating the brain through attentional training exercises, to connect and create an equilibrium between the mind and body.

6. **Closure of Workshop** (KELT Cycle)

- The workshop ended as a focus group session addressing the post evaluation questions. This session also served as a brainstorming session as participants shared their perspectives as to what needs to be included or amended in the workshop.

7. The PowerPoint slides were shared with participants via email as per their request to include as part of their daily practices, used as ice breaker in classrooms or as destressing methods to support learners to acquire their full attention during the learning process in the classroom whether face-to-face or online. The book information from which the hands-on exercises were retrieved from were also shared.

3.6. Data Management

Google Drive was used to store all data collected during the study. This was to ensure that the data is safely stored, and that the researcher has access to the information at any time.

3.7. Data Analysis

The study was refined during each of the four phases as well as during the proposal stage. During phase 1, the phenomenon was first explored by analysing the literature. Semi-interview questions were generated as instruments for the data collection process based on themes constructed by the literature. The researcher used this instrument to further explore and analyse the phenomenon in collaboration with two participants during the interview process. Through this collaborative process a needs analysis was established.

During phase 2, draft principles were generated from the literature which was used to guide the intervention. The answers that were generated during the phase 1 interview process also guided the draft principles that were selected for the workshop. The decision on how the workshop was conducted was informed by Kolb's (1984) experiential learning cycle. The decision as to which Information and Communication technologies that were selected for the workshop design and implementation were informed by the available technologies that the researcher had access to. These decisions were in accordance with the guidance of the adult learning principles and the draft principles as informed by the literature on how workshops to cultivate a growth mindset were conducted. The different selected ICTs were used to address the diverse learning needs of all

participants. The intention of the selected exercises, ICTs, the design of the facilitative learning process and the entire workshop was a means of having the participants experience the learning process according to Kolb's (1984) experiential learning theory.

During phase 3, the workshop was implemented with only one iteration. The researcher previously planned to schedule a post evaluation session with each of the participants separately, but during discussions participants indicated that they had extremely busy schedules. The researcher then adapted the post evaluation questionnaire to conduct it like a focus group session immediately after the workshop implementation. She sought the opportunity to create this focus group session as collaborative brainstorming session amongst participants as different insights are shared collectively, assuming that deeper and more meaningful responses will be communicated as per Kolb's experiential learning cycle. The study was refined during each of the four phases, and this is an example of the reflective and refinement process during the study.

During phase 4, an interpretive thematic analysis and Kolb's (1984) experiential learning theory was used for this study. A deductive approach to thematic analysis was utilised. This means that themes and subthemes were generated prior to the data collection process for analytical purposes according to the expected outcomes as informed by the conceptual framework and the literature review. Thematic coding according to Gibbs (2007), is a form of qualitative analysis that encompasses the researcher to identify passages in the text from the transcribed data that are linked by a shared idea or theme. Gibbs (2007), further explains that the identification of the shared idea or theme enables the categorisation process. After the data ideas have been categorised, it will enable the researcher to establish the themes by constructing a framework of thematic ideas to describe it. The researcher sought to attend to the final data analysis process by immediately transcribing the data after the data collection process was completed for the entire study. The analysis was accomplished by comparing if the outcome of the intervention created the draft principles. These principles were analysed against Kolb's (1984) experiential learning theory to produce the design principles. the researcher sought to attend to the final data analysis process.

3.8. Ethical Considerations

Ethical approval was granted at the institution of study prior to collecting data in the field, as the study involves human subjects. The DSA100 form was submitted to the Department of Student Affairs to request access to the student cohort who are participants in this study. Participants

were invited on a voluntary basis to participate in the study. Participants were notified that they will be able to withdraw from the study at any stage, should they feel uncomfortable. Participants were expected to be part of the postgraduate student cohort at the researcher's institution of study. The assumption was that the feedback that will be received from the participants may potentially be more beneficial with their insights as lecturers, trainers, researchers, and instructional designers as well as students. Potential participants were invited to partake in the study by using an electronic email communication. A brief overview of the research study was provided and what is expected of participants when they partake, as well as what they should expect should they choose to participate. Informed consent was obtained from each of the participants after the aims of the research study were explained. Surety of confidentiality and anonymity was maintained throughout the study. The nature of DBR is that the participants' identities remain confidential (Herrington et al., 2007). Pseudonyms were therefore used for the participants to protect their identities.

3.9. Scope and Limitations

Only one iteration was implemented for the intervention due to time constraints of the due date of the minor dissertation. The findings of this study are therefore not generalised as there is not enough time available to investigate the study's phenomenon on a long-term basis. As such, the findings of the study are specific to the context of this study.

3.10. Validity of Data

Data validity is essential for the research process to ensure data accuracy and consistency. The strengths of this research approach are in the analysis, as the analysis is with theory and the study is refined during each phase. DBR integrates the development of solutions to practical problems in learning environments with the identification of reusable principles (Herrington et al., 2007). A qualitative research methodology was being used for the data collection process and for that reason the participants are central to the study. DBR is a flexible and systematic approach working closely with participants while connecting with theory. There is constant refining of the design through analysis which strengthens validity and reliability. For example, the researcher had to relook at the research proposal to attend to the questions and draft principles to inform participants concerning all the processes for ethical clearance. DBR at the outset supports research; it is always open for further research even after the intervention is implemented (Herrington et al., 2007). The design of principles connects to the theory of each step.

Concluding Summary

This chapter presented the design-based research approach as the methodology that has been adopted to investigate and carry out the inquiry for the study. The chapter justifies as to why the DBR approach was selected, how and when the approach was implemented to address the study's phenomenon of the educator adaptation from face-to-face teaching to a blended learning environment. A brief overview of the researcher's positionality and its influence on the research process was discussed. An interpretivist qualitative worldview has been taken on for this study. This means that the researcher interprets what the participants know and do not know. In addition, the researcher also interpreted the ontology of blended learning and digitalisation which was especially real during the global health crisis.

The DBR approach was looked at to understand the challenges and its limitations in designing an intervention in DBR. A brief overview of the intervention and the ICTs used for this study were presented. The chapter describes the selection criteria for the participants, the data collection methods utilised in this study and the ethical considerations are presented. A detailed explanation of the data analysis techniques utilised were provided.

The next chapter presents the findings of the transcribed qualitative data that was gathered by the researcher.

Chapter 4: Findings

Introduction

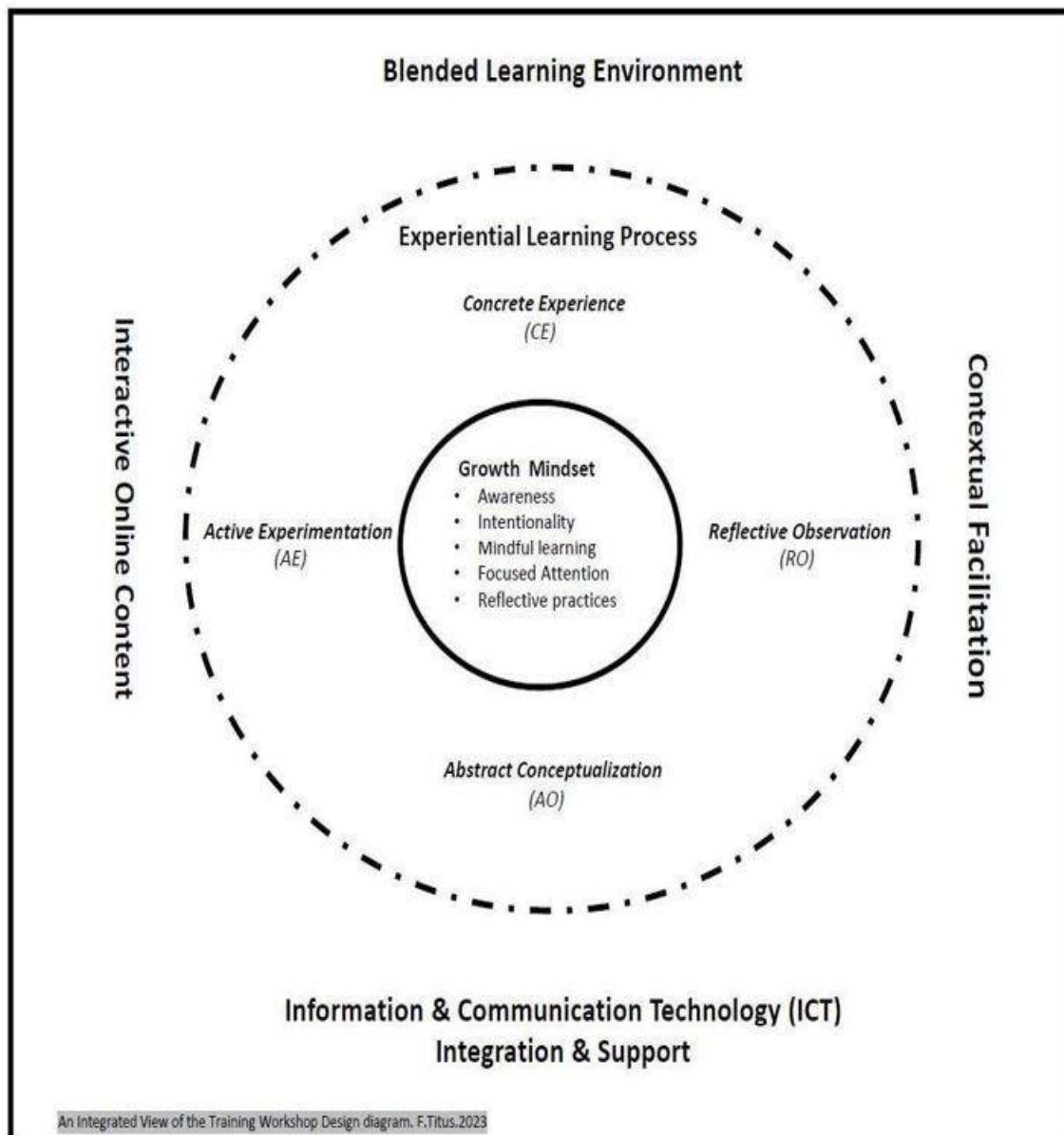
This chapter presents the findings of the design-based research training workshop intervention. The title of this training workshop is, 'A Design-Based Metacognitive Intervention Plan for Mindful Blended Learning in University Education of South Africa'. The purpose of this workshop was to establish design principles for the cultivation of growth mindsets to support educators at Higher Education institutions (HEIs) to adapt to an experiential blended learning (BL) process from the face-to-face lecturing modality. The participants actively collaborated with the researcher to contribute to the establishment of the design principles. A qualitative data collection process was employed utilising a pre-workshop semi-interview process with two participants and a post-evaluation semi-interview process in the form of a focus group with the five training workshop attendees immediately following the implementation process. The data provides a description of an in-depth understanding of the participant experiences. The description of the data facilitates the response to the primary research question that was addressed in this study, and the two sub research questions:

This chapter encapsulates the findings of the qualitative data utilising themes.

The chapter will first look at the presentation of the integrated view of the training workshop design. Thereafter, the chapter will engage with the findings of the data under each of the three themes and their respective subthemes. A brief description of each theme and subtheme will be presented which includes relevant participant text extracts from the transcribed data to support the claims. The established themes will be presented in the following sequence:

- Blended Learning Environment: Perspectives
 - Bridging Theory and Practice: Educator Role
 - Effective Use of ICTs
- Cultivating a Growth Mindset: Experiential Learning Process
 - Intentionality
 - Awareness
 - Mindful Learning
 - Focused Attention
 - Reflective Practices
- Training Workshop Enhancement

4.1. The Integrated view of the Training Workshop Design



4.2. Themes

4.2.1. Blended Learning Environment: Perspectives

This theme focuses on the perspectives on blended learning based on participants' experiences. There were similarities and differences in participant perspectives of the blended learning process and environment. P1 and P3 acknowledged that there are different meanings that exist for the blended learning concept. This theme therefore describes the importance of sharing the different perspectives of blended learning collaboratively based on participant experience for the sense making process and to assist with shifting perspectives. Another important factor that was described by participants is to create a constructive learning environment by creating a positive

and comfortable learning space which will encourage engagement during the learning process. A summary of selected participant text extracts are provided to support this theme.

P1 and P2 share similar understandings of blended learning. The participants described the educators' practices as central within a blended learning environment. They explained that educators create the experience for the learners, as they create an understanding of the content when they create context to bridge the theory gap (Appendix 1, Question 3). The educator therefore needs to create a conducive space for learning to take place. In addition, to shifting roles during the teaching and learning process from the didactic way of teaching to a facilitator of learning as required. P2 further reflected on their own experience during the recent global health crisis and mentioned that one should create a comforting environment for training sessions that is constructive to the learning process (Appendix 1, Question 1). P2 highlighted the fact that to enable the successful adaptation to a BL environment, will require an extension of educators' skills. There will also be implications when one avoids working with digital tools. Such as the inability to adapt and adjust oneself to BL (Appendix 1, Question 3).

During the discussions of the post evaluation session (Appendix 2, Question 1), P3 indicated that they found the researcher's interpretation of BL interesting as there are many interpretations. Whereas, P4 agreed with the researcher's interpretation that the BL process is implemented according to the context of one's study or the learning environment.

4.2.1.1. Bridging Theory and Practice: Educator Role

This subtheme focuses on the participants' perspectives and experience of the educator's role as central within a BL environment to close the gap between theory and practice. The participants frequently mentioned the importance of the educator role as a facilitator and trainer during the professional development process of other educators in an online synchronous BL environment. The educator also scaffolds the learning process. This subtheme therefore describes the significance of aligning academic theories with practical applications through the educator's practices to provide context to the content.

The summaries of the participant text extracts from the transcribed data are presented to support this subtheme.

There are similarities in P1 and P2's responses. The participants claimed that the learning experience that the educator creates through contextualisation will assist with making sense of the theory or learning content. The integration of hands-on and interactive activities that are

relevant and useful to the learning process are described as essential (Appendix 1, Question 3; Appendix 1, Question 7). P1 and P2 also described the importance of the positive learning environment that the educator should create. To be precise, P1 (Appendix 1, Question 7), described the educator as empowering. Whereas P2 (Appendix 1, Question 3), reflected on their own experience during the recent global health crisis and mentioned that one should create an environment of care.

P1 and P2 further describe the qualities of an educator within a blended learning environment (Appendix 1, Question 8), P1 described the educator to be “a good listener” and “not be distracted”, whereas P2 described the educator to be “consciously engaged and be present while teaching”. The participants explained that the educator should create a space of trust. Both participants described the preparedness of the educator and the fact that the educator must create meaning to the content.

During the post evaluation focus group session (Appendix 2, Question 3), P4 reflected on their perception of their learning experience of the training workshop intervention as being practical. The participant commended the educator on her preparedness since the planned activities enabled participants to experience how it is to engage in the active experimentation process. P4 reflected on how the participant’s state of mind shifted from being exhausted to moving into a state of relaxation and calmness. The participant further applauded the educator for being able to shift roles as required from the didactic teaching to a facilitator as required. Further, creating a space to contextualise the theoretical aspects for participants to make meaning through practice and engagement of activities.

4.2.1.2. Effective use of ICTs

The effective use of ICTs as a subtheme of the ‘blended learning perspectives’ focuses on how the participants’ experiences and insights align with this subtheme. This subtheme describes the pivotal role that ICTs play in the adaptation to the changing educational landscape especially when having to adapt and adjust to crisis such as the recent global health crisis. This subtheme also describes the necessity for innovative approaches to ensure that the student engagement and content delivery is effective. The participant text extracts that were selected from the transcribed data correlates with this subtheme. The data describes the challenges, adjustments, and the enhanced interactions this BL approach brings to the foreground.

For instance, P2 (Appendix 1, Question 1), expressed the significance of the integration of ICTs within BL environments as the experience during the global health crisis has demonstrated. The ICTs are described as pivotal to creating interactive engagements during the learning process, so innovation is required. P2 highlighted the importance of not replicating the content being used for the traditional way of teaching for the online learning-and-teaching process as it may cause an overload of information. The participant explained that the content must be adjusted for BL and that ICTs should be used as enablers to deliver the content for engagement. In addition, P2 described the pivotal role of leveraging ICTs to maintain connections with the students.

P1 (Appendix 1, Question 3), elaborated on how technologies are enablers to enhance educators' teaching practices. Further describing how the effective integration of technologies into classroom practices that are conducted in-person has the potential to make learning more meaningful by making the learning process more interactive. P1 explained how technologies also have the potential of improving the visual representation of the information being taught by the educator as a facilitator within a BL environment.

P2 (Appendix 1, Question 5), described the shift from the traditional lecturing role of the educator to the two-way interactions between educators and learners within BL which is integrally tied to the deliberate incorporation of ICTs within the instructional learning environment. The participant also described the importance of creating an enriching and engaging learning experience by effectively leveraging the ICTs to attend to diverse learner needs and preferences of learning. P2 perspective of the BL process is that the didactic way of teaching should be integrated in combination with hands-on activities by utilising ICTs to assist with creating context and the meaning making process.

4.2.2. Cultivating A Growth Mindset: Experiential Learning Process

This theme describes the importance of the growth mindset qualities to adapt to a blended learning process and environment. This theme also describes the significance of an experiential learning process in the development of a growth mindset through deliberate practices. For instance, some similarities on the growth perspective of participants that were frequently highlighted as ample, is for educators to be empowering, solution focused thinking, open to learning and being able to take control of the mind.

The summaries of the example participant text extracts that align to this theme are illustrated as follows.

P1 and P2 expressed a similar understanding of the growth mindset concept (Appendix 1, Question 1). The participants explained the growth mindset as an ability to be able to overcome obstacles, solution-oriented, being able to self-regulate one's thinking and emotions, as well as being open to learning to work towards growing as an individual and professional. Effort is also indicated as a crucial characteristic to being growth directed since one requires effort to work to improve their abilities and to overcome challenges. The participants included examples with their explanations of how one can nurture this mindset. P1 proposed the initiation of empowering group discussions to assist individuals to direct their minds in a more positive thinking direction. Whereas P2 described an active process as to how one can shift one's perspectives through intention towards a growth directed mindset.

P5 (Appendix 2, Question 5, line 6-10), commented on how useful the process of the integration of the personal development tool (Refer to 3.5.1 in chapter 3) during the training workshop was for the development of a growth mindset. P5 further recommended on how the hands-on activities can be integrated into the learning process for intentional interventions to nurture growth mindsets. By utilising the personal development tool with the intention to engage learners as well as foster their attention.

4.2.2.1. Intentionality

The subtheme of intentionality has been identified to significantly contribute to the cultivation of the growth mindset, as individuals intentionally adopt behaviours, speech and practices that align with self-improvement. This subtheme describes how one needs to make a purposeful intention to move in a certain direction of personal growth and development. Intentionality as a subtheme is consistently evident in participant responses, as they express how they deliberately and purposefully make choices towards personal growth. This subtheme is central to all the subthemes under the broader theme as it is demonstrated in the participant text extract that for every action there is a thought process involved which is called an intention that one makes. The following three participant text extracts have been selected and summarised as relevant to substantiate this claim of this subtheme intentionality.

P1's (Appendix 1, Question 7: Line 8-10), view on the design of a BL professional development training session is an illustrated example of how intentionality happens. Intentionality describes a

deliberate approach to a professional development training session, whereby the content and activities are intentionally designed to meet specific learning objectives (Reid, 2011). P1's (Appendix 1, Question 7: Line 8-10), intentionality is clear when the participant explains how the "training sessions should not be too long", and that all activities that are integrated into the development programme should be useful and relevant to the learning process.

P3's (Appendix 2, Question 4: Line 2-5), indication to integrate the application of the exercises as part of the classroom activities with the night learners is an indication of the participant's deliberate intention. P3 is purposefully thinking about how to utilize these exercises with a specific group of learners to address their specific needs to overcome their stressors. The participant expressed their intention to improve the learning process by providing students with personal development tools to become attentive in the present moment without any unnecessary distractions.

P5 (Appendix 2, Question 5), revealed their intent with the remark that the personal development tool can be utilized as an "ice breaker and attention-getter for online sessions". The participant's perspective of the tool is that it has the potential to capture people's attention when integrating it into the learning process prior to BL training. P5 also expressed a preparedness to explore the applicability of the tool in different contexts. This describes P5's purposeful and deliberate intention to enhance specific training sessions.

4.2.2.2. Awareness

The importance of the educators' ability to have an awareness is a theme that consistently appeared through the transcribed data gathered. This theme emphasizes the significance of finding the balance between professional responsibility with one's personal wellbeing as an educator as well as learner. The theme also describes how one requires an awareness to be able to adapt oneself to a certain situation, readjust oneself to direct the mind in a certain direction by becoming aware of one's thinking, and to be able to consciously follow one's habits. Participants highlighted the magnitude of incorporating strategies into their daily lives to alleviate and manage stressors by finding moments for relaxation and self-care. Some participants also described the impact of the sudden transitioning process to online brought about several challenges which required effort to move towards a different way of thinking and doing to find a balance.

Three examples of the participant text extracts are presented below to support this theme.

P2's (Appendix 1, Question 4: Line 2-11), text extract described an increased awareness of their teaching practices, which aligns with the theme of awareness. P2 (Appendix 1, Question 1: Line 1-17), reflected on how the impact of the recent global health crisis affected the participant's professional as well as personal life. The participant's comments highlight the importance of conscious effort to shift one's perspectives to redirect the mind in the direction to improve one's wellbeing, changing years of habits and to improve the approach to the teaching and learning process online.

P3 (Appendix 2, Question 1), and P5's (Appendix 2, Question 2: Line 4), comments reflect an emerging awareness of the change the exercises immediately brought to their state of mind. P3's reflection also demonstrates the practical application of how deliberate practices such as awareness and attentional training exercises can contribute to a heightened awareness to refocus. This is a central aspect of the awareness theme.

4.2.2.3. Focused Attention

Focused attention as a subtheme has been identified as crucial for the training and learning environments. This subtheme describes the importance of acquiring the skill as it has the potential to enhance one's learning, performance, and productivity in various activities. The participant comments of their experience participating in the workshop exercises illustrate how focused attention enables one to filter out distractions.

P3's (Appendix 2, Question 3), feelings of being "like a zombie" and not realising that they were home initially, described how deeply engrossed the participant was in the workshop exercises to the extent of temporarily losing an awareness of their physical location. P3's experience described the influence of focused attention during the workshop activities. Whereas, P5's (Appendix 2, Question 3: Line 2-3), comments described how the participant attentively participated and fully engaged in the activities. P5's testimony that the activities led to a relaxed state, illustrates how they paid focused attention to their experience during the hands-on activities. P5 (Appendix 2, Question 4), further explained how the personal training tool has the potential to develop and maintain a focused attention in preparation to bring people's attention to the present moment prior to commencing a blended learning professional development workshop. The participant expressed the usefulness of integrating the personal development tool into general intentional training or learning workshops for an attention grabber, and more specifically for the intention of the cultivation of a growth mindset.

4.2.2.4. Mindful Learning

Mindful Learning is a pivotal subtheme to cultivate a growth mindset as described by the participants' experiences from the transcribed data after the implementation of the training workshop. Participants frequently expressed the significance of creating a positive learning environment which is conducive to the learning process. Participants place emphasis on the importance of both the educator and the students' state of mind during a training or learning process. Being in the present moment and attentive to the learning process are described as essential to encourage engagement and focus. This subtheme describes mindful learning as an essential aspect for the effectiveness of the learning process.

The summary of three relevant participant text extracts are presented to support the claim of this theme.

P1's (Appendix 1, Question 8), comments aspire to several aspects that are aligned to mindful learning. Such as the educator qualities that P1 refers to which involves being open to learning, being fully present and attentive to the learning-and-teaching process. The participant explained how educators need to be prepared for their lessons in such a way that the educator will be able to explore different ways of teaching to ensure all learners understand what is being taught. P1 also highlighted the importance of creating a conducive space for learners to learn effectively, by constituting a comfortable, empowering, and honest learning environment.

P3 (Appendix 2, Question 4), conveyed a consideration of the mindful and engagement levels of the learners when they arrive at the classroom after work. The participant described his concern of how these learners took some time to engage in the discussions and to fully be present during the learning. For this reason, P3 became interested in applying the exercises deliberately into the classroom to see if it will enhance the students' learning experience. Since P3 experienced the shift from feeling tense and stressed to feeling destressed and energised after participating in the exercises, enabling the participant to become attentive to what was being learnt.

P5 (Appendix 2, Question 3), defined "metacognition" as "bringing attention to the current", describing their understanding and awareness of the concept. P5 also expressed their awareness of the shift in their mindset as they became more watchful of their thought processes. P5's remarks further described a positive learning experience when they voiced the feelings of relaxation after participating in the activities and finding the facilitation process pleasant.

4.2.2.5. Reflective Practices

This subtheme of reflective practice has been identified as significant to the development of the growth mindset. The subtheme describes the significance of reflective practices and reflective teaching methods to create a positive and learning environment for the development of the individual as a reflective practitioner. The reflective practice is also essential for sense-making purposes, and it is required to improve or change one's practices, thinking, actions or behaviour.

The brief summaries of the three participant text extracts that have been selected to provide some insights on the participant experiences on reflective practice. In addition, all three participant extracts illustrate self-reflection and self-awareness.

P1's (Appendix 1, Question 8: Line 7-13), perspective of educator requirements within a BL environment are to be good listeners, align their actions to correspond with their words, and have a willingness to explore different teaching methods. The participant deciphered how honesty as an educator plays an important role so learners may feel comfortable to trust the educator to an extent to provide honest and constructive feedback from learners for the purpose of improving the lessons. P1's comments inferred that to be able to improve one's teaching practices, it is essential for educators to be reflective. Reflective reflective practice is essential for this process of continuous improvement either through self-assessment or based on the students' perspectives and observations when they provide feedback.

During P4 (Appendix 2, Question 3: Line 4-9), and P5's (Appendix 2, Question 3), self-reflected process, the participants recognised the impact the practical exercises had on their state of mind. Through reflection, the participants were able to express their awareness of moving from being exhausted to feeling calm and relaxed which allowed them to immerse themselves into the learning process. P5 (Appendix 2, Question 2: Line 4-6), further deliberated about the participant's curiosity as to how these reflective exercises can be sustained in practice throughout an entire day. This deliberate process required P5 to engage in introspection and questioning the practical application of their newfound awareness into the daily work routine.

4.2.3. Training Workshop Enhancement

The training workshop enhancement theme is significant as it provides insights on the participants' valuable contribution for distinct directions for improving future iterations of the workshop. This theme aligns with the best practices for adult learning. The participant text extracts were selected to support this theme. The participants describe how the participants expressed that the

researcher should incorporate a verbal assessment to evaluate how the participants feel prior to the implementation of the practical exercises (Appendix 2, Question 2: P5). P3 also described the inclusion of physical movement exercises at the beginning of the workshop to re-energise the learners to become grounded in the present moment with their minds and bodies. P4 then added to P3's comments by recommending that the researcher search for online videos with these physical exercises that learners can follow (Appendix 2, Question 2).

Concluding Remarks

This chapter presented an integrated view of the workshop design and then captures the findings of the study utilising themes. The chapter presented the study's findings under three thematic themes that were generated prior to the data collection process according to literature of previous research that was done. Two of these themes were further divided into subthemes which correlate and align to these themes. A selection of participant text extracts from the transcribed data have been illustrated to support the claims of the themes and their respective subthemes. These text extracts describe the participant experiences and insights that align to each of the corresponding themes and subthemes. The themes and subthemes of this study are as follows:

- Blended Learning Perspectives
 - Bridging Theory and Practice: Educator Role
 - Effective Use of ICTs
- Cultivating a Growth Mindset: Experiential Learning Process
 - Intentionality
 - Awareness
 - Mindful Learning
 - Focused Attention
 - Reflective Practice
- Training Workshop Enhancement

The findings of this study described the importance of sharing different insights on the BL approach collaboratively based on participant experience to assist with shifting perspectives through sense-making. The participants highlighted the significance of creating a constructive learning environment by creating a positive space of trust and honesty which will encourage engagement during the learning process. The educator role was described as central to closing the gap between theory and practice, through their practices and creating this positive space. The educator is described to effectively help students develop a deeper understanding of the subject matter and its practical implications by creating context. Leveraging ICTs have been found as the

key resource for educators to facilitate the students' learning experience to be meaningful, interactive, and engaging. Applicable ICTs are found to enable educators with finding innovative ways to deliver the subject content effectively without creating an overload of information, assist with enhancement of the student performance by enhancing retention, and to create personalised experiences by considering the diverse learning styles of students.

The second theme of this study, the cultivation of growth mindsets with its five subthemes contribute to the experiential learning process. A brief description of a growth mindset as P1 (Appendix 1, Question 11), said that people work towards personal and professional growth. People who work towards acquiring these qualities are solution orientated as they perceive challenges as opportunities for growth. The people who work towards growth through a deliberate and purposeful intention and effort towards personal growth. With intentionality as a subtheme, it was found that educators actively set goals, plan their teaching or workshops, and provide clear learning objectives to students. This intentional approach to learning facilitates one to take ownership of one's own learning and to adapt to a proactive mindset as the thought processes direct the behaviour.

Awareness as another subtheme, was found that it is important for educators as learners to find the balance between their professional responsibilities and their personal wellbeing. The balance is required to enable educators to enable them to be attuned to themselves to recognise their state of mind in the moment and how to be able to consciously redirect the mind in a direction to improve their wellbeing. For instance, when in a state of discomfort then deliberate practices that assists with clearing one's mind to the present which leads to refocusing. The awareness is found to support educators to become adaptable, consciously change habits through effort as one will become aware of one's thinking to readjust one's thinking and behaviour to move. With this heightened awareness, it will enable educators to focus on the present moment on what they are attending to without any distractions. The awareness assists with a mindful learning process. since being in the present moment and attentive to the learning process was found to promote educators' focus.

Focused attention as the third subtheme, was found to be essential to the training and learning environments. Focused attention assisted participants to attentively participate and fully engage in the activities. P5 described how the exercises assists with attention during the learning process which grabs attention to the subject matter being taught. P3's testimony described the impact of attending to exercises that nurtured focused attention which led the participant to be deeply immersed in the workshop activities to an extent of temporary unawareness of his physical

location. This means that focused attention was found to filter out distractions and to focus on the present only of what one is attending to which potentially enhances one's performance and learning.

Mindful learning as the fourth subtheme, was found to assist with creating a positive and empowering learning environment conducive to the learning process. The significance of supporting the development of metacognitive skills was highlighted as it assists with reflecting on their learning processes and experiences and readjust their ways of thinking. This process also heightened participants' focus and attention in the present moment to what they are attending to which enhanced the engagement levels, as they were either feeling exhausted or stressed. The participants were then able to relax or feel a bit energised after participating in the exercises. It was also found that educators will be able to readjust their strategies during their practices. For instance, P3 intended to implement some of the practices in the classroom to assist the students coming from work to destress and to refocus to be fully present and enhance their learning.

Reflective practice as the fifth subtheme, was found to be central to the development of the growth mindset. Reflective practice overlaps with awareness. Reflective practice is a deliberate questioning process as illustrated by P5 when the participant reflected on his experience and the impact the practical exercises had on him. The participant then questioned how the practical application of this newfound awareness of the exercises would work into the daily work routine. Reflective practices were found to improve oneself, one's actions, one's behaviour, one becomes watchful of oneself, and there will then be a willingness to explore different teaching approaches to improve the learning process in one's practice.

Training Workshop enhancement, as the third theme, was found to be significantly useful as it provides valuable insights on the participants' experiences to enhance the learning process for future iterations of the training workshop to cultivate the growth mindset of educators to support the adaptation to a blended learning process. The theme was generated as it supports the process of best practices for adult learning. Participants expressed that additional activities should be incorporated to improve the workshop's intervention. That is a verbal assessment to evaluate how participants feel prior to participating in the hands-on activities. Also, to include physical movement exercises at the initial stage of the workshop to awaken and grab participants attention.

The study will focus on the analysis of the findings in the discussions chapter in chapter 5.

Chapter 5: Discussion

Introduction

The focus of this chapter includes, discussions and analysis of themes presented in the ‘Findings’ chapter within the context of Kolb’s (1984) experiential learning theory (KELT). The analysis, according to Herrington et al. (2007), is to generate the design principles to provide direction in the design of the curriculum. A personal/professional development training programme is intended to influence, adapt, facilitate, and support institutional and individual transitional changes. These changes include the design and integration of a blended learning environment.

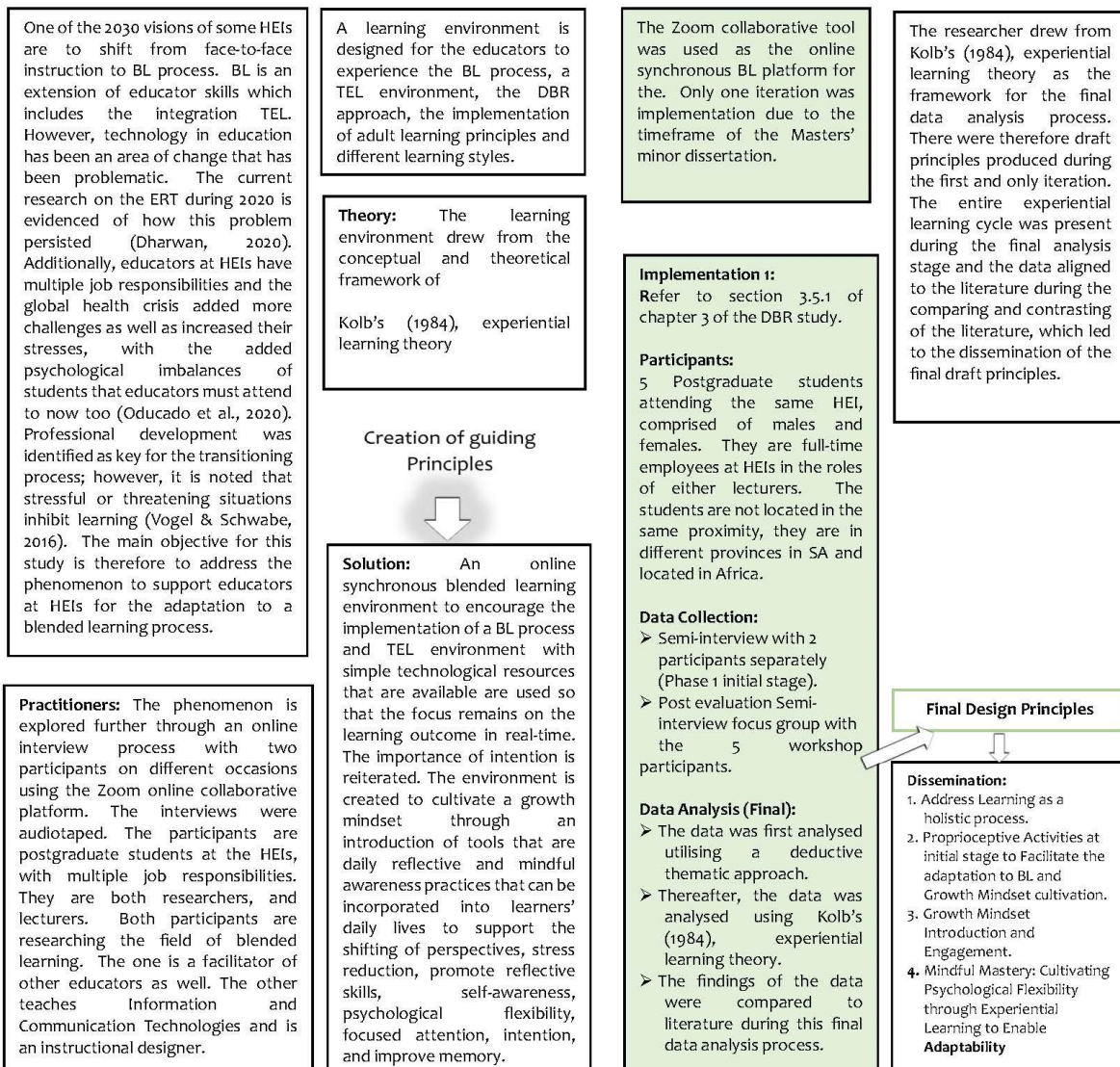
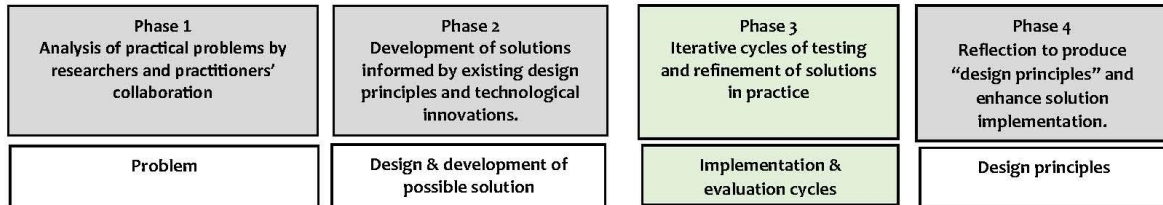
KELT posits learning is a cyclical process involving the four learning stages, referred to as concrete experience, reflective observation, abstract conceptualisation, and active experimentation. The learning cycle usually starts at the concrete stage of the experiential learning process, but according to Kolb (2015), the learning process can start at any stage of the learning cycle as it depends on individual learning needs.

The chapter will first look at the development of the framework and the research paradigm in the context of this study. The highlighted section on the DBR graph is discussed in this section of this study. Secondly, the chapter will discuss the analysis of the findings in chapter 4 aligning to Kolb’s (1984), experiential learning process. The analysis of the findings is discussed in relation to responding to the primary research question and two sub-research questions, in relation to the literature review.

- The Primary Research Question is: In what ways can the cultivation of a growth mindset address the phenomenon of adaptation to a blended learning (BL) experiential process?
- Sub-Research Question 1 is: How do Higher Education Lecturers make sense of the blended learning (BL) process experience and their adaptation to change?
- Sub-Research Question 2 is: What are the perceived prerequisite concepts required in an intervention programme that could promote a growth mindset to adapt to a blended learning experiential process?'

The chapter will look at the Insights from the analysis of the findings lastly, by means of summarising the key aspects that were derived from the analysis of this study.

Chapter 5. Framework Development and Research Paradigm in the Context of this study



5.1. Blended Learning Environment: Perspectives

Interviews were conducted with participants to probe into the sub-research question 1 that was committed to understanding how educators make sense of an experiential blended learning process. Since addressing the participants' understanding and knowledge of BL is the responsibility of the educator as facilitator and coach (Kim et al., 2015). The findings in chapter 4 in response to the sub-research question 1 have revealed that educators' perspectives on blended learning, were pivotal at the initial phase of the experiential learning process. Educators who embraced the qualities of a growth mindset were more likely to view BL as an opportunity for their personal and professional development. Aligning to Kolb's abstract conceptualisation stage, participants were concerned that the BL concept had many interpretations (Appendix 1, Question 3: P1; Appendix 2, Question 1: P3). Participants suggested that it is crucial to have everyone come to the same understanding by providing them with clarity of BL, understanding of the context of the environment and benefits of the BL process (Appendix 1, Question 5: P1). Lim et al's (2016), research support this notion. The authors' research confirms that educators and institutions can only effectively transition from the didactic way of teaching to a BL environment when learning designers embed a shared understanding of the BL concept within the professional development programme. The subject content and learning process should also provide immediacy, relating to research by Knowles et al. (1998), that adults learn best when it comes to what is meaningful to them and if they can apply what has been learnt immediately in a real-world situation.

The perspectives to provide a positive learning environment through empowering talks to create a constructive learning environment and to support participants to move in a positive thinking direction (Appendix 1, Question 12: P1), will create a space for mindful learning to take place. This was evidenced in the findings of the dataset and correlates to Langer's (2016), research that with a positive mindsets' students will become more receptive to learning. This process is the foundation to becoming growth directed according to research done by Dweck's (2016). The participants' insights of the design of the learning environment therefore aligns to the growth mindset theory which underpins creativity (Kamins & Dweck &, 1999; Dweck, 2016; Abboud, 2017; Dweck & Yeager, 2019). Creating this environment relates to the concrete experience of Kolb's (1984), learning cycle.

5.1.1. Bridging Theory and Practice: Educator Role and ICTs

The findings in chapter 4 further implied that educator practices are central to creating a conducive space for learning in the training environment within a blended learning environment. The educator's role is crucial in supporting students with contextualising theoretical knowledge by connecting the theory with authentic situations to create meaning. The educator also plays the role of linking theoretical knowledge with practical application. This corresponds to Kolb's (1984), abstract conceptualisation phase, where educators connect academic content to practice. This process requires the shifting of educator roles, from didactic teaching when providing brief descriptions of concepts, to a trainer and facilitator of learning who then provides step by step guidance through the scaffolding process. With the practical illustration of the workshop's online synchronous blended learning environment enabled learners to learn from an actual authentic experience. Participants were also able to witness and experience the importance of an educator's preparedness of the subject content, and think about how an educator needs to listen and engage with students. The participants were also able to experience the intentional planned design of the training workshop with its activities for a blended learning environment, moving them through the reflective observational stage of Kolb's (1984), experiential learning cycle.

5.1.2. Effective Use of ICTs

The findings in chapter 4, to further respond to the sub-research question 1, that educators need to thoughtfully integrate ICTs as an enabler into the learning environment to support the learning process and make learning more meaningful which aligns with Thorne (2003), and Kastner's (2021), narration that meaningful learning should be the learning outcome during BL. The study's findings resonate with Kim et al. (2015), research that BL is about the educator role and practices, and not just about integrating ICTs into the classroom haphazardly. This finding implied that to make learning effective it is best to implement technologies into the learning environment that participants are familiar with, to avoid disruptions from the focus of the learning objective. Should something new be presented, then the educator needs to scaffold participants through the process step by step. It was evidenced in participant responses that the implementation process of the training workshop was successful when the educator thoughtfully integrated different ICTs to address different learning needs. Ali et al. (2015), and Medina's (2018), research support this study's findings, in the sense that the authors research verifies that for best practices BL presents educators with options to adjust the curriculum to make allowance for the students' different learning styles and learning needs. This resonates and aligns with Brown (2011), and Mima (2018), research that the educators bring change with their thinking and practices to transform the teaching-and-learning process.

5.2. Cultivating a Growth mindset: An Experiential Learning process

Sub-research Question 2 aimed to uncover the pre-requisites in cultivating a growth mindset to support the adaptation to an experiential blended learning process. This study identified Kolb's (1984), experiential learning process as fundamental in cultivating a growth mindset. According to this research the core areas of development and application include the engagement of one's' personal Awareness, intentionality, observation, deeper reflection, focussed attention and learning to become mindfully engaged in diverse learning situations. This aligns to the insights derived from Kolb (1984; 2015), Langer (2016), and Dweck's (2016), research.

Mindful awareness, attention and reflective exercises are introduced as starting points of reference to unlock the understanding of one's mode of mind. An example of this is to shift from a space of tension (whether in the mind, feelings, the body, or emotions) towards a more relaxed calm-alert state of mind. These practices underpin the sustainable development of shifting one's mindset to a growth mindset as well as other positively charged states of mind.

Lim et al. (2016), and Abboud (2017), advise that Educators Professional Development be integrated as part of their Lifelong learning process to constantly evolve towards mastery over themselves and to attain excellence in provision of education and learning at a high level of quality.

5.3. Training Workshop Enhancement

The participants suggestions to enhance the training workshop is a guide to responding to the primary research question to describe the ways the cultivation of a growth mindset can address the phenomenon of adaptation to a blended learning (BL) experiential process. This theme harmonises with Kolb's (1984), four stage experiential learning cycle and are discussed accordingly.

- Responses reflect the participants' experiences when they suggested additional training activities to be incorporated to enhance the training workshop for the cultivation of educator mindsets as a supportive variable for the adaptation to a blended learning environment. These responses correlate with the "Concrete Experience" stage of Kolb's (1984), learning cycle, where the participants can recognise the limitations in the current workshop practices.
- The participants critically evaluated the training workshop practices. Then they were able to recognise the need for improvements by considering how the workshop can better support the development of a growth mindset amongst educators as a

supportive measure for the adaptation to a BL process that is aligned with the “Reflective Observation” stage.

- Some participants went further by engaging in the “Abstract Conceptualisation” stage by discussing theoretical enhancements about how these suggested improvements can lead to better workshop enhancements.
- Demonstrating the “Active Experimentation” stage, participants expressed their readiness to incorporate some exercises which were implemented in the training workshop into their practices. The participants will also assess the impact these changes will have on their practices which implies that they are committed to improving their own workshop processes.

5.3.1. Presencing: A Starting Point to Settle In

5.3.1.1. Encouraging Reflective Observation of Participant Emotions and Experience

The training workshop enhancement theme in the findings chapter revealed the suggestion to include a self-evaluation to assess participant emotions prior to the participation in the hands-on activities. This suggestion harmonises with Kolb’s (1984), reflective observation stage seamlessly, as it will encourage participants to reflect and become watchful of their emotions in the present moment. The self-evaluation correlates to Dweck’s (2016), theory on the cultivation of a growth mindset. It is an awareness activity for participants to observe themselves to become self-aware as to where they are in their body, thoughts, and mind in the present moment. If one does not know how one operates, how will one know how to adjust or readjust oneself to move from a state of tension to a state of relaxed calm-alertness and how does one know that one needs to change? The awareness of present states is a starting point to prompt participants to contemplate on their experiences, observation, emotions, thoughts, and bodily awareness through introspection. This reflective thinking process during the pre-assessment is an active practice which relates to Rodgers (2002) and Matthew et al, (2017), research that the activity will require participants to make a conscious and intentional effort to think about their feeling situation and to develop insights into it as they have an internal dialogue with themselves. The authors also emphasise the importance of encouraging reflection for the process of personal and professional development. This is a shared perspective with Kolb’s experiential learning theory suggesting that reflection is central to the learning process (1984). The participant's reflection on their mindsets and experiences at the initial stage of the workshop is therefore perceived as a pre-requisite for the development of a growth mindset which in turn supports the successful adaptation to the experiential blended learning environment.

5.3.1.2. Incorporating Physical Activities at the initial stage of Workshop for A concrete Learning Experience Through Active Experimentation

The participant recommendation of initiating the training workshop with mindful awareness activities to connect the mind with the body so they may become present in the moment within their bodies is the reflective stage of Kolb's (1984), reflective observational stage of the experiential learning model. This activity will provide participants with a concrete sensory experience to start their learning journey. This concrete experience is enhanced when they are watching and following the video content of the practical exercises that they are participating in. The proposed activities to engage participants online through the deliberate use of ICTs for the deliberate hands-on activities are related to Norberg (2011), and Ali et al's (2015), research on blended learning as the participation is assumed to increase learner retention. By engaging in this actual experience and practical exercises, the participants also engage in the training workshop content. This means that participants are engaging in an authentic learning scenario (Kolb, 1984; Kolb 2015), which asserts that real-world encounters are central to the learning process.

The physical movement awareness activities serve as an embodiment of Kolb's (1984), reflective observation stage as participants become watchful of themselves and sensing the impact these activities have on their wellbeing. These activities also encourage active experimentation. Participants' personal attention will enhance when they participate in these hands-on awareness exercises. This has been illustrated by McNeil's (2007), research that when focussing on one thing, the energy will flow to what one is attending to in the moment and this focus helps with preserving one's mental energy which leads to an enhanced focus. The combination of attentional training, reflective practices and mindful awareness are all the skills required for the mindful learning process to occur as it clears the mental filters from distractions (Langer 2016; Abboud, 2017). These practical exercises are a starting point to unlock the participants' understanding to shift from tension to relaxation and move to a relaxed calm-alert state of mind. It brings an awareness that enables the shifting of the mind to become growth directed when settling into the mind, body and where they are at in the present moment which is the classroom (Abboud, 2017). Langer's (2016), research is evidenced in proving that mindful awareness exercises bring a sense of relaxed calm-alertness as it decreases burnout, preceding one to becoming receptive to learning, increases creativity, productivity, attention which then leads to mindful learning in the classroom.

5.4. Insights from the Analysis

Kolb's (1984), experiential learning cycle was proven to be instrumental in developing a growth mindset that has been evidenced to support the adaptation to the blended learning process. The dataset from the pre-workshop interviews and post-evaluation focus group interviews complements each other, confirming the identified themes and subthemes. By interpreting the responses and analysis within these themes and subthemes, as well as aligning them with the four stages of KELT (1984), provides a comprehensive understanding how educators engage in experiential learning in the context of BL. This approach enhances the depth of the analysis. It also contributes to the theoretical underpinning of this study.

The next chapter will provide a reflective overview of the study, the design principles derived from the analysis of the dataset and recommendations.

Chapter 6: Conclusion and Recommendations

Introduction

This chapter draws conclusions based on the data collection on the literature, findings, and discussion chapter in relation to the research aims and research questions, as well as the value and contributions thereof. The chapter will first engage with the main insights from the data. Next, the recommendations will be discussed in the form of design principles, rooted in the insights gained from this study. Reeves (2006), and Herrington et al. (2007), emphasise that the development of design principles is a crucial process as it provides other researchers or practitioners with guidance on what the planned learning design should look like, by providing the characteristics of a specific learning environment and outcomes. The design principles also inform practice by providing the procedure on how to develop the learning design for other practitioners and researchers to follow. Reflection on the study's limitations will be reviewed second. This will finally be followed with the concluding recommendations for future research.

6.1. Main Insights of the Data

This study aimed to identify the ways in which the cultivation of a growth mindset can address the phenomenon of the adaptation to a blended learning (BL) experiential process utilising the DBR approach. The purpose of this was that professional development was identified as a central prerequisite to prepare educators with the appropriate knowledge and skills to enhance their performance in these increasingly challenging online and blended learning environments during their transitioning process (Lim et al., 2016; Abboud, 2017). Yet, the state of the mind impacts the effectiveness of professional development since the mindset predetermines the way in which people feel, think, interpret, and respond to situations. With demands increasing, it is becoming increasingly difficult to concentrate effectively, as life is becoming more distracted and complex (Nideffer & Sharpe, 1978). For example, the sudden move to emergency remote teaching during the lockdown caused additional stressors for both learners and educators alike, evidenced with the dropout rate and the overload of information provided to learners (Dwarwan, 2020). Administrative responsibilities for educators also increased. Furthermore, many HEI educators' practices remained unchanged since the ICTs are not effectively being implemented for TEL purposes (Ng'ambi et al., 2016), a byproduct of long-term unchallenged habits. The psychological factors which include stress, being overwhelmed, and threatening situations are also known to impede learning (Vogel & Schwabe, 2016). The researcher therefore designed 'A Design-Based Metacognitive Intervention Plan for Mindful Blended Learning in University Education of South Africa' to probe into the phenomenon of the adaptation to the blended learning environment. The

exploration of this workshop was to better understand the design of a practice as a personal development tool that will support adult learners with the changeover to BL from the didactic traditional way of teaching at HEIs. This study has shown that educators can benefit from the cultivation of a growth mindset in adapting to a blended learning process, evidenced in the participants' feedback on how the activities were beneficial as well as wanting to integrate these activities into their practices to enhance student engagement. It can be concluded that Kolb's (1984), experiential learning cycle was also proven to be instrumental in the cultivation of a growth mindset to support the adaptation to the blended learning process.

The qualitative data collected during this study have proven that to nurture intentionality, an awareness and focused attention through mindful learning practices cultivates that slow brain response that one needs to make informed decisions. Being in a state of mindful awareness helps participants to be grounded in the present moment during the learning process and experience the shift of the mind or their thought patterns. These practices supported participants during the workshop to acquire the inner strength to feel, sense and embrace uncomfortable feelings or disequilibrium in the body or emotions. In doing so, they were able to recognise if in a fixed state of thinking as they were fully aware of their behaviour. Also, when participants attended the attentional training practices, they were able to immerse themselves into the practices without being distracted by outer influences and that of their own minds as they developed that focused attention. For instance, P3 (Appendix 1, Question 3), expressed how he forgot for a moment where he was physically as he was engaging in the practice. It required intentional effort, introspection, self-awareness, and an awareness of the surroundings to realise that P3 was in this state of mind. These interrelated human aspects were also required for P3 to readjust and realign himself to the present moment. The experiential practices as such supported the participants to understand how they got into this state of mind. The intentional effort, focused attention, reflection, and acquiring an awareness are all interconnected aspects of psychological flexibility to enable adaptation to the current context. Adaptability through psychological flexibility is an ongoing process of learning, whereby one needs to continuously hone their understanding of themselves and their surroundings. One also requires making an intentional effort to align with one's values in an everchanging learning environment (Ramaci et al., 2019). This ongoing learning process of adaptability by means of acquiring psychological flexibility leads to the attainment of a growth mindset. A growth mindset is a state of mind beneficial to becoming adaptable to a blended learning environment. This means that the educator role within a blended learning environment is crucial to facilitating and scaffolding the learning process.

6.2. Scientific Outputs: Design Principles

- **Address Learning as a Holistic Process.** This design principle highlights that people are not fragmented beings, and different aspects of the mind influences the learning experience. The interconnectedness of the mind, body, and the non-physical in the learning process should therefore be considered when designing an educational intervention or learning environment to support participants with overcoming potential learning barriers. All other aspects of the learning experience should also be considered such as the cognitive, environmental, and social aspects for participants to experience a comprehensive learning journey.
 - *Design a beneficial and useful learning experience in an online synchronous blended learning environment in real-time for 90 minutes maximum.* The learning environment must be authentic and conducive to learning for an engaging concrete learning experience. The learning activities and assessments should be designed to engage participants on a cognitive, emotional, and social level. Resources and tools should be provided that will promote learner autonomy, support individual growth and wellbeing.
 - *Appropriate ICTs selected as enablers to enhance the learning process.* The ICTs must be user-friendly, align to the learning objectives and the pedagogical approach. The incorporation of various and appropriate ICTs such as videos, interactive simulations, brainstorming sessions, and collaborative discussion forums will assist with addressing the different learning needs.
 - *Recognise that the trainer's role is multifaceted in a blended learning training environment.* The trainer shifts roles from didactic to the facilitative role accordingly to illustrate how theory is bridged through practice through contextualisation, scaffolding, and the implementation of experiential activities useful to the learning process. Trainer to be consciously present to be able to engage with students.
 - Explicit outline of the workshop should be provided with reasoning of each activity.
 - Provide a brief overview of BL.
 - Promote collaborative discussions through reflections and perspectives on BL.
 - Emphasis should be placed on the educator role to realise the role as mentor and facilitator who guides and supports learners' development. It is not just about the acquisition of knowledge but the acquisition of how to apply that knowledge in real context, the acquisition of skills to adapt to the changing educational landscape and support the learners' overall growth such as their attitudes. When

the tools are provided to enable the ability to shift perspectives and ways of thinking in a growth direction, then the attitudes of learners will change accordingly.

- Trainer should have the ability of switching between focused attention and open attention during the learning process depending on the task or situation at hand.
- **Proprioceptive Activities at initial stage to Facilitate the adaptation to BL and Growth Mindset cultivation.** Facilitating present awareness state as a starting point of immersing participants into the workshop.
 - Trainer to first probe questions to activate and foster self-reflection and self-awareness of present state of mind (emotional, feeling, thought processes, bodily awareness).
 - Physical movement exercises initiated with video on mindful exercises to engage participants' physically and mentally in the present moment, enhancing their focused attention on the upcoming learning activities.
- **Growth Mindset Introduction and Engagement.**
 - Provide a brief overview of growth mindset and how the brain works in relation to learning.
 - Help participants see mistakes as a natural part of their learning process by viewing it as an opportunity to learn and grow as one's ability can grow with effort. To value the learning journey through understanding.
 - Introduce participants to positive self-talk to reinforce the idea that abilities can be developed by encouraging the phrase 'yet'. For instance, "I cannot draw as yet", communicates the idea of continuous growth to the mind.
 - Trainer to demonstrate a growth mindset in his /her practice and actions.
 - Emphasise the value of effort and persistence by sharing personal stories of overcoming a challenge through effort by using one's inner resources acquired through ongoing daily practices.
 - Create a positive and conducive learning environment through positive talk.
 - Facilitate discussion.
- **Mindful Mastery: Cultivating Psychological Flexibility through Experiential Learning to Enable Adaptability.** Psychological flexibility is crucial for the cultivation of a growth mindset and adapting to a blended learning environment. It is the ability to be able to identify distressing or uncomfortable thoughts and feelings caused by changing environmental and psychological situations. Acquiring this ability enables one to look at

the situation from different perspectives to adapt and re-adjust one's thinking and behaviour to align to one's goal. Personal examples should be discussed to provide context of how the interrelated elements and its practices are integrated into practice to provide context to the theory. The key elements that guide this principle are:

- *Promote and Nurture Intentional Growth and Awareness.*
 - *Explain what intentionality means and the importance of having a clear intention for a specific goal. Reiterate the power of aligning oneself to one's intention into a positive direction. Remind participants that intentionality is an ongoing daily practice to improve acquiring the ability to have clear and vivid intentions to reach a specific goal. This means that when there are distractions then one needs to remind oneself about what is most important to reach a specific goal and why. The cultivation of awareness is required to be able to recognise that one is being distracted, awareness is also a daily exercise to be integrated into one's daily life. So, once that awareness comes to light, then effort is required to redirect the mind to realign oneself to one's intentions to envision and focus on that goal. A visual representation of the goal can be created as a reminder of one's goals as well as reminder to remain focused on the goal at hand which is to grow. So, when there is an unexpected feeling of disempowerment then the visual representation can be a reminder to realign one's intentionality into the right direction of growth.*
- *Encourage and Nurture Focused Attention through attentional training and awareness exercises.*
- *Promote reflection by explaining the process of purposeful reflection. Then integrate reflective practices through discussions, probing that leads to self-reflection during, before and after exercises.*
- *Facilitate Experiential Learning Activities:* Explore ways participants can apply the elements as experiential learning activities and techniques. Facilitate the active participation and exploration for participants to learn through experience by doing (Refer to 6.2.3). Emphasise the importance of each activity as a daily disciplined practice to contribute to their ongoing growth and personal development.

6.2.1. Practical Outputs: Designed Artefact(s)

- ICT Supporting Tools Enabling Virtual Synchronous BL Classroom without Disruptions: Smartphones, Tablets and laptops, Wi-Fi, or Fibre to enable online connectivity, Zoom Application for the online learning platform.
- ICT Presentation Tools for Content Delivery: MS PowerPoint as the main resource tool to present the subject content and to assimilate all other relevant ICTs which will be conducive for the learning and development of all learners to support the long-term working memory. Such as the:
 - YouTube videos with brief introduction to BL and Growth mindset.
 - Infographics of guided practices.

6.2.2. Practical Outputs: Intangible Artefact(s)

- Series of Daily Disciplined Experiential Practices for Grounding and Centering – Leads to Enhanced Focused Attention, Concentration, Awareness, Reflection in Preparation for Mindful Learning Process:
 - **Breathing exercise example for relaxation to clear mind to be present:** Be at Ease, Be Still and be Vigilant, take slow deep breaths to feel the ease and relaxation. Follow the Breath in and out slowly until you feel a deeper sense of calm.
 - **Exploring Tension Vs Relaxation:** Close your hands like a fist as tight as you can. Now release with open fingers. Can you feel the difference between tension and relaxation? This exercise is one to distinguish between tension and being relaxed, and for one to become consciously aware of the tension in one's body and releasing this tension when required.
 - **Brain Stimulating Exercises:**
 1. **Display Infographic of Infinity and Facilitate the Exercise**

Eyes open, draw in the air the sign of infinity with your right forefinger. Next, draw the same sign with your left forefinger.

Repeat these 2 movements with eyes closed.

Then, keep the eyes closed and draw mentally this sign without moving your hands.

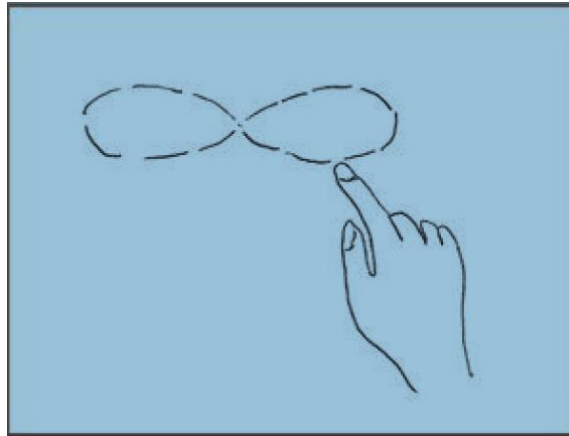


Fig 3: Roulier (2015).

2. Display Visual Infographic of Spiral and Facilitate the Exercise

With the eyes open and head still, draw the 2 spirals in the air simultaneously with your 2 forefingers: Following the spiral with the eyes, with the forefingers draw the spirals from left to right.

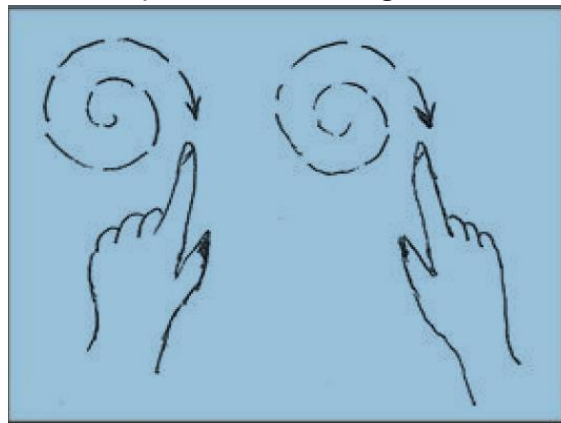


Fig 4: Roulier (2015).

Then, change the direction and draw the spirals from right to left.

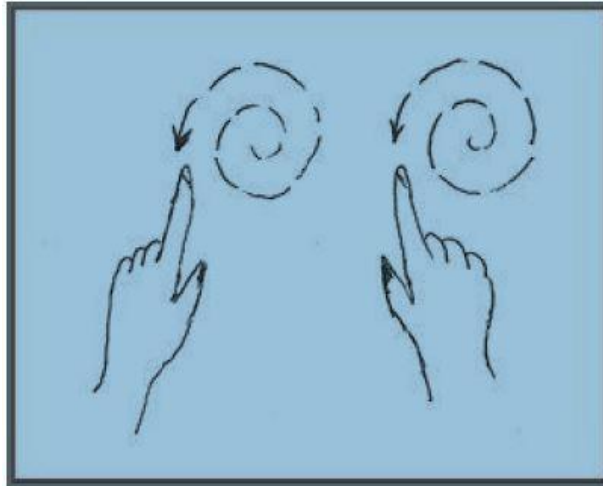


Fig 5: Roulier (2015).

Then, with the forefingers draw each spiral in a different direction inwards.

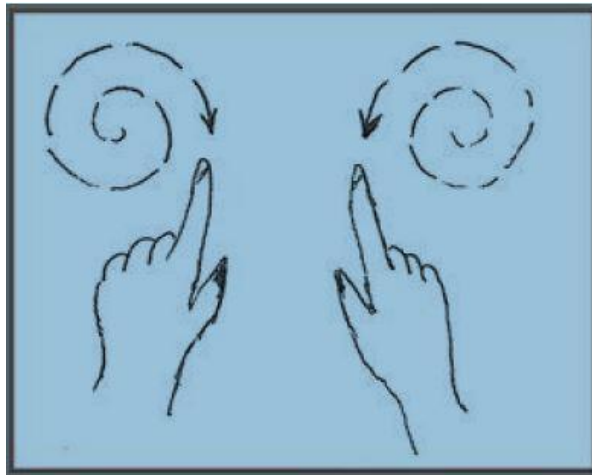


Fig 6: Roulier (2015).

Now, with the forefingers draw each spiral in the opposite direction outwards.

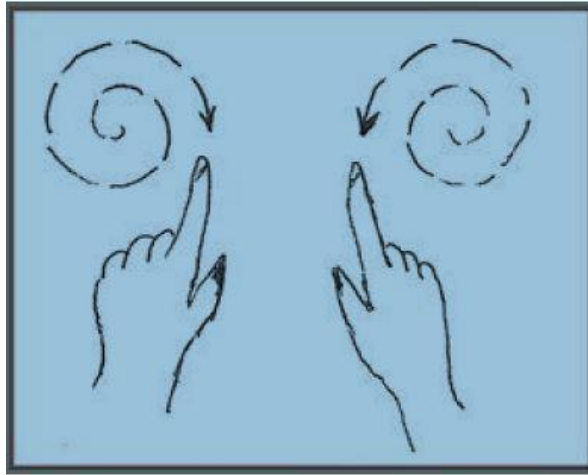


Fig 7: Roulier (2015).

Repeat these spiral exercises in the same order with eyes closed. Once the cycle has been completed, repeat the cycle of exercises mentally with the eyes closed without using any hands.

- **Intentionality and Awareness Practice:** Make an intent to pause, then to regulate the breathing and reframe the thoughts to shift in a direction of what one is intending to do in that moment. This process is a means to align oneself in the direction of what is most important. For instance, if one is intending to complete a task that seems to be difficult, then align the thoughts to think positively to feel that the task can be accomplished then start working on it. Acknowledge those distracting thoughts and recognise that it is just a passing thought that is unfavourable, then redirect the mind in the present moment that is most beneficial.

6.2.3. Societal Outputs: Professional Development of Participants

- Critical reflection was cultivated by all participants including the researcher involved in the study.
- Insights developed on how to incorporate daily practices as coping mechanisms which will assist with relaxation, remaining calm alert and focused.
- New insights developed on how to improve student attention and retention in classrooms to improve participant engagement.
- Acquired mutual understanding of BL that it is dependent on the context and it requires an extension of educator skills. Additionally, educators play a crucial role as the facilitator

to provide context to the theory being taught and act as mentor and coach to scaffold the learning process.

6.3. Study Limitations

This study was limited to integrating one iteration during the implementation process of the workshop intervention due to time constraints of the minor dissertation.

Conclusion

In this study, intentionality, awareness and reflective practices, attentional training, mindful learning, and experiential learning were looked at to understand the challenges in designing a self-development tool as a pre-requisite to enhance the BL professional development learning process. It can be drawn from this basic research that if the nurturing of intentionality, awareness, reflection, and focused attention through an experiential learning approach will lead to a mindful learning process. When these acquired skills are combined it presents a powerhouse of integrated tools to optimise the learning experience as it cultivates psychological flexibility enabling an adaptability to advance in this changing educational landscape influenced by technologies. The established design principles to cultivate a growth mindset can be used as a foundation to implement into a training programme to support educators with the adaptation to a blended learning process at HEIs. To this end further research is required in terms of developing explicit instructional design to maintain a growth directed mindset as a personal development tool for personal growth which ultimately leads to one's professional development.

References

- Abboud, P., 2017. **Supporting A Growth Mindset in High School Classroom Teachers** (Doctoral dissertation, Brandman University).
- Alammary, A., Sheard, J. and Carbone, A., 2014. Blended Learning In Higher Education: Three Different Design Approaches. **Australasian Journal of Educational Technology**, 30(4), pp.440-454.
- Ali, M.F., Joyes, G. and Ellison, L., 2015. Proposing The Third Generation of An Aligned Activity System as A Theoretical Framework in Blended Learning Research. **Journal Teknologi**, 75(3), pp. 61-66.
- Anderson, T. and Shattuck, J., 2012. Design-based research: A decade of progress in education research?. **Educational researcher**, 41(1), pp.16-25.
- Baer, R.A., Smith, G.T., Hopkins, J., Krietemeyer, J. and Toney, L., 2006. Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), pp.27-45.
- Beere, J., 2016. **GROW: Change Your Mindset, Change Your Life-A Practical Guide to Thinking On Purpose**. Crown House Publishing Ltd.
- Belluigi, D., Czerniewicz, L., Agherdien, N., Badenhorst, J., Chambers, T., Chili, M., De Villiers, M., Felix, A., Gachago, D., Gokhale, C. and Ivala, E., 2020. **A Wake-Up Call: Equity, Inequality And Covid-19 Emergency Remote Teaching And Learning**. *Postdigital Science and Education*, 2(3), pp.946-967.
- Bennett, B.J., 2017. **Growth Infusion: Embedding Staff Development In A Culture Of Learning**. *Online Submission*.
- Bersin, J., 2004. **The Blended Learning Book: Best Practices, Proven Methodologies, And Lessons Learned**. John Wiley & Sons.
- Black, S. and Allen, J.D., 2020. Insights from Educational Psychology Part 12: Interventions and Collaborations. *The Reference Librarian*, 61(1), pp.56-69.
- Bolton, G., 2010. **Reflective Practice: Writing and Professional Development**. Sage, London.
- Bozalek, V.G., McMillan, W., Marshall, D.E., November, M., Daniels, A. and Sylvester, T., 2014. **Analysing the professional development of teaching and learning from a political ethics of care perspective**. *Teaching in Higher Education*, 19(5), pp.447-458.
- Bozalek, V. and Ng'ambi, D., 2015. **The Context of Learning with Technology**. *Moving Beyond the Hype: A Contextualised View of Learning With Technology in Higher Education*, pp.3-6.

- Brookfield, SD., 2017. **Becoming A Critically Reflective Teacher**. Second edition. San Francisco, CA: Jossey-Bass.
- Brown, R., 2011. **Prejudice: Its Social Psychology**. John Wiley & Sons.
- ‘Cambridge University Press & Assessment’, (2023) Cambridge Dictionary. Available at: <https://dictionary.cambridge.org/dictionary/english/real-time> (Accessed 1 September 2023).
- Carliner, S., 2004. An Overview Of Online Learning. **Journal of European Business Review**, 16(4), pp. 430.
- Cheng, M.W., Leung, M.L. and Lau, J.C.H., 2021. **A Review Of Growth Mindset Intervention In Higher Education: The Case For Infographics In Cultivating Mindset Behaviors**. Social Psychology of Education, pp.1-28.
- Collins (2022). Collins Dictionary. Available at: <http://www.collinsdictionary.com/dictionary/english/social> inclusion (Accessed: 24 March 2022).
- Creswell, J., 2007. **Qualitative inquiry and design: Choosing among the five approaches**. Sage Publications, pp. 1–416.
- Cronje, J., 2020. Towards a new definition of blended learning. **Electronic journal of e-Learning**, 18(2), pp.114-121.
- Dangwal, K.L., 2017. Blended learning: An innovative approach. **Universal Journal of Educational Research**, 5(1), pp.129-136.
- Derler, A., 2019. **Growth Mindset Culture**.
- Dhawan, S., 2020. Online Learning: A Panacea In The Time Of COVID-19 Crisis. **Journal of Educational Technology Systems**, 49(1), pp.5-22.
- Dweck, C.S. and Yeager, D.S., 2019. **Mindsets: A View From Two Eras**. *Perspectives on Psychological science*, 14(3), pp.481-496.
- Gachago, D., Bali, M. and Pallitt, N., 2020. No size fits all: design considerations for networked learning across contexts in higher education. In *Proceedings of the Twelfth International Conference on Networked Learning*. pp. 128-138.
- Gachago, D., van Zyl, I. and Waghid, F., 2021. **More than delivery: designing blended learning with and for academic staff**. *Creating Effective Teaching and Learning Spaces: Shaping Futures and Envisioning Unity in Diversity and Transformation*, p.131.
- Gibbons, G. R., 2007. Thematic Coding and Categorization. *Analyzing Qualitative Data*, 703, pp.38-56.

- Gupta, P. 'Impact of Globalization in Education'. [<http://edtechreview.in/news/2730-globalization-in-education>] 2017. 14 October 2021.
- Harrison, R., Theard, M.A., and Marr, M.C., 2021. **The Growth Mindset For Changing Medical Education Culture**. *EClinicalMedicine*, 37.
- Herrington, J., McKenney, S., Reeves, T.C. & Oliver, R. (2007). **Design-Based Research And Doctoral Students: Guidelines For Preparing A Dissertation Proposal**. Edith Cowan University Research Online. Retrieved from <http://to.edu.au/ecuworks/1612>
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *Educause Review*, 27.
- Hokor, E.K., 2022. Integration of critical thinking and reasoning skills into lessons through block factor games for finding factors of a number. **Journal of Mathematics and Science Teacher**, 2(2).
- Jensen, E., 2005. **Teaching with the brain in mind**. Second edition. Alexandria, VA: Association for Supervision and Curriculum Development.
- Kamins, M.L. and Dweck, C.S., 1999. **Person Versus Process Praise And Criticism: Implications For Contingent Self-Worth And Coping**. *Developmental psychology*, 35(3), pp.835–847.
- Kamins, M.L. and Dweck, C.S., 1999. Person versus process praise and criticism: implications for contingent self-worth and coping. *Developmental psychology*, 35(3), p.835.
- Kennedy-Clark, S., 2013. Research by Design: Design-Based Research and the Higher Degree Research student. **Journal of Learning Design**, 6(2), pp.26-32.
- Kirkwood, A. and Price, L., 2014. Technology-Enhanced Learning And Teaching In Higher Education: What Is 'Enhanced' and How Do We Know? A Critical Literature Review. **Learning, Media and Technology**, 39(1), pp.6-36.
- Knowles, M.S., 1975. **Self-Directed Learning**. New York: Association Press.
- Knowles, M.S., Holton III, E.F. and Swanson, R.A., 2014. **The Adult Learner: The Definitive Classic in Adult Education and Human Resource Development**. Routledge.
- Kolb, D.A., 1984. **Experiential Learning: Experience As the Source of Learning And Development**. Englewood Cliffs, NJ: Prentice Hall.

- Kolb, D.A., 2015. **Experiential Learning: Experience as the Source of Learning and Development**. 2nd ed. Upper Saddle River, New Jersey: Pearson Education, Inc.
- Langer, E.J., 2016. **The Power Of Mindful Learning**. Hachette UK.
- Lazowski, R.A. and Hulleman, C.S., 2016. Motivation interventions in education: A meta-analytic review. **Review of Educational research**, 86(2), pp.602-640.
- Lim, C.P. and Wang, L., 2016. **Blended Learning for Quality Higher Education: Selected Case Studies On Implementation From Asia-Pacific**. UNESCO Bangkok Office.
- Makhoalibe, P. (2017). **Towards Design Principles for Project Artistry in Exploratory Sandpit Projects: A Design-Based Research Perspective**. The Graduate School of Business, University of Cape Town.
- Mathew, P., Mathew, P. and Peechattu, P.J., 2017. Reflective Practices: A Means To Teacher Development. **Asia Pacific Journal of Contemporary Education and Communication Technology (APJCECT)**.
- McKenzie, S., Hains-Wesson, R., Bangay, S. and Bowtell., 2022. A Team-Teaching Approach for Blended Learning: An Experiment. **Studies in Higher Education**, 47(4), pp.860-874.
- McQuirter, R., 2020. Lessons On Change: Shifting To Online Learning During COVID-19. **Brock Education: A Journal of Educational Research and Practice**, 29(2), pp.47-51.
- Medina, L.C., 2018. Blended Learning: Deficits And Prospects In Higher Education. **Australasian Journal of Educational Technology**, 34(1), pp.42-56.
- Mji, A. and Makgato, M., 2006. Factors Associated with High School Learners' Poor Performance: A Spotlight on Mathematics and Physical Science. **South African Journal of Education**, 26(2), pp.253-266.
- Moon, J., 2004. **A Handbook of Reflective and Experiential Learning: Theory And Practice**. Routledge Falmer, New York, NY.
- Munby, H., 1989. Reflection-in-action and Reflection-on-action. **Current Issues in Education**, 9(1), pp.31-42.
- Nagy, T., Sik, K., Török, L., Bóthe, B., Takacs, Z.K. and Orosz, G., 2023. **Brief Growth Mindset and Mindfulness Inductions to Facilitate Task Persistence After Negative Feedback**. *Collabra: Psychology*, 9(1), p.74253.

- Nesbit, T., Leach, L. and Foley, G., 2004. **Dimension Of Adult Learning: Teaching Adults.** McGraw-Hill Education.UK.
- Ng'ambi, D., Brown, C., Bozalek, V., Gachago, D. and Wood, D., 2016. Technology Enhanced Teaching and Learning in South African Higher Education–A Rearview Of A 20 Year Journey. **British Journal of Educational Technology**, 47(5), pp.843-858.
- Nyamapfene, A., 2020. Blended Synchronous Learning and Teaching: Is This the Future Of University Teaching?. **Engineering Learning & Teaching**, 1.
- Ochara, N.M., 2013. **Linking Reasoning to Theoretical Argument in Information Systems Research.**
- Oducado, R.M., Rabacal, J. and Tamdang, K., 2021. Perceived stress due to COVID-19 pandemic among employed professional teachers. **International Journal of Educational Research and Innovation**, (15), pp.305-316.
- Oriji, A. and Amadi, R., 2016. E-Education: Changing The Mindsets Of Resistant And Saboteur Teachers. **Journal of Education and Practice**, 7(16), pp.122-126.
- Ramaci, T., Bellini, D., Presti, G. and Santisi, G., 2019. Psychological flexibility and mindfulness as predictors of individual outcomes in hospital health workers. **Frontiers in Psychology**, 10, p.1302.
- Reeves, T. C., 2006. Design research from a technology perspective. **Educational Design Research**, 1(3), pp. 52-66
- Roulier, R., 2015. **How to Concentrate Like Einstein.** Create Space Independent Publishing Platform.
- Rodgers, C., 2002. Defining Reflection: Another Look at John Dewey and Reflective Thinking. **Teachers College Record**, 104(4), pp.842-866.
- Shah, J.K., Ensminger, D.C. and Thier, K., 2015. The Time for Design-Based Research is Right and Right Now. **Mid-Western Educational Researcher**, 27(2).
- Shattuck, J. and Anderson, T., 2013. Using a design-based research study to identify principles for training instructors to teach online. **International Review of Research in Open and Distributed Learning**, 14(5), pp.186-210.

- Southern Regional Education Board. 2022. *Who is the Adult Learner? - Southern Regional Education Board*. [online] Available at: <<https://www.sreb.org/general-information/who-adult-learner>> [Accessed 1 September 2022].
- Swartz, B.C., Gachago, D. and Belford, C., 2018. To care or not to care—reflections on the ethics of blended learning in times of disruption. **South African Journal of Higher Education**, 32(6), pp.49-64.
- Thorne, K., 2003. **Blended Learning: How to Integrate Online & Traditional Learning**. Kogan Page Publishers.
- Titus, S., 2016. **Towards a social constructivist game-based learning model: a case of using digital games in sports studies in South Africa**.
- Turner, S.F., Cardinal, L.B. and Burton, R.M., 2017. **Research Design for Mixed Methods: A Triangulation-Based Framework And Roadmap**. *Organizational Research Methods*, 20(2), pp.243-267.
- Tyng, C.M., Amin, H.U., Saad, M.N. and Malik, A.S., 2017. The influences of emotion on learning and memory. **Frontiers in psychology**, p.1454.
- Tzavara, D., 2021. **‘From emergency remote teaching to strategically embracing online learning’**, in van’t Land, H., Corcoran, A., and Iancu, D.C (eds.) *The Promise of Higher Education: Essays in Honour of 70 Years of IAU*. First Edition. Switzerland, AG: Springer Nature, pp.249-254.
- University of Cape Town (2022). Humanising Your Blended Classroom. Available at: <http://www.cilt.uct.ac.za/cilt/resources/humanising-your-classroom> (Accessed: 24 March 2022).
- Verkroost, M.J., Meijerink, L., Lintsen, H. and Veen, W., 2008. Finding A Balance In Dimensions Of Blended Learning. **International Journal on E-learning**, 7(3), pp.499-522.
- Vogel, S. and Schwabe, L., 2016. **Learning and memory under stress: implications for the classroom**. *npj Science of Learning*, 1(1), pp.1-10.
- Wikipedia Contributors (2023). Deconstruction. [online] Wikipedia. Available at: <https://en.wikipedia/wiki/Deconstruction#Application> [Accessed: 18 March 2023].
- Yazan, B., (2015). **Three Approaches to Case Study Methods In Education: Yin, Merriam, And Stake**. *The qualitative report*, 20(2), pp.134-152.

Appendices

Appendix 1 - Participant Interview Questions

Please answer the following questions to the best of your ability and understanding.

1. How did the pandemic affect your approach to teaching?

P1: “We had to use WhatsApp but not all students had access to phones or the internet, so they shared phones with family members. So, we decided to prepare the lessons using the smart board in the classroom that I have been using for my lessons prior to the pandemic, so I acted as a trainer to my colleagues during this time because they didn’t know how to use the technologies. The lessons were recorded on the smart board and then uploaded onto CDs and memory sticks, then delivered to the student homes. Whilst I prepared my lessons then my colleagues would watch and learn. If learners were struggling with the lessons at home, then they’d communicate with me via WhatsApp. I am unsure though if the learners really learnt during this time when they were isolated, I can only assume that they did. Learners and their families experienced personal problems during this isolated time so I opted to listen and tried to provide solutions where I could. I also checked in daily with all my learners to see if they were fine.”

P2: “It affected my personal life, so I had to readjust and re-prioritise to my current situation because there was uncertainty during the pandemic. The situation required me to adjust and look at the reality that there is not just classroom teaching and there is online teaching available as well and the challenges concerning administrative work processes and content adjustment. There was no direction given so we had to find our own personal view and adjustment. It was an experience that shifted my perspective on the subject matter, the classroom interaction, the engagement with the available digital tools on how to use it appropriately for the reason it was used. Even though there was an online presence already available, it was never used to its fullest extent because most colleagues preferred the classroom teaching so the situation allowed me to approach my teaching approach with a different perspective to realise that I cannot upload too much content online because it will overwhelm students. It took some effort because I had to look at how the content can be used. This was a process of active experimentation through trial and error to be able to extract content that will be usefully transmitted via the online system. It required reflection and some deep learning at the time to be able to adjust and find better solutions to transmit the content to students without overwhelming the students. You will find that the whole

idea of the blended learning concept needed a new set of skills that I required. I had to learn to master the LMS system and my subject content delivery. During this time, I reached out to students more often to see how they are coping and doing. During this time, I started having a closer connection with my students because I had a closer interaction with them.”

2. What challenges arose for you during the pandemic?

P1: “All the learners do not own smartphones, so they used their family members at times. We had to use the technologies, like the smart board but educators were not trained to use it as leadership did not train anyone. I used the technological resources for my teaching prior to the pandemic, which I learnt to use on my own. So, I took the initiative to train my colleagues using the smart board. One of my colleagues was very despondent as she did not see the benefit of using the technologies in her practice, she was also feeling depressed at the time, so I constantly spoke with her separately from my other colleagues to motivate her as she needed constant reassurance and needed upliftment. Separate from the teaching, there were many problems that occurred with distressful colleagues, and I had to be available to listen non-stop and to motivate them. I had to remain strong for my colleagues because I took on the role as an informal leader because management didn’t show interest and we were not treated well.”

P2: “The administration increased when we shifted to online and there was an increasing interaction with my pc. “

3. What is your understanding of blended learning (BL)?

P1: “There are so many definitions of blended learning. But according to my understanding blended learning is the combination of using technologies and face-to-face teaching instruction. The technologies are used to support the face-to-face teaching method to make teaching more meaningful. So, it is used to improve the educator’s teaching process and to help with making learning more interactive and to improve the visual representation of information. The educator also acts as a facilitator during blended learning by guiding the learner through the learning process and is also empowering.”

P2: “There is an actual classroom and there is a virtual classroom. Blended learning to me entails the human component which is in the actual classroom and digital component which is the virtual classroom. It is an extension of skills required because you need to think

differently about how you are going to approach your content because you need to find context as well. It requires you to have digital skills and an understanding of the software platform and it requires you to adjust to the curriculum, and it is an adjustment of how the information is transmitted and transferred. If you are not a digital avoidant, you won't find it difficult to shift to a blended learning environment, so you need to like to experiment. But if you are avoiding or resisting to work with the digital tools it will be difficult for you to adjust. The entire process of the digital system is that you need to experiment and be hands-on. Ultimately blended learning is about the educator to shift their roles as an instructor and as a facilitator, it is about having empathy with the students and valuing the students. There must be an engagement with students. Blended learning is an active hands-on approach."

4. Why do you think some lecturers are struggling to use technologies as an enabler into their teaching and learning practices?

P1: *"It is because they may not know how to use the technologies because they were not trained adequately to use it. They might also not see the benefit of using the technologies in their practices as I have experienced with my colleague. Lecturers might also be overwhelmed with so many job responsibilities and technologies keep changing so it seems too overwhelming to learn it because then a new Learning management system may be integrated that they must learn again and learning the new technologies seems time consuming and stressful because there are too many expectations placed on us. Leadership or management is also not playing a role to support the educators to be well-trained to use the technologies into their classrooms and to improve classroom practices. So, I think everything boils down to the leadership to lead the initiative to empower educators and train them to use the technologies effectively but if leadership is not interested that many educators will not see the benefit of using the technologies."*

P2: *"Because they are lazy to think beyond the point that they are currently doing. Some educators think that it is above their roles and that it is meant for administrators. If you learn in a certain way and you were taught a certain way which is rote, and it is all about using your memory and the student provides the same information as it was transferred to them then you will not see the use of using the technologies in your classroom. They are losing sight that the learning process should be improved for the learners. Some educators also feel that it is too much work to use and learn the technologies and they found a sense*

of comfort to teach in a rote process. There is a fear of change or resistance. Some educators have the fear of making mistakes in front of the students when using the technologies, because they feel that lecturers should know more than students.”

5. How would you support adult learners to adapt to a blended learning process?

P1: *“I would do training with a small group, observe if learners are struggling and should they struggle, I will speak to them separately and listen to the learner as to why the person may be struggling and support the learner with finding ways to overcome the perceived obstacles. Clarity needs to be provided as to why blended learning should be used and why technologies should be integrated into practices. Also, everyone should be brought to the same page of understanding. Sometimes some learners need that extra support and patience to understand concepts and to understand why it is important to use technologies. With my experience during lockdown I have noticed that sometimes people need to build up that self-confidence of using technologies, they need that extra support to use the technologies separately and at times they may not feel comfortable to use the technologies if they are still unsure about what to do so they would put up a defence and make many excuses as to why there is no need to use technologies in the classroom. But when people’s minds are cleared from their fears and they are reassured constantly with much patience and clarity is provided on the benefits of using technologies, the benefits of blended learning and how to blend the technologies to make teaching effective then they will become more confident in wanting to integrate blended learning into their programs.”*

P2: *“The blended learning concept is not a one-way concept; lecturing is a one-way concept, but blended learning is a two-way concept. The blended learning environment is mostly focused on implementing digital tools in the training process. The first thing to do is when you are assessing the situation and they are lecturers and teachers themselves, so you need to do a needs analysis to know how you need to engage with the learners. Give the information on a rote level and then create an environment which are hands-on activities, and you have to look at how you deal with learners because the pandemic affected me so I can only imagine how it affected others.”*

6. How would you propose an intervention can be designed to support adult learners to enable them to cope with any challenges that they may face?

P1: *“A training workshop for a small group. If it is a small group, then the facilitator will be able to give more attention to the participants. Tools should be provided to support educators to remain focussed and overcome their fears prior to integrating the blended learning concept because educators were professionally trained as instructors and were not trained to use technologies effectively in their practices. “*

P2: *“Coping requires a level of awareness of who you are, what you are, and what your personal worldviews are and how you see things. The challenges are your thinking, how you are thinking. how you use your mind, your emotions, how you go about self-regulation and manage yourself, how to prioritise your work and types of decisions you make more often. So firstly, I will design a training needs assessment and analysis to gauge where people are at on the concepts of emotional assessment, stress management, how they deal with work challenges and personal challenges and how they have been dealing with these challenges so far. The assessment is on how far they are and where they are with their thinking and have they observed their thoughts, and have they opened themselves up on observing themselves on how they are thinking, teaching, reacting, their behaviours. I would assist people if they are aware of what they are doing. “*

7. What contributes to the failure or success of professional development of lecturers in the Higher Education setting?

P1: *“I think that failure or success is predicted according to people’s state of mind at the time during the training process. When people are in a negative state of mind or don’t see the meaning of doing or using something in their teaching practices then they will not really learn. The environment must be created for people to feel comfortable to be able to approach the trainer. The trainer must act as a facilitator, he or she should be able to guide people step by step on the process and be an empowering individual. Explicit clarity should be provided on what is going to be learnt and the expected outcome of the learning process. The development training session should not be too long, it should meet the requirements of what should be learnt, and all activities integrated in the professional development session should be relevant and useful. “*

P2: *“Lack of Self-discipline and dedication.”*

8. What are the most important qualities expected of an educator as a facilitator of learning? Why?

P1: *“They should be willing to learn and be open to learning. They should want to improve their practices constantly. They should be empowering and know when to shift roles from the instructional mode to the facilitative mode. They should be observant to be able to see when a student is struggling to support them. They must know and understand their subject matter. They should not be distracted during teaching so that the students have their full attention, he or she should always be prepared for their lessons. The educator must be a good listener and what they say must align to their actions. They must also be willing to explore different ways of teaching to make all students understand what was being taught. As an educator I try to make learners feel comfortable to always be honest so that I can get constructive feedback for me to improve my lessons. Students can identify when we are not prepared for the lessons, and I think that they can sense when the lecturer doesn’t know what they are doing or if the lecturer seems disinterested. Students also get demotivated when the educator is disempowering and when lessons are not relevant to what should be learnt.”*

P2: *“The ability to be consciously engaged and present while teaching. Must be able to create content and contextual situations to the learning environment. Must learn to pace and lead and focus on the quality of your teaching and not the quantity, and educators have to create a space of trust. Meaning I’m teaching and conveying the content to the students and creating a sense of understanding of the information that the educator disseminated. So, educators have to create an environment not to overload students with information. First of all, a well-prepared educator will find it much easier to be engaged when they have all these abilities. I think that the awareness is the key to the educator’s interaction and the ability to establish rapport with the students but for that to come true it helps to adjust and adapt to the classroom. How the educator feels on the inside has an impact on the student.”*

9. Which coping mechanisms do you use to overcome challenges?

P1: *“I would go for walks at the beach, and I need time on my own to clear my mind.”*

P2: *“When I become aware of tension in my body, then I bring my awareness and attention to that tension to consciously breathe through it to release the tension and settle pass that. So, I become conscious of my breathing to regulate it and to remain calm, relaxed, and alert.”*

Basically, when I am tense then there is a discomfort in the body and the breaths become shorter, so I bring my attention to my diaphragm with the intention to calm my breathing and body. What is important to me is learning to manage my thoughts, emotions, and actions. Once I am in a calm state of mind then I will continue with what I was doing.”

10. How do you evaluate the effectiveness of your lessons?

P1: “I evaluate it through the performance of the students during classroom activities and the feedback I receive from them. So, I ensure that my evaluation forms are anonymous so that the learners can feel comfortable to provide constructive feedback. “

P2: “The most important thing is that you set learning objectives and then if the students meet these objectives through their understanding, then I know the lesson was effective.”

11. What is your understanding of the experiential process?

P1: “Learning is always an experience. So, the experiential process is when learning occurs through a meaningful experience. This meaningful experience is the active participation in activities. Also, reflection takes place during this time as you are able to observe and understand if a mistake is made how the error can be rectified. You are also able to think about an experience for instance a lesson that was taught in the classroom and what you have learnt there to be able to solve the current problem or activity in the classroom.”

P2: “The experiential process is the bridge between theory and practice. I believe that the learning process is an experience itself, which encompasses my perceptions, my ability to notice and observe, establishing or bringing myself in a space of quiet awareness, reflectiveness is also part of the experiential process which leads you to a deeper way of questioning and thinking. It’s not just about memorising what is known but it is the connecting and the integration of information to create different perspectives on the subject at hand. The experiential process is to move you towards producing useful and beneficial knowledge.”

12. Do you have a view on an approach to experiential process and a growth mindset?

P1: *“The growth mindset according to my understanding is when someone works towards growth on a personal and professional level, when you are positive and empowering, and able to overcome challenges or obstacles regardless of your situation. You work towards improving your abilities. You are always looking for different ways to explore to find solutions. I think that with empowering talks in small groups that people can be supported to be more positive.”*

P2: *“My understanding of the growth mindset is the openness, willingness, and readiness to learn. But a growth directed mindset is also looking for learning that is useful and beneficial. It is about self-regulation meaning I choose how I shift my thinking, what I am thinking, how I am thinking, what I am paying my attention to. Growth means ongoing change; it is changing your thinking and your actions which changes your perspectives. If I am just focusing on the problem, then I will be stuck with problems. It is not problem focused; it is solution focused. So, you shift your attention from the problem to solutions. Then there is the process of creativity that involves a thinking process and then you act on the idea. Seeing learning as the experience of my perceptions and actions.”*

Appendix 2 - Participant Post Evaluation Interview Questions

1. In which ways was the information and exercises delivered useful?

P2: *“It is very useful for me because it made me relaxed and drew my attention. “*

P3: *“I usually go for walks with my friends to destress and we have one rule not to talk about work. But I am feeling energised and distressed after all the exercises we did. The spiral exercise took me away. The blended learning concept have many interpretations, so it is interesting to hear your interpretation of it.”*

P4: *“It is very useful for me. My mind is still relaxed after these exercises. And I agree that you must check what definition of blended learning is most relevant to your study.”*

P5: *“The exercises helped with becoming relaxed. Personally, I don’t like the growth mindset concept, I think other terminologies can be used. Your definition of blended learning was definitely interesting.”*

2. What should I include or exclude from this workshop to improve it?

P2: *“I am fine with the workshop.”*

P3: *“Something I am thinking about is that maybe you should think about adding some sort of physical activity before we dive into these calming soothing activities because we tend to navigate through life through this kind of zombie-like state. So, the moment we want to get in touch with ourselves, it has to do not only with the mind but also with the appropriation of the body. We are reclaiming back our bodies so that we can attune with our minds, and I think if you do the workshop online, it would be more relevant to add physical exercises that will re-energise people before starting the workshop. You know 80 percent of our communication is through body language and we can’t convey this communication when we are online so maybe if you find something that is a little bit physical at the beginning of the workshop to make people go back to the present with their bodies and remember it all that this is me and now I am diving into this workshop and then soothing the mind, focus and centring. I have seen some simple things like people dancing even online, opening up the cameras and dancing goofy stuff, or some simple yoga postures whilst sitting in the office stuff like that.”*

P4: “Adding to P1 comments, that maybe you can find some videos online of these physical exercises and then you can let the participants do what they see on their screens. “

P5: “I think that at the beginning of the workshop to acknowledge at beginning how people feel before starting doing exercises; talking about what the feeling situation is before doing the breathing and calming exercises. Then enquiring how participants feel after doing the exercises. Also, after these exercises I am feeling far more relaxed so I am wondering if one is feeling relaxed after these exercises, can it be sustained throughout a whole day of work. And how does it work in practice.”

3. How was your experience of the ‘Design-Based Metacognitive Intervention Plan for Mindful Blended Learning in University Education of South Africa’?

P2: “It was useful for me.”

P3: “I was sitting in the passenger seat on my way home whilst connecting to the workshop, so when I arrived at home and opened my eyes in the middle of the exercise, I only realised that I was home. I was like a zombie, I thought that I was still at home only to realise a few minutes later that I was at his physical space of home.”

P4: “This workshop was more practical, because as a facilitator you have given us an opportunity to actually engage in those activities that you have planned and eventually, we could feel how it is to engage in those activities. For example, before the start of the activities really, I was feeling exhausted and all that but by the time I engaged in those activities I felt a bit relaxed and calm and so I really commend you for that for the activities because it made me want to be part of the workshop. I like the fact that it was practical and not just the theory side of things.”

P5: “Metacognitive is to bring attention to the current compared to the later stage after going through an awareness program. The activities are definitely making me feel relaxed, so it has been very nice to go through the facilitation process.”

4. What has changed for you during this experiential blended learning workshop? Would you use this experience of this tool for your personal development regarding blended learning or for any reason?

P2: *“I was really exhausted, and I am relaxed now. The exercises are useful to me and might use some of the exercises in my training. “*

P3: *“I was tense and feeling stressed before the workshop but after doing the exercises I feel more energised and distressed. For me I think it will be interesting to see what would happen if I tried these exercises with the night students face-to-face because most of them are coming from work, stressed out. they take some time actually to dive into what we are discussing; they take some time to be in the classroom so it will be interesting to try this with them.”*

P4: *“I like these exercises. I was exhausted before entering the workshop but after the practical exercises I feel a bit more relaxed. I do both face-to-face and online workshops. I also think that I will use it as an ice breaker, perhaps one of them at the beginning of my workshops.”*

P5: *“I agree with Lungile and Vali in the sense that it definitely does bring attention. It is an interesting icebreaker and attention getter for online sessions. I am not sure when I think about blended learning or integrating blended learning how this will necessarily work. Maybe someone else can figure out how this tool relates to blended learning or integrating blended learning. But definitely I can see this is a tool for attention. After the exercises I am feeling far more relaxed. So, if the tool is used before the workshop, then I can easily see how this works if the tool is used prior to the blended learning training to get people’s attention to the present. It is a more generalised tool for gaining attention for a presentation, for a specific intention intervention during training of the same training chat online for the growth mindset training.”*

Appendix 3 - Participant Information Sheet

Dear _____,

‘Cultivating a Growth Mindset within a Blended Learning Environment at a University in South Africa: A Design-Based Research Study’.

I, Fahiem Titus, am currently employed as an academic administrator at the University of Cape Town. I am currently doing a master’s in educational technology and ethical clearance has been authorized to attend to the data collection process of the study. I would like to ask your permission to consent to participate in my study.

The purpose of my study is to explore the potential of a blended learning (BL) process in response to improving adult learning experiences in teaching-and-learning at South African Higher Education Institutions (HEIs). Professional and Skills development of educators are crucial to the transitioning process from face-to-face to the blended learning (BL) environment. The main objective of this research is therefore to understand the existing knowledge of the BL process. Thereafter, the study aims to explore possibilities for support of educators at HEIs to adapt to the BL process using a growth mindset design.

I will be using a design-based research (DBR) approach in collecting qualitative data. The data collection process will occur in phases. Data collection will be in the form of a semi-structured interview to explore how educators make sense of their blended learning experiences and how they have adapted to this environment. The Interview is expected to last for approximately 30 minutes. Data will also be gathered through a workshop for approximately 90 minutes. An online platform will be used for the workshop for flexibility, as participants do not need to be physically located. The workshop will use a blended learning approach. A post evaluation interview will be conducted. The post evaluation interview will potentially last for 30 minutes. The interviews will be audio recorded which will be accessible to participants.

Participation is voluntary and the confidentiality of your participation is guaranteed. You may withdraw permission of consent to participate as part of the research at any time.

Please could you respond regarding your participation in the study by completing the informed consent form attached below. You are most welcome to contact me telephonically or via email, should you have any further questions regarding this research study. My email address is

fahiema.titus@uct.ac.za and Dr Catherine Hutchings (Supervisor) can be contacted on catherine.hutchings@uct.ac.za. Thank you, for your time and participation.

I look forward to hearing back by

With appreciation,

Yours Sincerely,

Miss Fahiema Titus

Appendix 4 - Participant Informed Consent Form

Research Project Title: **Cultivating a Growth Mindset within a Blended Learning Environment at a University in South Africa: A Design-Based Research Study**

I understand that my participation in this study is voluntary, and that confidentiality will be maintained. I can withdraw my participation at any time without prejudice.

I consent to	YES	NO
1. Being Interviewed online to collaborate in phase 1		
2. Participating in an intervention online and participating in the post evaluation interview after the intervention		
3. Audio recording of interview		
4. Researcher using written feedback for document if required for analysis purposes should participant produce any during intervention		
5. Audio recording of intervention		

Participant Name:

Signature:

Date: