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Learning from the educators' perspectives: A phenomenographic study of the lived experiences in learning of tertiary educators in Australia

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Abstract

Modern researchers argue that the purpose of teaching is to create opportunities for learning. Yet, when asked for their observations about learning in professional contexts, tertiary educators in this study instead talked about teaching practices. In effect, in their professional context most educators implicitly equated learning with teaching. In contrast, when asked for observations of learning in a personal context, these educators focused on their insights about learning. Educator responses indicated that the most significant and powerful impactors observed in their own learning were not being leveraged within their professional practice. This was due to their perceived regulatory and institutional pressure to cover the curriculum instead of focusing on learning.

Eighteen semi-structured, face-to-face interviews of approximately one hour were conducted with volunteer educators. These educators worked on accredited tertiary education programs offered in public and/or private institutions in New South Wales, Queensland, Victoria, or South Australia. Transcripts were analysed using phenomenographic iterative data analysis.

This study breaks new phenomenographic ground in three significant areas. First, in revealing tertiary educators' markedly different observations regarding learning as educator, mentor, and learner. Second, in capturing tertiary educators' understandings of facilitating and inhibiting factors affecting learning. Third, in the study's novel grounding in the experiential world of the educators. The study also has implications for course design and educator development, if we are to evolve from lecturer-centred to learning-centred tertiary education. A broader finding is that learning at its core is a change process. Therefore the role of tertiary educators may be better conceived of as specialist learning leaders.

Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

(Signed) Date: February 14 2019

Ethics approval number: 5201600775

Acknowledgements

I would like to thank my supervisors, Associate Dean Mitch Parsell and Dr Penny Van Bergen for their advice and support during the development of the study. Mitch was enthusiastic and open throughout the process. This was a relief after hearing so many horror stories about supervisors. Mitch, you are intelligent, open, a learner, and a great supervisor! It was also great to be guided by Penny's precision and detailed feedback which improved the expression and focus of this study. I would also like to acknowledge the efforts of those involved in providing feedback: colleagues, friends, and family members who engaged in discussions about learning over the years of this study.

Macquarie University provided a scholarship via the Research Training Program which was welcome relief from needing to undertake full time work alongside the PhD process.

This study would not have been possible without the generosity of the educators who gave of their time and expertise in the interviews. Their insights were built from reflections and their commitment to the learners with whom they work.

A research process such as this does not occur in a vacuum. It impacts on those around the researcher. The unrelenting support of Noel Chinchen, my partner in life, has gotten me through the highs, the lows, and the in-betweens of this study. A better supporter could not be found: editor, researcher, administrator, one who possesses a critical mind and highest capacity for deep thought of anyone I know. My adult children and their partners have also been involved in supporting me. Thanks to all of them for the various supports they provided.

My parents made unusual contributions to my PhD. Mum died years before it was even conceived. She showed me how the brain cannot learn when it is damaged, in her case by a stroke. Dad was about to be moved into a nursing home the day my PhD commenced. On Christmas morning 2015, he wandered the streets in his pyjamas due to confusion from dementia. His brain was obviously affected and his capacity to learn diminished. However, in the recesses of his fuddled mind he recalled I was studying to be a 'Doctor' and told all staff and visitors at the nursing home of this fact. Whenever medical issues came up, he told them that I was the one to speak to as I was the Doctor in the family! Both Dad and Mum showed me how important it is to respond to needs of the individual rather than applying a standard approach that ignores individual nuances.

My choice of learning as the focus of this study was influenced by my life experiences as an educator, counsellor, and passionate learner. I came to understand that learning is crucial for life and adaption to new and sometimes challenging circumstances. It is also the bedrock of teaching as the aim of teaching is the creation of learning opportunities. Over my thirty plus year career as a tertiary educator, I have seen educators who do this brilliantly, some who try exceptionally hard, some who are enthusiastic, and some who miss the mark. All have contributed to this study. The same applies to the many learners with whom I have had the privilege of working. Some have been open learners from the beginning, some took time to become open to learning, and some seemed unable to reach their learning potential. Learning about learning from them has been humbling and, for the most part, energising.

Finally, after a long stint in the field of education, working in many different settings with learners and educators, I hope this study makes a valuable contribution to a field I love with a passion.

1 Learning and tertiary educators

Learning, at its core, is a change process**.** Tertiary education, at its core, is intentional learning, and therefore an intentional change process. In some instances, ongoing changes require more knowledge than we currently possess and so there is a need to continuously learn (Treadwell, 2017). As Ormrod (2016) observed, it is our ability to learn that provides humans with increased capability, flexibility, and adaptability in our environment. And while the rate and types of change may alter, change is a constant in human experience. D. A. Kolb (2015) argued that humans can adapt to change both reactively, by fitting in with their physical and social worlds, and proactively, by creating and shaping these worlds. This adaption can be achieved through organic informal or intentional formal learning (Ormrod, 2016).

Educational institutions focus on intentional formal learning. In Australia tertiary educators conduct their formal learning-related work within educational institutions, some of which are funded by the Commonwealth Department of Education and Training. The *Corporate Plan for the Department of Education and Training 2016–2020* (Department of Education and Training, 2016) emphasises the creation of learning in its vision of "opportunity through learning" that is achieved through "world-class tertiary education and research" (p. 6). Further, the Department stresses the "fundamental importance of education [as] central to individual opportunity, economic growth, productivity and innovation" (p. 9). In this way, tertiary education has a central role to play in the lives of individuals and the broader community in Australia and beyond.

Intentional formal learning in tertiary education can be categorised into the four areas of scholarship identified by Boyer (1990). These four domains of scholarship are discovery, integration, application, and teaching. They are interrelated and impact on each other.

Boyer's first domain, *discovery*, is research-aligned learning as it focuses on new knowledge or extending existing knowledge in new ways (Boyer, Braxton, Ream, & Moser, 2016; Shannon, 2018). Discovery scholarship involves questions such as: What is known? What is yet to be found? How do we approach it (research design)? What tools do we have or need to create to find it (research methods) (McCaslin, 2014)?

While discovery focuses on new learning, Boyer's second domain, *integration* focuses on making connections between existing learning. The aim is to provide broader transdisciplinary perspectives and potentially bring new insights to bear on original research (Boyer et al., 2016; Shannon, 2018). Critical analysis is used to answer questions such as: What do the findings mean? What is left out of the research design? Is it possible to interpret what is already

discovered in ways that provide more comprehensive or useful understanding (McCaslin, 2014)?

Boyer's third domain, *application*, involves the use of specialised learning to address broader societal or professional issues (Boyer et al., 2016; Shannon, 2018). It is in application that theory and practice most widely interact in answering questions such as: How can knowledge be responsibly applied to these issues? How can knowledge be helpful to people and institutions? How does effective practice inform, challenge, change, and extend existing theory (McCaslin, 2014)?

Boyer's fourth domain, *teaching*, involves the mastery of relevant knowledge (content) as well as using creative and effective ways of presentation so others might understand (process) (Boyer et al., 2016; Shannon, 2018). Teaching focuses on questions such as: How can knowledge be best modelled in engaging ways, and best learned? How can knowledge be best used to cultivate critical and creative thinking? How can knowledge be best used to generate a sense of high self-efficacy (McCaslin, 2014)?

This fourth domain has been extended by Rice (1991), a colleague and collaborator on Boyer's (1990) book, who added a third key driver of effective education beyond content and process: what we know about the *nature of learning* itself. This involves scholarly inquiry into how learners make meaning from what the educator says or does. Tertiary educators in this study were all involved in learning and teaching scholarship.

Each form of scholarship requires deep engagement with learning. Therefore, when engaging in scholarship, tertiary educators are specialising in learning. Each form of scholarship centres on the learning of self, others, the profession, and the community. In this way, engagement in scholarship is engagement in leadership. Therefore, tertiary educators engaged in scholarship are specialist learning leaders.

From the late 20th century to the present, tertiary education in Australia has undergone significant changes that have impacted how it meets its primary goal of creating intended learning. These include: regulatory requirements (Australian Qualifications Framework Council, 2013b; Australian Skills Quality Authority, 2016; Tertiary Education Quality and Standards Agency, 2013); the introduction of information and communication technologies (ICTs) (Balacheff, Ludvigsen, Jong, Lazonder, & Sally, 2009; Garrison, 2011; Laurillard, Oliver, Wasson, & Hoppe, 2009; Siemens, Gašević, & Dawson, 2015); massification leading to changed demographics (Dobson, 2001; Guri-Rosenblit, Sebkova, & Teichler, 2007; Karmel, 2011; Shaw, 2005); and the movement towards a learning-centred approach (Barr & Tagg, 1995; Hairon &

Chai, 2017; Kember, 2008; Kember & Kwan, 2000; Nygaard & Holtham, 2008). Each one of these issues and their impacts will be discussed in more depth in Chapter 2 (Context of the tertiary educator in Australia). The context and work of tertiary educators in Australia have altered significantly since the 1990s (Beutel, 2010). In light of the impact of these changes it is timely to revisit learning in the tertiary education context.

Tertiary educators in Australia are engaged in a variety of learning activities. Their learning may be for their roles as professionals in their area of practice, as professional educators, as peers and mentors, and as learners in their lives beyond their professional roles. Tertiary educators are no different from other professionals in their need for continuing professional development (Bexley, James, & Arkoudis, 2011). Billett et al. (2012) argued that professional development "involves sustaining, extending and advancing the existing occupational competencies of working adults" (p. 11). The requirement for professional development may include current knowledge of industry practice as well as advances in theory. Tyler and Dymock (2017) contended that keeping current, given its complexity, can be challenging. More specifically, professional tertiary educators are assumed to have expertise in both relevant content as well as learning and teaching (Boyer, 1990; Hutchings et al., 2013; Shulman & Hutchins, 1997). Tertiary educators are, therefore, involved in complex areas of designing, supporting, and assessing learning of the learners with whom they work (Biggs, 2014; Gibbs, 2010; Hairon & Chai, 2017; Martin & Mahat, 2017). Töytäri et al. (2016) argued that educators' learning may result from individual efforts, collegial/peer or team/group interactions, or from beyond the educational institution. Part of the collegial/peer approach may specifically include being a mentor to other educators (Ambler, Harvey, & Cahir, 2016; Barczyk, Buckenmeyer, & Feldman, 2010; Parpala & Lindblom-Ylänne, 2007).

In summary, tertiary educators are centrally engaged in both their own learning and the learning of others. Therefore, their insights into learning can provide further understanding of this complex phenomenon. These insights, their variable ways of experiencing and understanding learning, are the focus of this study.

1.1 Study overview

This study has emerged from my deep interest in learning and teaching over the past thirty years. It has come to fruition at a time in my own career where I can look back with a broad viewing lens, encompassing both the theoretical and practical realms. I have experienced the work of tertiary educators from the 'inside' having been involved in tertiary education since the mid-1980s. This has involved working directly with thousands of learners undertaking

accredited studies. Working with hundreds of other tertiary educators as a peer, a mentor, and in various roles in academic professional development, has strengthened my interest in learning. As I researched the topic of learning, gaps in the literature appeared. From these gaps emerged the key research question:

> *What are the qualitatively different ways in which tertiary educators have experienced the phenomenon of learning?*

This study has two aims. The first aim is to capture the qualitatively different ways that tertiary educators have experienced learning as professional educators, learners, and mentors. The second aim is to identify the implications of the findings from this study for the theory and practice of learning in tertiary education in Australia and beyond.

1.1.1 Research approach

In order to capture the anticipated qualitative variations in the way tertiary educators have experienced learning, a phenomenographic approach (Marton, 1986) was utilised. This involved gathering a sample of tertiary educators who volunteered for the study. Emails were sent to a number of educational institutions requesting voluntary participation in the study. Semi-structured interviews of approximately an hour were conducted with eighteen tertiary educators in four states in Australia.

1.1.2 Significance of this study

This study addresses the gap in the phenomenographic literature regarding tertiary educators' lived experiences in learning. Although tertiary educators' experiences offer great potential for insights into learning, phenomenographic research into these experiences to date has been sparse, and those conducted were narrow in scope. For example, professional educators' learning experiences have been examined through the lens of their academic growth and development by Åkerlind (2005a) and Töytäri et al. (2016). Additionally, Light and Calkins (2014) conducted a study of tertiary educators' comparisons of their own learning in their professional roles to that of student learning. Other phenomenographic studies focused more directly on the question: '*What is learning?*' Chapter 4 (Design and theoretical underpinnings of this study) provides more detail. The results from these studies are discussed in Chapter 3 (Critical analysis of relevant learning literature) and Chapter 6 (Linking tertiary educators' experiences of learning to theory and context).

Phenomenographic inquiries into the qualitatively different ways that tertiary educators have experienced learning from the perspectives of being a professional educator and learner have been absent in the literature to date. Similarly, there has been a lack of phenomenographic

inquiry into tertiary educators' observations of factors that facilitate and inhibit learning. Tertiary educators continually experience these factors first-hand in both personal and professional settings. No phenomenographic inquiries into learning from the mentor's perspective were located in the literature, thereby revealing a further research gap. These new areas of research are shown in Figure 1.1 (New insights into learning from this study).

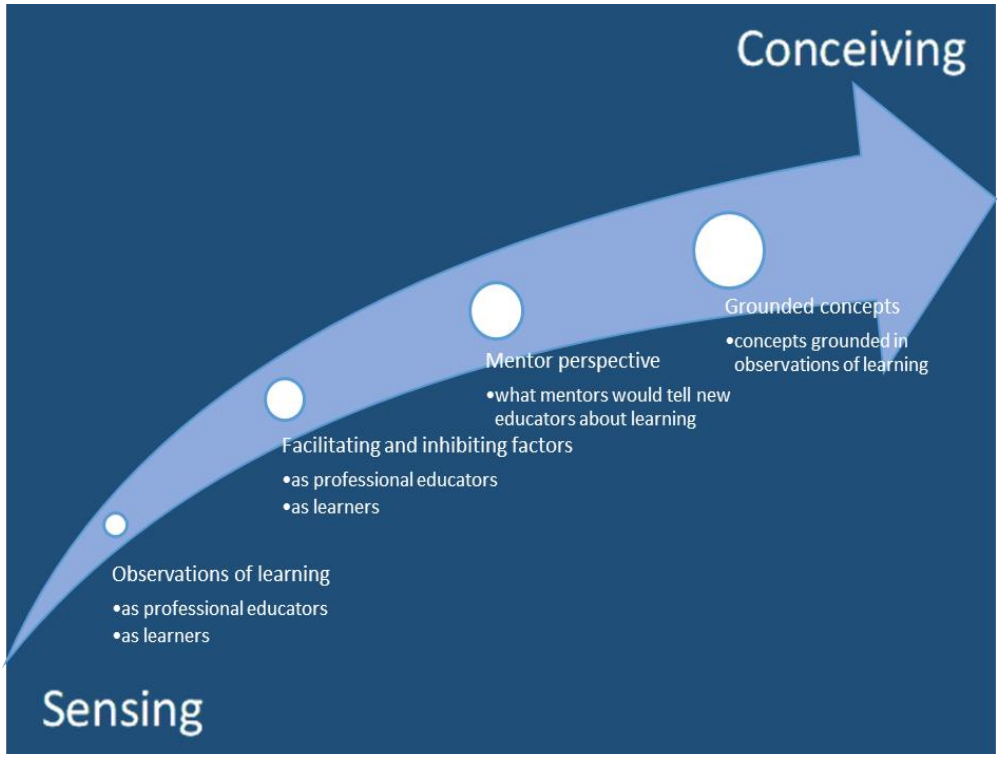

Figure 1.1: New insights into learning from this study

This study offers the first phenomenographic inquiry into learning grounded in tertiary educators' experiential observations. In previous phenomenographic inquiries, the interview questions and context encouraged conceptual rather than observational analysis, inducing a theoretical, definitional perspective (see phenomenographic studies listed in Table 3.4: A sample of phenomenographic studies focused on learning as a phenomenon). This study seeks specific observations of aspects of learning sourced from both within and beyond the tertiary educators' professional roles.

This study offers the first phenomenographic inquiry into the factors which tertiary educators have observed to facilitate and inhibit learning. Factors that facilitate or inhibit learning are

explored through the perspectives of the role of professional educator as well as the educator as a learner.

This study offers the first phenomenographic inquiry into what tertiary educators would discuss about learning when mentoring new educators. Mentoring is of significance as new tertiary educators are often accultured in this manner. Whereas the observations of learning from the roles of professional educator and learner have a past temporal focus, the mentor role flips this temporal focus into the future. Such switches in temporal focus may induce movement from conceptual comprehension to transformation through action via reflexivity (Feucht, Lunn Brownlee, & Schraw, 2017).

This study offers the first phenomenographic inquiry into tertiary educators' concepts of learning grounded in experiential observations. Through careful priming, tertiary educators in my study are led to reflect on their experiences, and to build their concepts of learning, bottom-up, on this experiential foundation. Prior phenomenographic studies seeking conceptions/concepts of learning lacked this extensive experiential priming. As a result, I argue, these prior phenomenographic inquiries into '*What is learning?*' encouraged theoretical, definitional, top-down responses. That is, whereas these prior studies drew on espoused theory, my study drew on theory-in-use for the purposes of articulating conceptions/concepts of learning. The outcome spaces of my study are compared and contrasted with the outcome spaces of these prior phenomenographic studies on learning. This critical comparison highlights fundamental differences between the phenomenon of learning as understood theoretically, and the phenomenon of learning as understood by tertiary educators, both practically and experientially.

1.1.3 Structure and reporting of this study

This study comprises seven chapters:

Chapter 1: Learning and tertiary educators

Chapter 2: Context of the tertiary educator in Australia

Chapter 3: Critical analysis of relevant learning literature

Chapter 4: Design and theoretical underpinnings of this study

Chapter 5: Tertiary educators' experiences of learning

Chapter 6: Linking tertiary educators' experiences of learning to theory and context

Chapter 7: Applying study outcomes to learning in tertiary education.

Chapter 1 (Learning and tertiary educators), this chapter, introduced this study which adopts a phenomenographic approach to explore the research question: *What are the qualitatively different ways in which tertiary educators have experienced the phenomenon of learning?* The significance of the study is that it addresses gaps in the phenomenographic literature related to tertiary educators' lived experiences in learning from the perspectives of professional educator, learner, and mentor.

Chapter 2 (Context of the tertiary educator in Australia) focuses on the context for this study—the tertiary educator in Australia. Tertiary education has had some dramatic changes between the late 20th century and now. These include changes to regulatory requirements, the introduction of information and communication technologies, massification leading to changed demographics, the movement towards a learning-centred approach to tertiary education, and the purpose of tertiary education. Each of these areas is examined in some detail as they have profoundly impacted tertiary educators.

Chapter 3 (Critical analysis of relevant learning literature) critically analyses learning literature relevant to this study. The different disciplines, paradigms, and schools of thought, have both added to and confused the understanding the complex phenomenon of learning. In an effort to clarify the meaning of learning, this chapter examines a variety of definitions of learning, and analyses the main learning theories utilised by educational institutions. Prior phenomenographic studies of learning are then explored.

Chapter 4 (Design and theoretical underpinnings of this study) discusses the theoretical underpinnings that influenced the design of this study to explore the phenomenon of learning from the tertiary educators' perspectives. The discussion includes a detailed examination of

ontology, epistemology, methodology, and methods. Research protocols and sampling are discussed in detail. Special attention is paid to the rationale for the questions, iterative data analysis, and presentation of the findings in this study.

Chapter 5 (Tertiary educators' experiences of learning) presents the findings of this study resulting from the phenomenographic iterative data analysis. Outcome spaces are used to capture what educators noticed about learning in their roles of professional educator, learner, and mentor, including factors they have observed which facilitate and inhibit learning. The final outcome space captures what learning means to educators, grounded in the context of these experiential reflections.

Chapter 6 (Linking tertiary educators' experiences of learning to theory and context) links the findings of this study with other phenomenographic studies on learning. The findings extend the existing phenomenographic literature. Whilst the study findings in this chapter identify qualitatively different ways that educators experience learning, these did not capture all the findings of significance. Therefore, extended findings are also captured within this chapter. Connections are also drawn between this study, its results, and the broader literature on learning.

Finally, Chapter 7 (Applying study outcomes to learning in tertiary education) connects the study findings to learning in tertiary education. This involves a broad discussion of the study's aims, findings, contributions, limitations, and areas for further research.

1.2 Chapter summary

This chapter provided the background to this study. The study focuses on the complex and poorly understood phenomenon of learning through the perspectives of tertiary educators. These educators are immersed in learning from a variety of perspectives and, therefore, are perfectly placed to provide valuable insights on learning. A phenomenographic approach is adopted to address the key research question: *What are the qualitatively different ways in which tertiary educators have experienced the phenomenon of learning?* The significance of this study is its insights into the phenomenon of learning from the tertiary educators' perspectives. This includes being the first phenomenographic study to provide tertiary educators' insights into three areas: understanding of learning grounded in experience rather than theory alone; factors which facilitate or inhibit learning; and the discussion of learning in mentoring. The next chapter investigates the setting for this study—tertiary education in Australia.

2 Context of the tertiary educator in Australia

This study focuses on the lived experiences of tertiary educators[1] in learning. These experiences of learning have occurred in a changing context as tertiary education has been impacted by Federal Government policies that have structured and regulated the sector. The ubiquitous use of information and communication technologies has also impacted the work of tertiary educators in two significant ways. First there has been a significant push within the tertiary education sector to integrate information and communication technologies into delivery methods. Second the demand for digital literacy in the workplace has been integrated as part of the curriculum in many courses. Both of these have extended the role of the tertiary educator by requiring a level of expertise in the use of information and communication technologies. This has not been an easy integration for many educators. These changes have had an impact not just on the work of tertiary educators but also on their professional identity.

This chapter situates tertiary education in the Australian educational system and economy (section 2.1—Tertiary education in Australia). It then discusses changing demands on tertiary educators since the 1980s which have led to some 21st century tensions within tertiary education (section 2.2—Changing demands in tertiary education). The purposes of tertiary education is analysed through the lenses of the different groups and individuals and their separate ideas (section 2.3—The purposes of tertiary education). The chapter is then concluded (section 2.4—Chapter summary) and linked to Chapter 3 (Critical analysis of relevant learning literature).

2.1 Tertiary education in Australia

The Australian education system comprises three significant sectors: primary, secondary and tertiary education. *Primary* education includes pre-school education through to Year 6 where students would be approximately 12 years old. *Secondary* education covers the next six years of education which is called Years 7–12.[2] Students may leave school at the age of 15 years old (usually Year 9 or 10), however, the trend has increasingly been to encourage as many students as possible to continue to the end of Year 12 (Department of Education and Training, 2017). *Tertiary* education is post-compulsory schooling and is broadly separated into three

[1] Educator in this context is defined as any person formally recognised as being responsible for the educational activities in a given situation, including those known as teachers, tutors, lecturers, trainers, assessors, and so on. Tertiary educator is an educator in the tertiary education sector.

[2] The schools are controlled by State and Territory governments. Therefore, some variation to these years and ages occurs for primary and secondary school.

segments: Vocational Education and Training (VET); Higher Education (HE); and Adult and Community Education (ACE) (R. Harris, 2009). ACE provides a mixture of accredited and non-accredited programs in the adult and community education segment. The ACE segment is not included in this study as the programs vary considerably in intention, focus, organisations involved, and regulatory requirements. Instead, this study focuses on VET and HE segments that offer accredited qualifications which conform to the Australian Qualifications Framework (AQF) and are regulated by national bodies—for the purposes of this study these are referred to as tertiary education.

2.1.1 Demographics of qualifications in tertiary education

The Australian Bureau of Statistics (2018) reported in their May 2018 *Education and Work Australia* survey that Australians are more educated than ever before. Non-school qualifications have been attained by 66.7% of Australians aged 20–64 years old. Figure 2.1 (Attainment of non-school qualification, by sex and age groups, 2018) shows further details.

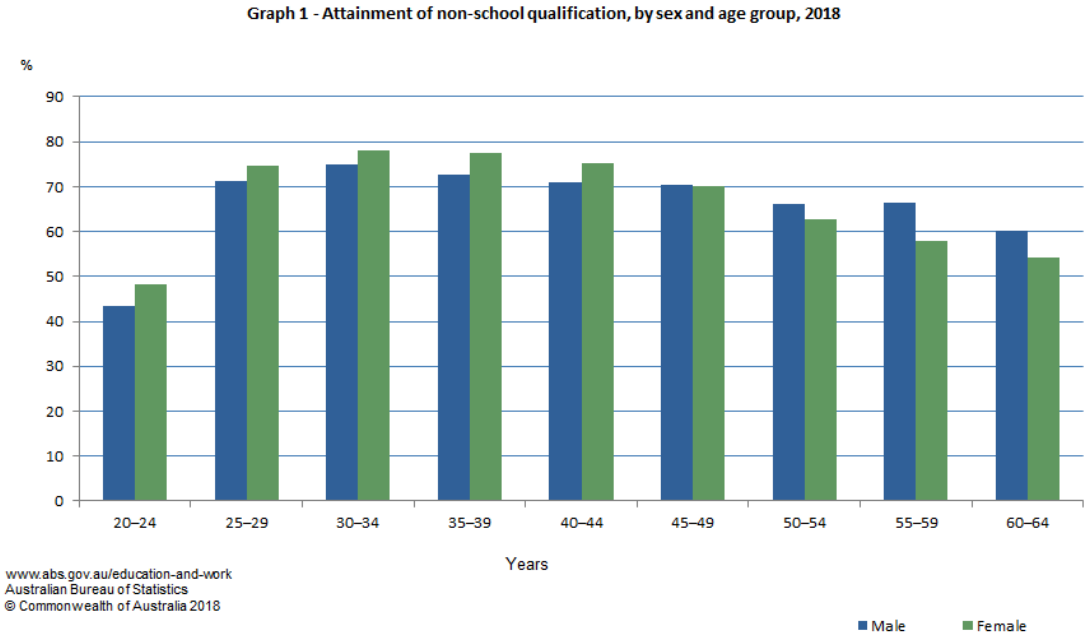

Figure 2.1: Attainment of non-school qualification, by sex and age groups, 2018

Obtaining relevant measures on VET and HE enrolments is not a trivial task. The National Centre for Vocational Education Research (NCVER) report that, in 2017, VET students in Australia as a proportion of the Australian population aged 15 to 64 years remained steady at 24.1% or 4.2 million students (National Centre for Vocational Education Research, 2018). It needs to be noted, however, that these figures are inflated by the inclusion of a wide range of learning engagements including short 'skill set' programs, and single subject enrolments, and

the inclusion of data from non-registered training providers. As such, NCVER's wider definition of VET student enrolments does not match the focus of this study which is on accredited tertiary education programs. The *2017 Student Summary* (Department of Education and Training, 2018a) reported HE enrolments have increased since 2016. An overall increase of 3.9% to 1,513,383 domestic and international students was reported. Domestic students (71.5% of all students) increased by 1.5%; overseas students increased by 10.3%. Postgraduate students increased by 6.4% while undergraduate students increased by 3%. Norton, Cherastidtham, and Mackey (2018) noted that two in five school leavers enrol in HE.

2.1.2 Demographics of current learners in formal education

The Australian Bureau of Statistics (2018) revealed its latest statistics on current enrolments in formal education in May 2018. Almost one fifth of Australians aged 15 to 64 years were currently studying. A sample of statistics for different qualification levels indicates: 41.6% completing a bachelor degree; 13.5% doing post-graduate degrees; and 12.8% studying for a Certificate III. Figure 2.2 (Persons currently enrolled in formal study, by sex and age group, 2018) shows the distribution of current enrolments.

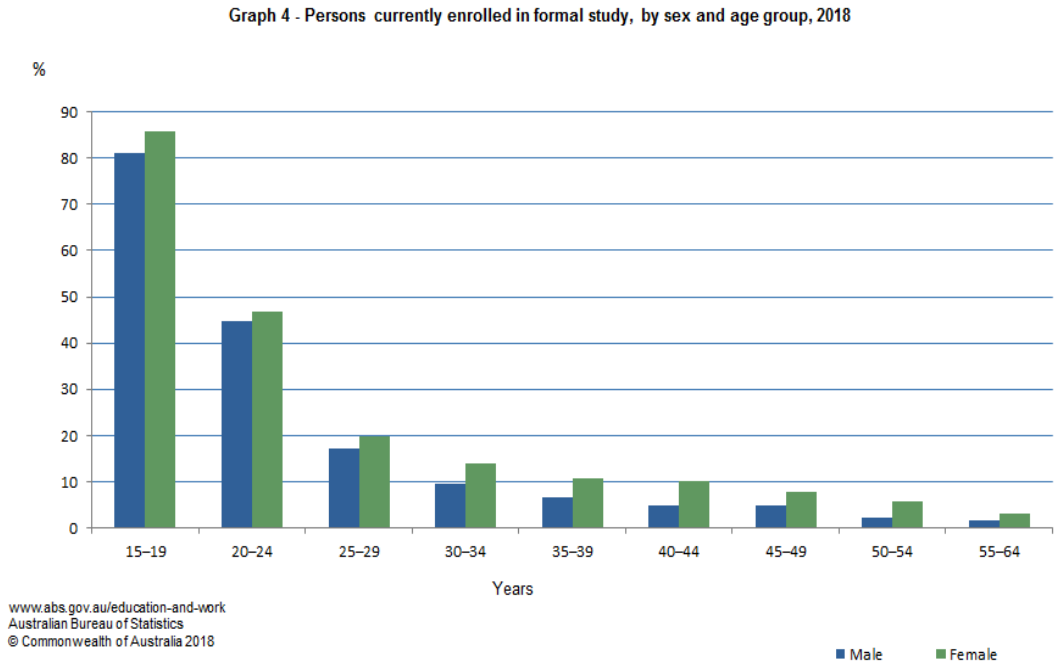

Figure 2.2: Persons currently enrolled in formal study, by sex and age group, 2018

The statistics for 15–19 years old include formal study in both school and tertiary sectors. The remainder of the age groups reflect formal study undertaken in the tertiary sector.

2.1.3 Economic contribution of tertiary education

While the Australian Bureau of Statistics provides a valuable insight into the demographics of who is studying, where and how, it does not reveal the dollar value of these enrolments. The Commonwealth Department of Education and Training (2018b) advised that international education is Australia's largest services export, and third largest export overall, contributing $30.8 billion to the Australian economy in 2017 (p. 17). In June's *Research snapshot* (Department of Education and Training, 2018c), contributions to 2017 export income were specified as HE ($20.7 billion) and VET ($5.2 billion).

In summary, tertiary education makes a significant contribution to the Australian economy. But it has a more fundamental social value than immediate income generation: it prepares learners for their future and provides businesses with skills and expertise important to their success. The Department of Education and Training (2016) positions education in its mission statement (p. 6):

> Education and training maximises the life chances and choices of every Australian. Creating opportunities to access high quality education from the early years, through schooling and tertiary settings, is central to our mission.

As explored in the next section, the tertiary education sector and the educators within it have been through major changes since the 1980s (Institute for Teaching and Learning Innovation, 2015). Choosing the 1980s onwards is for two reasons. First, a national training reform agenda was launched at this time by the Commonwealth Government of Australia. This agenda impacted both the VET and HE sectors of tertiary education. Second, I commenced my career as an educator in 1984. Many of these changes directly impacted on my work both as an educator and academic staff developer. These roles meant that I was often on the front line implementing significant changes in tertiary education throughout the late 20th and early 21st century.

2.2 Changing demands in tertiary education

Tertiary education, like any other area of the economy, is impacted by societal, political and economic changes. Changes in these areas since the late 20th century have resulted in many impacts for tertiary educators. In practice, individual tertiary educators and more broadly tertiary institutions have not responded to the changes in a homogenous manner. So in the examination of changes in tertiary education, it is important to recognise that variation in responses has occurred, something that will be elaborated upon later in this section. This

examination also draws on educational literature that shows general trends rather than the specifics of educational institutions or of individual tertiary educators within them. Its aim is to provide a general overview of the changing demands in tertiary education and the impacts these changes have had on tertiary educators.

2.2.1 The 1980s and early 1990s

The providers of tertiary education in Australia in the 1980s and early 1990s were public colleges for Technical and Further Education (TAFE) for trades and work skills, Colleges of Advanced Education that prepared teachers, nurses and the like, and public universities for preparation of professionals. A trade or undergraduate degree were historically considered enough for a career that lasted a lifetime. However, a movement towards extra qualifications, due to the changing demands of the workplace, was recognised by the Federal Government (J. S. Dawkins, 1988). Tertiary education was dominated by face-to-face delivery, although distance or correspondence learning, generally offered only via hard copy materials, accounted for some delivery. For example, in 1989 while face-to-face was about 89%, distance or correspondence was about 11% of HE enrolments (Norton et al., 2018). At this stage, no impact of the internet was experienced as it was not publicly available until 1989, and publicly not widely used before 1995.

Learning and teaching involved a teacher-centred pedagogical[3] approach which focused on transmitting information to students (Sadler, 2012). The teacher was the 'sage on stage' imparting 'correct' ways of doing and understanding (Blaschke, 2012; Sadler, 2012). The educator was the gatekeeper of knowledge whilst the learner was typically a passive recipient in HE or an apprentice who followed the experienced tradesperson under whom they trained in VET. These transmission (HE) and apprenticeship (VET) models dominated (Pratt & Collins, 2000). Knowledge was considered to be stable and something to be stored for later use (Evans-Greenwood, O'Leary, & Williams, 2015).

During this period, the National Training Reform Agenda (NTRA) emerged. This was in response to the "increasing recognition of the importance of a highly skilled and adaptable workforce in establishing and maintaining Australia's competitive advantage in the global economy" (Committee for Economic Development of Australia, 1995, p. 4). A number of economic, political, and social aspects during this time inspired this change to the face of tertiary education (Bowman & McKenna, 2016; Dumbrell, 2004). These included declining

[3] Greek: ped (child) + ágō (to lead) => pedagogy (to lead a child)

international competitiveness, youth unemployment, a monopoly of public institutions in the training market, and changing workforce requirements. The vocational education and training sector had adopted a competency-based training approach in a variety of forms prior to the NTRA. However, the form of competency-based training adopted in the late 1980s remains the basis of the current VET system. This competency-based approach emphasised learner demonstration of competency in meeting expected outcomes (Committee for Economic Development of Australia, 1995; Smith, 1999; Wheelahan, 2005).

2.2.1.1 The Australian Qualifications Framework (AQF)

The national scheme for VET, agreed to in 1992, was extended in 1995 to include VET, HE, and school education and was named the Australian Qualifications Framework (AQF) (Australian Qualifications Framework Council, 2013b). This change standardised the levels and attributes of qualifications throughout the Australian states and territories (Australian Qualifications Framework Council, 2013b). The AQF was a taxonomy of levels of qualifications, each with unique features. There were ten levels within the AQF comprising: Certificates I–IV (Levels 1–4); Diploma (Level 5); Advanced Diploma or Associate Degree (Level 6); Bachelor Degree (Level 7); Bachelor Honours Degree, Graduate Certificate, or Graduate Diploma (Level 8); Master Degree (Level 9); and Doctoral Degree (Level 10). These are shown in Table 2.1 (Graduate capabilities for levels 1-10 of the AQF).

Table 2.1: Graduate capabilities for levels 1-10 of the AQF

Level 1	Level 2	Level 3	Level 4	Level 5
Knowledge and skills for initial work, community involvement and/or further learning	Knowledge and skills for work in a defined context and/or further learning	Theoretical and practical knowledge and skills for work and/or further learning	Theoretical and practical knowledge and skills for specialised and/or skilled work and/or further learning	Specialised knowledge and skills for skilled/paraprofessional work and/or further learning
Level 6	**Level 7**	**Level 8**	**Level 9**	**Level 10**
Broad knowledge and skills for paraprofessional/ highly skilled work and/or further learning	Broad and coherent knowledge and skills for professional work and/or further learning	Advanced knowledge and skills for professional/highly skilled work and/or further learning	Specialised knowledge and skills for research, and/or professional practice and/or further learning	Systematic and critical understanding of a complex field of learning and specialised research skills for the advancement of learning and/or for professional practice

Adapted from AQF (2013b, pp. 12-13)

The AQF set down standards for learning in terms of knowledge, skills, and their application (Australian Qualifications Framework Council, 2013b). The AQF levels ascended in terms of the theoretical knowledge required as well as the required capacity for the learner to analyse information, make judgements independently, and to devise solutions to problems. Norton

and Cakitaki (2016) highlighted that the taxonomy showed a movement rather than sharp distinctions between the levels. Figure 2.3 (Learning outcomes, knowledge, and content in the AQF) shows the levels of learning outcomes, knowledge depth and breadth, and features of content embedded in the AQF while Figure 2.4 (Skills within the AQF) highlights the variety of skills embedded.

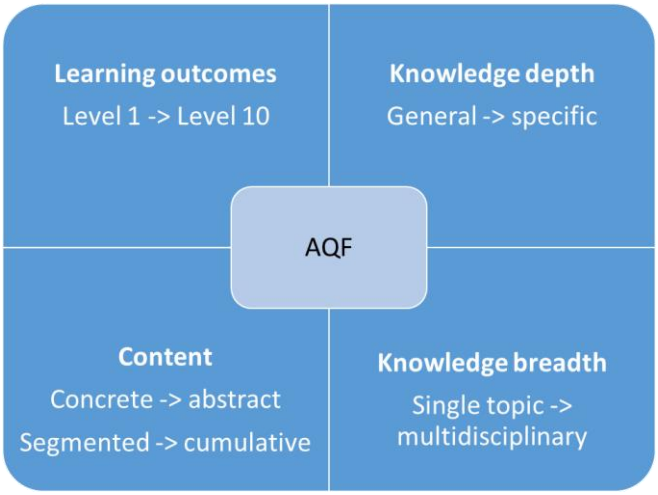

Figure 2.3: Learning outcomes, knowledge, and content in the AQF

Source: AQF (2013b)

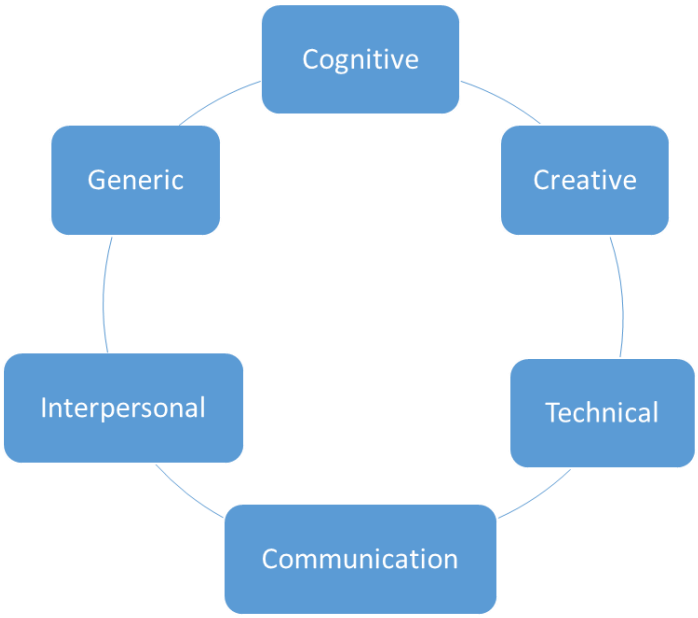

Figure 2.4: Skills within the AQF

Source: AQF (2013b)

The knowledge and skills in the AQF were contextualised through application. Figure 2.5 (Aspects of application) shows the connection between these different aspects.

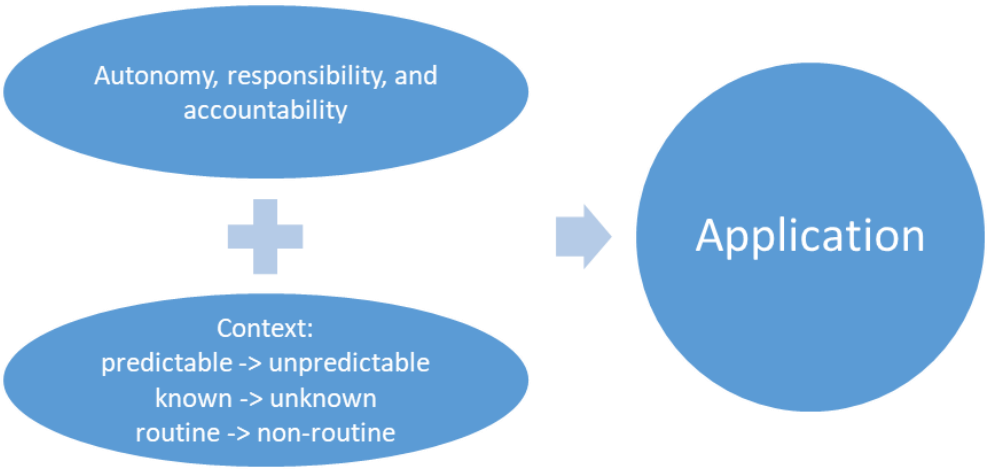

Figure 2.5: Aspects of application

Source: AQF (2013b)

This was the first time in Australia that a national structure of all accredited qualifications existed. Each tertiary educator was expected to match their learning and teaching activities to the relevant level in the AQF. However, in my experience in professional development for educators, few appreciated the AQF and even fewer centralised it as a key guide for their work. As a result, compliance with distinctions between AQF levels was primarily effected through the process of course accreditation, rather than through overt educator awareness or application of these distinctions. What was integrated into educator awareness, however, was the use of competency-based training (CBT) in the VET sector and the inputs model in HE. The National Centre for Vocational Education and Research (NCVER) reported that "CBT seems particularly effective for imparting procedural knowledge and routine problem-solving skills, making it well-suited for technical skill acquisition. It is not as well-suited to the development of conceptual and experiential knowledge" so less suitable for HE (National Centre for Vocational Education Research, 1999, p. 1). The differences in approach and focus are connected to the history and purpose of the education involved in each sector. Wheelahan (2005) argued that VET focused on selecting and training skilled labour and remained closely connected to industry while HE originally selected and trained social elites based on inherited merit (Clancy & Goastellec, 2007). However, this distinction started to blur as further changes were introduced to the tertiary sector, in particular the massification of tertiary education in the 1990s and the accompanying change in demographics of learners.

Moodie, Wheelahan, Billett, and Kelly (2009) highlighted that dual sector educators, those who worked in both VET and HE, often found difficulty in moving between the two sectors due to the different approaches and level of outcomes expected. In particular, HE educators required more time for preparation in order to meet the scholarship requirements of HE. There has also emerged a difference in the perceived value of learning that results from VET and HE in some institutions. Wheelahan et al. (2012) found that VET educators felt dismissed, not understood, or valued by HE educators. This was less the case if the HE educators had a good understanding of both sectors. So while the AQF provided a coherent and national model for accredited programs in Australia, it also is created a binary system for tertiary education which continues in current times (Beddie, 2015; Parker, Dempster, & Warburton, 2018).

To illustrate the differences more clearly, a comparison between a VET and HE qualification is offered in Table 2.2 (Comparison of Certificate 3 and Bachelor degree in the AQF).

Table 2.2: Comparison of Certificate 3 and Bachelor degree in the AQF

Qualification Level	Certificate 3	Bachelor Degree
Summary	Graduates at this level will have theoretical and practical knowledge and skills for work and/or further learning	Graduates at this level will have broad and coherent knowledge and skills for professional work and/or further learning
Knowledge	Graduates at this level will have factual, procedural and some theoretical knowledge of specific area of work and learning	Graduates at this level will have broad and coherent theoretical and technical knowledge with depth in one or more disciplines or areas of practice
Skills	Graduates at this level will have a range of cognitive, technical and communication skills to select and apply a specialised range of methods, tools, materials and information to: * complete routine activities * provide and transmit solutions to predictable and sometimes unpredictable problems	Graduates at this level will have well-developed cognitive, technical and communication skills to select and apply methods and technologies to: * analyse and evaluate information to complete a range of activities * analyse, generate and transmit solutions to unpredictable and sometimes complex problems * transmit knowledge, skills and ideas to others
Application of knowledge and skills	Graduates at this level will apply knowledge and skills to demonstrate autonomy and judgement and to take limited responsibility in known and stables contexts within established parameters	Graduates at this level will apply knowledge and skills to demonstrate autonomy, well-developed judgement and responsibility: * in contexts that require self-directed work and learning * within broad parameters to provide specialist advice and functions

Source: AQF (2013b)

Learning at a Certificate 3 level and at the Bachelor Degree level is different. A comparison of the skills required in each level highlights significant differences in terms of outcomes for the learners. Certificate 3 outcomes are applied in order to complete routine activities or apply solutions to primarily predictable problems. The emphasis of this learning is on following rules and accepted practice which leads to compliance learning. Bachelor degree outcomes involve analysis and evaluation of information to complete a range of activities, apply solutions to primarily unpredictable and sometimes complex problems, and involves the development of systematic and critical thinking, knowledge, skills and ideas. The emphasis of this learning is on utilising principles which leads to adaptive learning. (See section 6.5.2—Different types of learning occur, for further discussion.) The learning in both cases is 'fit for purpose' and is less problematically seen as part of the AQF continuum rather than being necessarily in competition with each other for supremacy or necessarily being seen as more or less valuable than the other. Having spent the bulk of my working life as an educator in both sectors simultaneously, this sentiment aligns with not only my view but also leading thinkers and writers in the field who supported a forum on the future of tertiary education reported on by Beddie (2014).

2.2.1.2 Regulatory bodies

Another significant area of change in the tertiary sector relates to regulatory requirements for educators. Since the 1980s, a number of regulatory bodies have overseen the activities of tertiary educators in both VET and HE. Rather than providing the history of these changes, the current situation for the regulatory bodies for both VET and HE and their relevant standards for tertiary educators are discussed in section 2.2.3 (The 21st century).

In conclusion, the 1980s and early 1990s were a time of change for tertiary education. The AQF formally split the field into two sectors—VET and HE. This has not led to the professionalising of tertiary educators' work at this stage.

2.2.2 The late 20th century—early 21st century

The changes brought about by the National Training Reform Agenda, the Australian Qualifications Framework, and the formal splitting of tertiary education into VET and HE, impacted on tertiary educators in a variety of ways. Part of the National Training Reform Agenda was to create a more competitive training market in VET (Committee for Economic Development of Australia, 1995). This change impacted traditional public providers in tertiary education from the early 1990s. Colleges of advanced education were merged with universities

(Norton et al., 2018) while public providers, such as TAFE, and universities were joined by private providers—registered training organisations (RTOs) in VET and non-university higher education providers (NUHEP), sometimes called independent Higher Education Providers (iHEPS) in HE (Korbel & Misko, 2016). The arrival of private providers brought with it two major shifts in tertiary education. Firstly, while some providers only operated in the VET or HE sector, others operated in both sectors. They were generally known as dual sector providers. Whilst a sharp distinction remained between the VET and HE sectors in public institutions—through technical and further education (TAFE) colleges in VET and universities in HE—this was not always the case in private institutions. Private providers implemented the model of education endorsed by the regulatory bodies (competency-based for VET; inputs in HE). Dual sector providers endorsed the vision of J. S. Dawkins (1988) by emphasising that both sectors contributed to the diverse needs of workers and their employers. Secondly, private providers were often more agile and adaptable than their larger, and more established, public counterparts. They tended to respond to the pressures on tertiary education more adeptly and in a more timely manner (Evans-Greenwood et al., 2015).

A trade or undergraduate degree was often the starting point to a career but a new expectation of additional qualifications has emerged. These extra qualifications extended or specialised existing ones, or focused on a new field study. Increasingly, learners moved not only between jobs but between careers, with these new careers often requiring re-education and retraining (Clemans, Newton, Guevara, & Thompson, 2013; Committee for Economic Development of Australia, 2015). This reflected the general trend away from agriculture and manufacturing toward services and management (Committee for Economic Development of Australia, 2015). Tertiary education remained dominated by face-to-face delivery, with the alternative of distance or correspondence learning offered via hard copy materials, and online education in its basic form commenced (Stacey, 2005).

At this stage, the impact of the internet was being experienced initially through Web 1.0 then Web 2.0. It was Web 2.0, and the associated interaction it enabled, that moved e-learning to a central place in education. Tertiary educators were expected to develop their e-learning skills in addition to content and pedagogical skills (Applebee, McShane, Sheely, & Ellis, 2005). Garrison (2011) asserted that initially e-learning strategies were an attempt to mimic the face-to-face environment, but progressively evolved towards their own distinctive approach so the affordances or benefits of e-learning could be accessed. Initially organisations specialised in providing online learning platforms for educational providers. These were later replaced with open source provision (for example Moodle) and learning management systems that could be

tailored and controlled inside the educational institution (for example Canvas or Blackboard). Siemens et al. (2015) argued that "The introduction of various educational software systems dramatically changed the entire process of educational delivery for both distance and on-campus modes of instruction" (p. 13). The veracity of this claim will be discussed in the section 2.2.3 (The 21st century). Figure 2.6 (Proportion of domestic HE students studying off campus, 1989–2016) gives an indication of the growth of distance and online provision (Norton et al., 2018, p. 24).

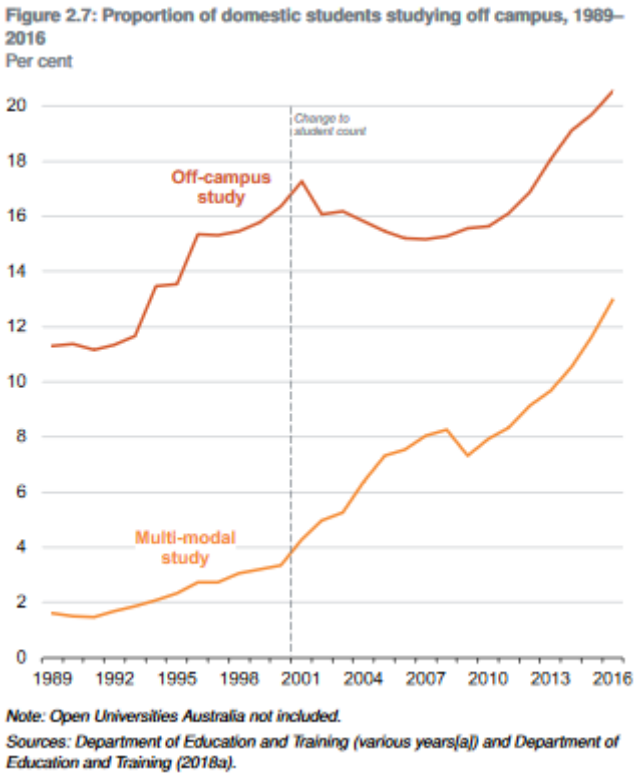

Figure 2.6: Proportion of domestic HE students studying off campus, 1989–2016

While there was growth in online learning modes, tertiary educators continued to utilise pedagogical approaches focused on teaching activities and included these within an andragogical[4] approach. The latter was based on principles described by Knowles (1980), with andragogy being defined as the art and science of teaching adults. This period heralded student-centred teaching which focused on changing the students' way of thinking or worldview (Sadler, 2012). The shift from pedagogy to andragogy maintained central focus on what the teacher does, and so remained teaching-focused education. The key change was a

[4] Greek: andró(s) (adult) + ágō (to lead) => andragogy (to lead an adult)

shift from who the teacher is (the expert) to who the student is (an independent adult). The tertiary educator role shifted to a 'guide on the side' (Blaschke, 2012) or facilitator and the learner role shifted from being a passive recipient to the expectation of being an active, intrinsically motivated learner who was driven by their self-directed learning goals. Although the literature promoted this shift, and it was often espoused in educational institution documentation, there has remained a considerable lag in implementation, particularly in HE. This lag may be due to the emphasis placed on research over teaching expertise by universities (Productivity Commission, 2017) and/or to low demands for teaching expertise by regulators (Norton, Sonnemann, & Cherastidtham, 2013).

Extra challenges arose for tertiary educators when policies targeted underrepresented groups in HE—people from socio-economically disadvantaged backgrounds, Aboriginal and Torres Strait Islander people, women in non-traditional courses, people from Non-English Speaking Backgrounds, people with disabilities, and people from rural and isolated areas (Department of Employment, 1990).

> The overall objective for equity in higher education is to ensure that Australians from all groups in society have the opportunity to participate successfully in higher education. This will be achieved by changing the balance of the student population to reflect more closely the composition of society as a whole (Department of Employment, 1990, p. 2).

While laudable in its intent, many educational institutions were simply underprepared and, therefore, unable to be responsive to the needs of the underrepresented learners. In HE, for example, efforts to accommodate the needs of first year university learners were described as 'piecemeal' and attempts to design transition pedagogy to support learners were implemented in some HE providers (Kift, 2008, 2009, 2015; Kift, Nelson, & Clarke, 2010). As Kift (2008) argued:

> There are many drivers that have pushed universities to be more strategic about supporting student transition into the institution from an early stage in the student-institution experience, including: the heterogeneity of entering students' backgrounds; the well documented and changing patterns of student engagement; the expectations of new learners, many of whom belong to Generation Y or the dot.com generation; and the sector's own transition from an elite to a mass education system (p. 12).

These changes that Kift identified commenced in the 1990s. Tertiary educators were expected to respond to the growing diversity of needs, both academic and non-academic. Gale (2010) emphasised the importance of socially inclusive teaching as "there is a diversity of learners and ways of learning, which need to be taken into account when designing learning activities" (p.

2). Designing also needed to meet an ever increasing range of legislative requirements including those from the Racial Discrimination Act 1975 (Cth[5]), Sex Discrimination Act 1984 (Cth), Disability Discrimination Act 1992 (Cth), Disability Standards for Education 2005 (Cth), Australian Human Rights Commission Act 1986 (Cth), Workplace Gender Equality Act 2012 (Cth), Age Discrimination Act 2004 (Cth), and various State and Territory Anti-Discrimination legislation (Tertiary Education Quality and Standards Agency, 2017). These require tertiary educators to be mindful, for example, of different approaches to learning, making reasonable adjustments to learning activities and assessments that may be required, and ensuring that the learning environment is non-discriminatory.

Kember and Kwan (2000) distinguished two ends of a spectrum of teaching orientation for the educator. They were a 'content-centred' focus, which was aligned to the teacher-centred approach, and a 'learning-centred' focus, which was aligned to the student-centred approach. Kember and Kwan (2000) differentiated between the focus of educators in the two approaches. Educators with a content focus to teaching supply notes, test or quiz frequently, treat students the same with some catering for weaknesses, and provide examples from their own experience. Educators focus on the whole class and see student motivation as something beyond their role. In contrast, educators with a learning focus to teaching encourage students to discover and construct knowledge, offer flexible assessment tasks often with choices, attempt to remediate student weaknesses, and utilise and respect student experience. Educators focus on individual students and recognise their teaching role includes motivating students. The educators' role in the latter included ensuring that "appropriate learning takes place" (Kember & Kwan, 2000, p. 475). Appropriate learning, in this context, is determined by the educator (Kember & Kwan, 2000). Educators guided learners while understanding that learning was ultimately the learner's responsibility (Blaschke, 2012). A growing potential misalignment between the theory and practice of tertiary education was evidenced at this stage, which continues currently. This will be further discussed in section 2.2.3 (The 21st century) regarding mislabelling of student-centred as a learning-centred approach by Kember and Kwan (2000).

A review of the tertiary education literature suggests that the major changes experienced in this phase were the call for a movement from lecturer- and content-centred to student-centred, and from the focus on individual learning to the integration of both individual and

[5] (Cth) means Commonwealth legislation

social aspects of learning through groupwork, peer teaching, and communities of practice (Kember, 2008; Lave, 2009; Lea, Stephenson, & Troy, 2003; Sadler, 2012; Wenger, 2009, 2010). Learning was also being increasingly affected by disruptive technologies both within and beyond tertiary education (Andersson, 2010; Barnes & Tynan, 2007; Laurillard et al., 2009). The challenge for tertiary educators was meeting the diversity of demands at the same time as being engaged in higher workloads that had left them 'time poor' (McNeill & Cram, 2011).

2.2.3 The 21st century

In the 21st century, some public providers continue as exclusively delivering VET or HE whilst others have become dual sector, alongside dual sector private providers. Norton, Sonnemann, and McGannon (2013) highlighted, in their review of online learning in HE, that a further segmentation has emerged with the creation of a digital or e-learning arm of universities such as Curtin and Swinburne Universities. Most recently a discussion paper was put forward for a national tertiary education and training system that moved beyond the VET and HE division (Parker et al., 2018). Parker et al. (2018) argued that the separation of VET and HE is "an unstable and outmoded distinction" (p. 1). Further a revised AQF would sit within the tertiary education "ecosystem" (Parker et al., 2018, p. 1). This revision would support workplaces who increasingly need their employees to be impelled learners and obtain multiple qualifications. In addition, there has arisen a bi-directionality of learner movement between VET and HE in gaining these multiple qualifications (R. Harris, 2009). Delivery modes are now face-to-face, online (sometimes called fully online to differentiate it from blended learning and multi-modal), and blended. A growing trend is multi-modal learning, which involves some units in a course being studied face-to-face whilst others are completed online. The rapid growth in proportion of HE students involved in multi-modal delivery, and off-campus delivery, are shown above in Figure 2.6 (Proportion of domestic HE students studying off campus, 1989–2016). Norton et al. (2018) noted that multi-modal enrolments are growing proportionally faster than on-campus enrolments.

2.2.3.1 Heterogeneity and learning difficulties

The demographics of tertiary learners continues to increase in heterogeneity. The *Opportunity through learning* report (2017) highlighted that between 2011 and 2016, domestic undergraduate learners in HE increased from 611,000 to 744,200 (an increase of 21.7 per cent).

Importantly in terms of heterogeneity:

- [learners] with disability grew from 30,600 to 48,000 (an increase of 57.0 per cent)
- Indigenous students grew from 8,600 to 12,900 (an increase of 50.6 per cent)
- [learners] from a non-English speaking background grew from 19,300 to 27,300 (an increase of 41.4 per cent)
- low SES [learners] grew from 103,400 to 133,900 (an increase of 29.5 per cent)
- regional and remote [learners] increased from 133,500 to 158,200, an increase of 18.5 per cent.

Participation in tertiary education, contrary to earlier research, has been found to not be greatly affected by socio-economic constraints. Asplund, Adbelkarim, and Skalli (2008) concluded that early school achievement, region of residence, the school attended, and the impact of the family and their educational biases, were more impactful on potential participation in education. This complex set of factors impacts on a learner's capacity to enter and succeed in tertiary education. Additional areas of difficulty identified in HE included: mastering being a tertiary student (Collier & Morgan, 2008; James, 2011); lower levels of academic preparedness; ill-informed expectations of what was expected in tertiary education; and lack of clarity about what was expected of them as students (Kift, 2015). This is in some part understandable as many of these learners were the first in their family to access tertiary education at university (Kift, 2015; Universities Australia, 2013), and may have had only moderate success coping with the lower demands of earlier education. As Bridges (2000) noted, some tertiary education students lack the basic numeracy and literacy skills required for success. Tertiary educators, therefore, need to respond to an increasingly complex and diverse set of learner needs. The tertiary educators now needed to ensure these new students were adequately orientated to study. Yang, Schneller, and Roche (2015) argued that the tertiary institutions, and the educators within them, also needed to focus on retention and progression of all learners.

The issue of learning difficulties is of particular importance in tertiary education. Some learning difficulties begin during school-age years and may be amenable to early intervention, for example problems with reading (Bellert & Graham, 2017). Some are not amenable to intervention and will therefore continue to impact throughout the lifespan, for example autism or attention deficit hyperactivity disorder in its variant forms. The extent of these types of learning difficulties "may not become fully manifested until the demands for those affected academic skills exceed the individual's limited capacity" (American Psychological Association,

2013, p. 67). A significant shift in learning demands occurs with the movement from the structured environment of the primary and secondary sectors to a less structured, more autonomous learning environment in the tertiary sector. These changes may expose previously hidden or compensated-for learning difficulties. Additionally, learning difficulties, including mental health issues such as depression or anxiety, may arise in adulthood. There may also be transient learning difficulties that arise from adult life challenges, such as illness of a child or parent, or longer term adult life challenges, such as family demands, financial demands, transitions between being single and partnered, and deaths. Many, and likely most, affected learners may lack awareness of the existence of these hurdles, fail to consider their issues as legitimate learning difficulties, or may not know of available support mechanisms—and so may not seek needed support, adaptions, or other interventions (Buckley, 2017; Department of Education and Training, 2015; Grimes, Scevak, Southgate, & Buchanan, 2017).

Grimes et al. (2017) argued the driving force behind higher education institutions seeking disclosure of learning difficulties and offering support is regulatory compliance—rather than being focused on improving the learning experience of learners. Grimes et al. (2017) queried the discrepancy between identified learning difficulties within the student population (6%) and the general population (20%). In order to understand this discrepancy, a university wide survey entitled, "Support for student learning: challenges to learning", was developed. Students were anonymously asked to identify any assessment or diagnosis using a modified version of the UK Higher Education Statistics Agency (HESA) disability categories, and nominate whether their assessment/diagnoses had an impact on their learning. The undergraduate student population offered 2821 responses with 994 respondents identifying as a "student with learning challenges". Disclosure of these learning challenges to the institution was low (n=361) compared to non-disclosure (n=633). That is, for this surveyed group 35% identified as having learning challenges, yet only 13% had disclosed. This revealed a huge gap with only approximately one third of readily identifiable learning challenges being known to the educational institution. This study reveals the likelihood that tertiary educators will have many learners with undisclosed learning challenges. Privacy restrictions, under various Federal, State or Territory legislation, may restrict or prevent educational institution services passing on information advised by students about specific learning difficulties to relevant tertiary educators. Regardless of disclosure or non-disclosure, tertiary educators are likely to be supporting many learners with a wide range of learning difficulties and learning disabilities (Gosper et al., 2008; Kift, 2015). This issue will be further explored in section 6.5.6 (Refocusing on learning in order to respond to heterogeneity).

2.2.3.2 Embedded technology

Tertiary educators are continuing to face the need to upskill in technology as more emphasis is placed on both online learning and blended learning (T. Anderson, 2016; Andrejeva & Ostroverkhaia, 2017; Bliuc, Casey, Bachfischer, Goodyear, & Ellis, 2012; Ellis, Steed, & Applebee, 2006). Brenton (2015) argued that the distinctions between face-to-face and online learning are "slowly collapsing" (p. 139) which means tertiary educators require digital literacy. The earlier comment in section 2.2.2 (The late 20th century—*early 21st century*) by Siemens et al. (2015) regarding the impact of educational software systems on educational delivery in both distance and on-campus has perhaps been verified. It is no longer possible for tertiary educators to be partitioned from technology in education as both educators and tertiary education institutions have a vital role to play in the development of digital literacy in the workforce (Bliuc et al., 2012).

The embedding of technology in tertiary education still continues to be a difficult transition for many tertiary educators (Reid, 2014, p. 383), which has led to a lack of "willingness or interest in adopting" technology. This task is not made easier when every year a new and ever-growing batch of technologies are released and enthusiastically touted to "revolutionise" teaching and learning (Reeves & Bonk, 2015, p. 386). Two key reasons for this difficulty have been identified: time constraints (Roberts, 2008) and the ageing workforce with low digital competence or lack of strategies to integrate technology in learning (Norton, Sonnemann, & McGannon, 2013; Roberts, 2008; Wood, Solomonides, Wilson, Goos, & Dixon, 2014).

Roberts (2008) argued that time constraints were a significant barrier to learning new technological skills in the context of competing academic and administrative demands. Applebee et al. (2005) argued "the appropriate use of new approaches and technologies to learning and teaching in higher education is put at risk if teachers who are already stretched in their ability to handle their existing administrative, teaching, research and community service loads, are not supported in ways that will recognise their professional standing as university teachers for which they will get credit" (p. 17). Griffin and Rankine (2010) highlighted that these time demands involved both initial learning as well as ongoing learning in order to keep up with changing technology.

An additional impediment to this investment of time may relate to the demographics of tertiary educators. Wood et al. (2014) argued that tertiary educators, in HE specifically, are part of an ageing workforce. These tertiary educators may have commenced their careers where 'digital muggles' (persons with no digital literacy) and 'digital citizens' (persons who use technology to communicate, find information, and transact) were both acceptable (The

Foundation for Young Australians, 2017b). However, digital citizens are the minimum as a digital worker (a person who configures and uses digital systems) and a digital maker (a person who builds digital technology) may increasingly be required. Low digital competence or lack of strategies to integrate technology in learning may increase resistance to adopting technology (Norton, Sonnemann, & McGannon, 2013; Roberts, 2008). Tertiary educators may have great familiarity with traditional methods of delivery but be less effective in integrating technology into those methods. Vaughan (2007) argued that this requires a substantial time commitment at both a course and unit level to be successful. Setting aside time for this task is particularly difficult as tertiary educators usually experience high workloads (Norton et al., 2018).

2.2.3.3 Emphasis on self-directed learning

Teacher-centred approaches, where the teacher imparts information, and student-centred approaches, where the teacher focuses on changing the students' way of thinking or worldview, were joined by a third approach: self-directed learning. Self-directed learning "as a personal attribute refers to an individual predisposition toward this type of learning and comfort with autonomy in the learning process" (Merriam & Bierema, 2014, p. 63). Self-directed learning "is an approach to learning that is controlled by the learner" (Merriam & Bierema, 2014, p. 63). More recently, educational literature has recommended a shift to heutagogy.[6] The term heutagogy and self-directed learning are often used synonymously in the literature. McLoughlin and Lee (2008) argued that there is a movement away from the 20th century highly centralized, industrial model of learning. The 21st century model focuses on individual learner empowerment through collaborative and networked interaction. Learners need to form their own meanings or understandings, utilise their own judgement and independent resourcefulness, and make their own connections beyond the tertiary educator's intended transmitted meanings (Blaschke, 2012; Hase & Kenyon, 2001, 2003). These changes align with a continuing shift from dominantly objectivist to constructivist core epistemological assumptions and viewing lenses.

When Hase and Kenyon (2001) offered the term heutagogy, it both described and prescribed a further movement from content to learning focus. Under this approach, the ownership of learning is now overtly in the learner's hands with the educator providing guidance and curated resources including activities that enable feedback provision (Halsall, Powell, & Snowden, 2016). Whereas both pedagogy and andragogy placed the educator in charge of the

[6] Greek: eaftós (oneself) + ágō (to lead) => heutagogy (to lead oneself)

content and process of learning, heutagogy places the learner in charge of their learning, with educators being one of the resources they can access. This approach increased focus on what is often referred to as '21st century skills'. These included cognitive skills (non-routine problem solving, critical thinking, systems thinking), interpersonal skills (complex communication, social skills, teamwork, cultural sensitivity, dealing with diversity), and intrapersonal skills: self-management, time management, self-development, self-regulation, adaptability, executive functioning (Koenig, 2011). Attention was given to both learning *through* life or lifelong learning, and learning *for* life or lifewide learning (Stine-Morrow & Payne, 2015; Tennant, 2009; Yang et al., 2015). Yang et al. (2015) suggest that learning needs to be linked "to the wider issues of life" (p. 14) throughout all ages of lifelong learning.

Heutagogy focuses on both competence—the proven ability in acquiring knowledge and skills—and capability—learner confidence in his or her competency, combined with the ethics and judgement to deal with the unfamiliar (Blaschke, 2012; Halsall et al., 2016; Hase & Kenyon, 2001). Whilst competence is application of 'what' the learner knows (epistemological), capability reflects 'how' the learner is experientially within his or her world (ontological). Heutagogy is focused on metacognitive and self-directional skills where the learner reflects on "what is learned and how it is learned and in which educators teach learners how to teach themselves" (Blaschke, 2012, p. 57). Reflective processes support the learner to potentially create transformative learning—a process described by Canning and Callan (2010) as "spirals of reflection" (p. 71). Halsall et al. (2016) highlighted that heutagogy aligns with a world that is constantly changing, the focus on 'what we do' rather than 'what we know', and "is prospective in approach in that it looks to the future in which knowing how to learn is a fundamental skill" (p. 8).

A crucial issue arises for tertiary educators in a heutagogical approach. While the educational literature may advocate this approach on the basis of a growing awareness of the importance of active construction of learning by the learner, tertiary educators are tasked with meeting intended learning outcomes (HE) or units of competency (VET) (Australian Skills Quality Authority, 2015; Tertiary Education Quality and Standards Agency, 2015). These are the most basic, assessable aspects of a broader course of study that a learner undertakes in Australia and form the basis of accredited programs that meet the Australian Qualifications Framework requirements. Therefore, while the theory proposed by Hase and Kenyon (2001, 2003) may emphasise different philosophical underpinnings to the learning and teaching activities, tertiary educators are charged with the responsibility to meet accreditation requirements. Wanting to implement the leading edge thinking of theorists or practitioners whilst meeting

the requirements of their assigned role are often in conflict with each other. Whilst educators may experientially see the vital importance of the former, they may feel pressured to disregard this whilst performing the latter. This disjuncture may cause role conflicts for educators. This will be discussed in more depth in Chapter 6 (Linking tertiary educators' experiences of learning to theory and context).

2.2.3.4 Regulatory expectations for tertiary educators

VET's governing body, Australian Skills Quality Authority (ASQA) (2015, p. 1) requires that VET trainers and assessors (educators) have:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- TAE40110 Certificate IV in Training and Assessment, or its successor (diploma or higher level qualification in adult education).

Registered Training Organisations, those organisations recognised to provide VET:

> must also ensure that all trainers and assessors undertake professional development in the fields of:
>
> > knowledge and practice of vocational training, and
> >
> > learning and assessment, including competency-based training and assessment.

HE's governing body, Tertiary Education Quality and Standards Agency (TEQSA), does not specify a specific qualification in adult education. Instead, TEQSA (Tertiary Education Quality and Standards Agency, 2015, p. 8) through the Higher Education Standards Framework (Threshold Standards) 2015 states:

> 3. Staff with responsibilities for academic oversight and those with teaching and supervisory roles in courses or units of study are equipped for their roles, including having:
>
> > a. knowledge of contemporary developments in the discipline or field, which is informed by continuing scholarship or research or advances in practice
> >
> > b. skills in contemporary teaching, learning and assessment principles relevant to the discipline, their role, modes of delivery and the needs of particular student cohorts, and

> c. a qualification in a relevant discipline at least one level higher than is awarded for the course of study, or equivalent relevant academic or professional or practice-based experience and expertise, except for staff supervising doctoral degrees having a doctoral degree or equivalent research experience.
>
> 4. Teachers who teach specialised components of a course of study, such as experienced practitioners and teachers undergoing training, who may not fully meet the standard for knowledge, skills and qualification or experience required for teaching or supervision (3.2.3) have their teaching guided and overseen by staff who meet the standard.

Based on these current regulations, HE tertiary educators must have 'skills' (as subjectively interpreted) but no qualification (as objectively measured) in learning and teaching. Additional information is added via TEQSA's Guidance Notes which state:

> The teaching qualifications, skills and experience needed in staff will vary according to their levels of responsibility, and a useful point of reference for this is the Australian University Teaching Criteria and Standards Framework.
>
> The Standards concerning the capability of teachers (including contemporary knowledge, continuing scholarship and relevant teaching skills) presuppose continuing professional development of teaching staff if a provider is to meet and continue to meet the Standards, although the Standards do not specify how this might be achieved.

The critical issue relevant to this study is the level of expertise in learning and teaching that tertiary educators require to work in each sector. ASQA requires a Certificate IV qualification for VET educators. In reviewing ten versions of this qualification by different providers, I found very limited information on what learning is and how it occurs. Instead, the qualification focused on VET qualifications, training packages and how they are developed, unpacking units of competencies that make up the training packages, principles of assessment, and designing delivery including teaching strategies. TEQSA does not formally require HE educators to have any qualifications in learning and teaching. The standards instead require skills in contemporary teaching, learning and assessment principles. So there is no stated minimum measurable standard for knowledge of learning required by HE educators.

The issue of tertiary teaching qualifications is a 'wicked' problem as it has many interdependencies and multi-causal factors (Briggs, 2007). Valuing content over process, teacher-centred rather than learning-centred approaches, focus on transmission of knowledge rather than development of learning, compliance rather than adaptive learning focus, teaching to the middle rather than personalising, focus on teaching rather than learning, are just a few

of the issues. Yet compelling evidence from recent research into VET teacher qualifications by Smith, Yasukawa, Harris, and Tuck (2018) found:

1. Higher level qualifications in VET pedagogy improve teaching approaches, confidence and ability to address diversity in contexts, learners and AQF level of teaching.
2. VET teachers often have high level qualifications in their industry area or other disciplines, and these too make a difference. However, higher level qualifications in VET pedagogy make a significant difference to VET teachers' confidence and ability in teaching a diversity of learners.
3. The key qualification level that makes a difference is a degree.

There are three major concerns with the current regulatory situation. First is the implicit devaluing of learning and teaching activities. Norton, Sonnemann, and Cherastidtham (2013) argued that entry requirements, clearly-defined practice standards, ongoing professional development obligations, and procedures for expelling people who breach the rules, are hallmarks of traditional professions. These standards and the resulting professionalisation of teaching might now be seen as critical due to the changes experienced in tertiary education. "The student population's increasing diversity and technology-based learning make teaching a more complex task. Staff need a sound understanding of learning theories and how to apply them in their work" (Norton, Sonnemann, & Cherastidtham, 2013, p. 20). Second, if tertiary educators do not have a sound and cogent understanding of learning and teaching, the learning experience can be negatively impacted by poor practices (Weinstein, Sumeracki, & Caviglioli, 2019). Learners may then have a compromised learning experience. Third, for educators to feel both competent and capable, thus reducing the risk for stress and burnout, a solid understanding of what they are doing in learning and teaching is necessary. Time and effort may be wasted by not applying their efforts to the core elements of learning and teaching. Equally, educators may lose confidence if they are not able to manage the learning and teaching activities. This was a finding in my Masters of Education (by thesis) (Chinchen, 2001) which focused on stress and burnout in adult educators. It has also been my professional experience when mentoring educators and dealing with student complaints about educators.

2.2.3.5 Professional identity and role

A deeper concern for tertiary educators in the 21st century relates to the impact that the changes discussed so far have had on their professional identity and role. Evans-Greenwood et al. (2015) argued that "knowledge is becoming something that we now pull in as required, rather than being pushed out by an institution via instruction in anticipation of future need" (p. 7). This relationship with knowledge contrasts with "delivering packaged information"

(Mor, Craft, Herná, & Ndez-Leo, 2013, p. 1) and earlier knowledge and skills accumulation models of tertiary education. When describing this shift in HE, Holdsworth and Hegarty (2016) argued that "the focus on educational outcome rather than inputs … has resulted in academic faculty focussing on the outcomes, rather than the content, of their teaching activities" (p. 176). This newer perspective challenges the professional identity of tertiary educators as holders and gatekeepers of knowledge. The previous identity and role for professional educators related to transferring or imparting their knowledge to the learners (Institute for Teaching and Learning Innovation, 2015). Jalal (2018) argued that this approach leaves "student learning…dependent on the lecturer's knowledge" (p. 163). Jarvis (2004) captured the central dilemma in the shift from lecturer-centred content focus to student-centred or learning-centred approaches:

> It may be seen that while the learner is an essential element in the learning process, the teacher is not. Learning may, and often does, occur without teaching (p. 42).

The movement towards learning-centred approaches has gained momentum since the beginning of the 21st century. Hairon and Chai (2017) argued that this 'learning revolution' entailed a movement away from any of the 'agogues', such as pedagogy, andragogy, or heutagogy, with tertiary educators being more productively viewed as designers of learning. "The central objective of learning design is to help tertiary educators shift from the focus on content to learner experiences" (Hairon & Chai, 2017, p. 82). Designing learning builds a different view of the tertiary educator's 21st century role. Transmission of content gives way to being learning experts. In this way, tertiary educators can assist through both expert content knowledge and pedagogical knowledge (TEQSA, 2015). This focus on learning also allows tertiary educators to move between compliance learning—for predictable and stable situations—and adaptive learning—for unpredictable and unstable situations (see section 2.2.1.1—The 1980s and early 1990s—*The Australian Qualifications Framework (AQF),* and section 6.5.2—Different types of learning occur). Under this adaptive learning approach, creating "the conditions for learners to learn [is] … situated in a complex space of opportunities and constraints" (Mor et al., 2013, p. 1).

Re-envisioning the role of tertiary educators as designers of learning focuses attention on the processes of learning rather than on the transfer of knowledge. It also moves beyond the somewhat vague notion of 'facilitating learning' to active engagement of learners in learning. A shift has occurred in how learning is often seen: instead of learning being seen as solely a means to an end, the process of inducing active learning in a complex and changing world is

increasingly seen as an end in itself. The need to focus on learning was encapsulated several decades ago by C. R. Rogers (1983):

> We are, in my view, faced with an entirely new situation in education where the goal of education, if we are to survive, is the facilitation of change and learning. The only [person] who is educated is the [person] who has learned how to learn; the [person] who has learned how to adapt and change; the [person] who has realised that no knowledge is secure. Changingness, a reliance on process rather than upon static knowledge, is the only thing that makes any sense as a goal for education in the modern world (p. 120).

Rogers' statement aligns with a shift from a narrow focus on specific content to the inclusion of a wide focus on the phenomenon of learning, the lived experience of learning, and its enhancement. In refocusing on learning and its resulting 'changingness', "both the requirements of educating individuals and preparing them for a contribution to society" (Dall'Alba & Barnacle, 2007, p. 687) are met throughout the lifespan.

2.2.3.6 Change responses

Change can provoke a range of emotions that may facilitate or inhibit learning. As Hiatt and Creasey (2012) argued, change is inhibited when it creates anxiety, worry, fear and uncertainty; in these circumstances we typically hold onto the familiar and comfortable. Hiatt and Creasey (2012) further argued that individuals change at different rates in part because of variations in their belief both in the value of the change being advocated and in their capacity to implement the change into their world. This is echoed by E. M. Rogers (2003) in his research into innovation adoption. In an ideal world, change would be introduced over a manageable timeframe, with all participants committed to the change before implementation begins. However, educational institutions are not without challenges in terms of dealing with forces of competitiveness, change, predictability, complexity, ambiguity, required speed of adaptation, and coordinated alignment of all personnel to institutional goals (Evans-Greenwood et al., 2015). Therefore, changes are often top-down in response to government policies and educators are left to conform with and implement the changes (Beer, Jones, & Clark, 2012; Mor et al., 2013).

2.2.3.7 Three key points

Three key points conclude this section. First, Evans-Greenwood et al. (2015) importantly reminded us that tertiary educators may incorporate aspects drawn from earlier models of education when applying newer approaches. This means that tertiary educators can embrace both what is known to assist learning and can innovate to further develop ways of doing this (Goss, 2017). Additionally, a shift in perspective may help tertiary educators navigate the

transition to the 21st century paradigm. Hairon and Chai (2017) argued that educators "need to see themselves as designers of learning instead of just pedagogues or facilitators of learning" (p. 81). This focus on learning may enable tertiary educators to have a steady focal point for their work that brings order rather than being distracted by what Bransford, Brown, and Cocking (2000, p.21) called "a cacophony of choices".

Second, in spite of the challenges that embedded technology has created for tertiary educators, Johnson et al. (2013) argued that technology has allowed educational institutions to meet the expectations of 21st century learners to study when and where they wish to learn, with their own technology. These learners, McLoughlin and Lee (2008) argued, desire autonomy, connectivity and socio-experiential learning. They further argued for the movement away from the 20th century notion of an industrial model of learning. Instead, the focus in the 21st century needs to be on learner empowerment via collaborative, networked interaction (McLoughlin & Lee, 2008). This changes the essence of the educator's role in learning, and is better represented by an organic approach, that produces organic learning, and changes depending on the context, purpose and needs of those involved.

The professional identity and role of tertiary educators has become a combination of stability and flux. The stability relates to the primary role of creating opportunities for learning (Laurillard, 2012; Ramsden, 2003). The flux relates to how tertiary educators create these opportunities for a heterogeneous group of learners. Goss (2017) argued that educators should be focused on maximising learning. Maximisation of learning is unlikely to occur under a reign of tight educator control over learning. This maximisation requires tertiary educators and educational institutions to move beyond what should be learned and how it can be learned.

2.3 The purposes of tertiary education

Evans-Greenwood et al. (2015, p. 21) posed the following question: "*What is the purpose of education and, by extension, educators?*" The common answers to this question are a mix of the diverse, complex, and nuanced, and lead to differences which "spring from perspectives, value positions and even ideologies that are mutually incompatible" (Barnett, 2012). This section identifies some of the main groups of influencers of tertiary education in Australia at this time. Different groups typically have different aims and often perceive purposes of tertiary education. Any absence of agreement on the prime purpose(s) of tertiary education tends to lead to lack of consistency of focus and direction of the parties, increased complexity and conflict, and potentially negative impacts on intended educational outcomes.

2.3.1 Main groups of influencers of tertiary education policy in Australia

The identification of the stated purposes of tertiary education vary according to who you ask. Each group of influencers has perspectives and agendas for which they advocate. Many, but not all, of these stakeholders are identified in Figure 2.7 (Main groups of influencers on tertiary education policy in Australia).

Figure 2.7: Main groups of influencers on tertiary education policy in Australia

Drawing on the *Department of Parliamentary Services' Tertiary Education: A quick guide to key internet links* (Ey & Ferguson, 2019), and the stakeholders mentioned in this chapter so far, a brief overview of these stakeholders in tertiary education in Australia is offered.

2.3.1.1 Australian Federal, State and Territory governments

Most education systems, both in Australia and internationally, are in part or fully funded by their respective governments (Laurillard, 2012). Australia has a two tiered system of government in relation to tertiary education: the Federal or Commonwealth government which oversees tertiary education at a national level; and the State governments of New South Wales, Queensland, South Australia, Tasmania, Victoria, and Western Australia, and Territory Governments in the Australian Capital Territory and the Northern Territory. The governing political parties at the Federal, State, and Territory levels have their own political, social, and economic agendas, consistent with their particular ideological perspectives. The Commonwealth government oversees VET through the *Department of Employment, Skills, and Family Business*, while HE is overseen by the *Department of Education*. The Commonwealth

Department of Home Affairs is also involved as it issues student visas for international students. The funding in both sectors of tertiary education are enacted through a complex set of agreements and frameworks.

Emerging from the various governments are arrangements which affect the provision of tertiary education. The first is provision of funding. This funding may be for onshore fee-for-service tertiary education involving both domestic and international students, or for the delivery by educational institutions of tertiary education at overseas campuses. The funding applies to both VET and HE providers and involves Commonwealth and State or Territory governments (Ey & Ferguson, 2019). Funding from the Commonwealth government to the State or Territory governments is via the *National Agreement for Skills and Workforce Development (NASWD)* which is part of the broader *Intergovernmental Agreement on Federal Financial Relations (IGA)*.

2.3.1.2 Australian regulatory bodies and frameworks

In order to obtain funding, educational institutions must be approved by ASQA, the regulatory body for VET, or TEQSA, the regulatory body for HE. This ensures that educational institutions conform to the standards set down by each of the regulatory bodies. These standards relate to institutional governance, appropriate staffing, course design standards, and other relevant obligations to which each educational institution must adhere. The Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS) regulates the requirements for the provision of tertiary education for international students. Without CRICOS registration, the tertiary education institutions cannot engage in the international market. Additionally, the qualifications offered by educational institutions must conform to the AQF (see section 2.2.1.1—The 1980s and early 1990s—*The Australian Qualifications Framework (AQF)* for further information). The governments and regulatory bodies are two important stakeholders who influence the frameworks and purposes of tertiary education.

2.3.1.3 Australian reporting bodies

Tertiary education data is captured by a variety of groups. These include:

- regulatory bodies of ASQA (VET) and TEQSA (HE) which focus on their areas of responsibility
- Australian Bureau of Statistics which provides general statistics on education in Australia
- Austrade which reports on international students

- National Centre for Vocational Education Research (NCVER) which reports statistics in VET
- Quality Indicators of Learning and Teaching (QILT) reports on aspects of HE (Ey & Ferguson, 2019).

ASQA and TEQSA use press releases, reports, and other publicly available communications about their regulatory and guidance work for their sectors in tertiary education. The Australian Bureau of Statistics (ABS) provides statistics of a more general nature about education as seen in section 2.1.2 (Demographics of current learners in formal education). AUSTRADE provides data on international education, Australia's internal and external provision of international tertiary education, and potential marketplaces for future expansion of international tertiary education (AUSTRADE, 2019).

The National Centre for Vocational Education Research (NCVER) *About us* webpage identifies itself as "the National professional body responsible for collecting, managing, analysing and communicating research and statistics on the Australian vocational education and training (VET) sector (National Centre for Vocational Education Research, 2019). The research and statistical information stakeholders include Ministers, Commonwealth and State and Territory education and training authorities, registered training organisations, VET practitioners and providers, educational institutions, Australian businesses, researchers, international agencies, industry skills councils, employer and employee-based associations or organisations, and community organisations. The QILT *Home* page explains that the QILT reports "are a suite of government endorsed surveys for higher education which follow the student life cycle from commencement to employment" with the aim of providing "robust, nationally consistent performance data for Australian higher education, helping drive quality improvement" (The Social Research Centre & Commonwealth of Australia, 2019). The four surveys to which QILT refer are the:

1. Student Experience Survey (SES) which collects information from undergraduate and postgraduate coursework students from Australian universities and Independent higher education providers with the aim to assist both higher education institutions and the government to improve learning and teaching outcomes
2. Graduate Outcome Survey (GOS) which collects information from graduates of higher education institutions four months after the completion of their courses and provides information on the labour market outcomes and further study activities of these graduates
3. Course Experience Questionnaire (CEQ) which is completed in conjunction with the GOS by graduates of higher education institutions four months after the completion of the courses and asks graduates to what extent they agree with a series of statements about their study experiences

4. Employer Satisfaction Survey (ESS) which is sent to supervisors identified by graduate students in the GOS in order to gain feedback about the generic skills, technical skills and work readiness of the graduates employed in the workplace.

The data that is gathered on tertiary education by the various bodies discussed here identify several more stakeholders in tertiary education: the learners or students themselves; the graduates of tertiary education; employers of graduates of tertiary education; industry skills councils; international agencies; Australian businesses; employer and employee-based associations organisations; and community organisations. Each of these stakeholders have their own agendas, interests, and purposes they want from tertiary education provision.

2.3.1.4 Australian research councils and their international counterparts

Australian research councils and their international counterparts provide guidance and information to: governments on national and international trends within tertiary education, including funding, social and economic aspects, and initiatives to improve tertiary education; educational institutions on governance and policy issues, the context for and impact of new government initiatives, including funding changes; professional associations who may set standards and expectations in relation to the graduates of tertiary education, including the content and design of tertiary education courses; and industry bodies who have input into the content and design of tertiary education courses to meet their industry requirements. Research councils, both in Australia and beyond, are stakeholders in two ways. They may directly impact on government policies in the present or future, and they may provide a vision of the future of tertiary education and changes which may be required to meet future demands.

As an example, two recent reports have focused attention on reimagining tertiary education (P. Dawkins, Hurley, & Noonan, 2019; Parker et al., 2018). P. Dawkins et al. (2019) have a two pronged approach to this reimagining: rethinking tertiary education and revitalising tertiary education. Rethinking focuses on innovative approaches to responding to the increasing diversity of students and the changing demands of the Australian labour market. This includes getting more cogency between VET and HE that surpasses the "outdated divisions between academic and vocational learning" (p. 2). Revitalising involves a strategic view of participation trends and achieving "an economically sustainable level of participation that meets future workforce needs" (p. 2). The impact on tertiary education providers, if their key policy ideas on rethinking tertiary education are adopted, would include a review of the AQF, reforming tertiary curriculum, promoting a range of pathways for entry into tertiary education, improving student transitions from learning to employment through industry partnerships and work-based learning, and the promotion of local solutions between educational institutions and

industry through relevant local pathways to assist students to succeed in their own communities. Strategies for revitalising tertiary education and growth in participation would also impact on tertiary education providers. These include removal of up-front fees for VET courses, qualifications and curriculum reform as well as improved credit and articulation arrangements allowing VET to be a pathway to HE, increasing "micro learning" to ensure cost-effective upgrading of skills in the workforce and provision of credit towards AQF qualifications, and increased investment by industry in supporting tertiary education for employees.

2.3.1.5 Australian organisations with vested interests in tertiary education

Australian organisations with vested interests in tertiary education may focus on the economic, social, political, or provider interests. For example, the Committee for Economic Development in Australia and the Productivity Commission both focus on the role that tertiary education can play in the economic development of Australia and on helping individual learners and their communities. Special interest groups focus on their constituents and advocate for their needs. For example, The Foundation for Young Australians has released a series of reports identifying what young Australians will need in order to succeed in future workplaces. *The New Work Smarts* (The Foundation for Young Australians, 2017b) used a dataset of twenty billion work hours by twelve million Australians in a year. They identified the impact of automation, globalisation, and the need for flexibility as three major trends. The Foundation argued that these changes have led to an increase in importance of critical and creative thinking and an increase in the need to continuously learn. A number of organisations may be seen as political in nature in that they serve the interests of their members. These include: Universities Australia advocates for the social, economic, and cultural value of higher education and research to Australia and the world; Independent Tertiary Education Council of Australia (ITECA, formerly ACPET) advocates for independent tertiary education providers; National Tertiary Education Union advocates for tertiary educators; National Union of Students advocates for tertiary education learners; and Australian Education Union advocates for TAFE educators. Each of these organisations, and many more, advocate for the interests of their constituents and in so doing contribute to shaping the purposes of tertiary education.

2.3.1.6 International organisations with vested interests in tertiary education

International organisations with vested interests in tertiary education may have broader organisational missions that impact on tertiary education. Three examples are provided here. United Nations Educational, Scientific and Cultural Organization (UNESCO) seeks to build peace through international cooperation in Education, the Sciences and Culture. UNESCO's

Sustainable Development Goals defined in Agenda 2030, adopted by the UN General Assembly in 2015, influences national and international education efforts. The Organisation for Economic Co-operation and Development (OECD) is an international organisation whose stated goal is to shape policies that foster prosperity, equality, opportunity and well-being for all. Australia is a member country. The World Bank Group is one of the world's largest sources of funding and knowledge for developing countries. Its five institutions share a commitment to reducing poverty, increasing shared prosperity, and promoting sustainable development. Much of this work focuses on education in its various forms. Reports, advocacy, agreements and commitments to their agendas influence tertiary education globally as well as in Australia.

2.3.1.7 Influencers within tertiary education

Educational researchers, writers, philosophers, educators, and learners contribute to the shaping of tertiary education including advocating for its purposes. There has been vigorous discussion on the purposes of education, including tertiary education, going back at least a hundred years. These discussions come from different political and ideological viewpoints with some being complementary while others are oppositional to each other. As an in-depth analysis of these viewpoints is beyond the scope of this study, reference will be made to several writers who highlight significant issues related to the purposes of tertiary education. Nussbaum (2002, 2010) argued for a number of purposes for tertiary education and advocated that it should be more than preparation for a career. Tertiary education should enrich life, engage citizens in a rapidly changing and highly interconnected world, and create citizens who are capable of thinking for themselves. Heath (2000) drew on several writers, such as Giroux and Becker, to advocate for education as citizenship. She argued that this form of education encourages learners to reflect on who they are, their roles in society, to make choices, and experience a sense of agency. Further, she argues that teaching methods focusing on the workplace leave learners as passive and uncritical while promoting conformity to the National perspectives of the economic systems in which graduates need to fit. The focus on conformity with economic systems aligns with what is referred to as compliance learning in this study. In contrast, active and critical learners engage in adaptive learning. (See section 2.2.1.1 The 1980s and early 1990s—*The Australian Qualifications Framework (AQF)* for further information.)

In this critical spirit, Barnett (2017), when specifically discussing universities, agrees with descriptions of universities as:

> a space of 'dissensus;, an 'ideal speech situation', in which 'rival and antagonistic views' were proffered 'without condition', and so are able

> freely 'to conduct their intellectual and moral warfare'. In the process, the 'internal goods' of the university would be protected and, in turn, critical thinking and democracy would be enhanced (p. 84).

2.3.2 Returning to the purposes of tertiary education

Two clear purposes have emerged from the groups of influencers outside and within tertiary education (Enomoto, Warner, & Nygaard, 2018; Parsell & Chinchen, 2019). First, tertiary education's purpose is to create an educated public, a civic agenda. Second, tertiary education's purpose is to prepare learners for their future careers, a professional agenda. While these purposes may seem to be in opposition, they are mutually inclusive. Workplaces require educated and civic people to work within them; and an educated public can contribute civically through both their professional and personal activities. These personal and professional purposes have been framed more broadly as the four pillars of learning by Delors (1996, p. 37):

1. *Learning to know*, by combining a sufficiently broad general knowledge with the opportunity to work in depth on a small number of subjects. This also means learning to learn, so as to benefit from the opportunities education provides throughout life.
2. *Learning to do*, in order to acquire not only an occupational skill but also, more broadly, the competence to deal with many situations and work in teams. It also means learning to do in the context of young peoples' various social and work experiences which may be informal, as a result of the local or national context, or formal, involving courses, alternating study and work.
3. *Learning to live together*, by developing an understanding of other people and an appreciation of interdependence - carrying out joint projects and learning to manage conflicts - in a spirit of respect for the values of pluralism, mutual understanding and peace.
4. *Learning to be*, so as better to develop one's personality and be able to act with ever greater autonomy, judgement and personal responsibility. In that connection, education must not disregard any aspect of a person's potential: memory, reasoning, aesthetic sense, physical capacities and communication skills.

These four pillars encapsulate the importance of different forms of learning. Each has a clear focus, a complementarity with the other forms of learning, and move between the individual and the broader society in which individuals exist. Perhaps the prime focus of tertiary education needs to be defined as, and centralised on, learning itself.

2.4 Chapter summary

It is clear that there have been many changes in tertiary education that impel educators to revisit the phenomenon of learning. It can be challenging for tertiary educators and educational institutions alike not to get distracted, side-tracked, or taken off the task of creating opportunities for learning, by constant and rapid changes and increasing regulatory

demands. The lack of clarity about the prime focus of tertiary education has contributed to these difficulties. Tertiary educators need to be responsive to educational, technological, and sociological change processes; they also need to keep their focus on their key purpose—that of creating opportunities for learning.

Chapter 3 (Critical analysis of relevant learning literature) will now examine learning literature relevant to this study.

3 Critical analysis of relevant learning literature

This chapter critiques literature on learning relevant to this study. After reviewing the overall importance of learning and the roles it plays in the life of humans we distinguish informal from formal learning (section 3.1—Importance of learning). An analysis of learning definitions exposes the difficulty in obtaining a clear and agreed view of what defines learning, and in response identifies commonly agreed components (section 3.2—Defining learning: a challenging task). General definitions of learning are reviewed along with learning theories and approaches applicable to tertiary education (section 3.3—Learning theories). These learning theories influence learning and teaching plans within tertiary education institutions and so impact the context of formal learning. Learning theories provide viewing lenses which may impact tertiary educator conceptions and experiences of learning. These theories may also impact perspectives about aspects of learning, the interrelationships between these aspects, and the relationship of learning with other phenomena. As this study targets tertiary educator experiences of learning, rather than theories about learning, a preferred framework for viewing the experience of learning is presented (section 3.4—A transdisciplinary approach to understanding learning). Phenomenography, the methodology used in this study, is introduced. The identification and analysis of findings about learning arising from previous phenomenographic studies highlights the phenomenographic research gaps that this study seeks to address (section 3.5—From convergence to divergence in understanding learning). The chapter is then concluded (section 3.6—Chapter summary) and linked to Chapter 4 (Design and theoretical underpinnings of this study).

3.1 Importance of learning

Learning is at the core of survival for living organisms. The capacity of non-human and human species to learn provides potency and relative immediacy of adaption to variation and changes in their environment. Ormrod (2016) distinguished between the learning of non-human and human species: non-human species rely more heavily on instincts and associative learning; humans, in addition to utilising instincts and associative learning, rely heavily on intentional and reflective learning to survive and thrive. This heavy dependence on extended intentional learning is why D. A. Kolb (2015) called humans a learning species.

3.1.1 Learning and tertiary educators

As suggested in Chapter 1 (Learning and tertiary educators) learning is our adaptive response to the ongoing certainty of contextual variation and change. The need for learning may therefore be seen as constant and continuous, with learning providing us with increased capability, flexibility and adaptability. We may respond to challenges reactively by fitting in, as well as proactively by shaping our worlds. We respond through two distinct learning processes, organic informal and intentional formal learning. The former is largely unconscious and the latter conscious.

A significant difference between human and non-human learning is that humans can access intentional formal learning. Because of this capacity to be intentional, human learning can lead to significant adaption within a single generation. Thus, humans are less dependent upon genetic changes to invoke change inter-generationally (Goss, 2017). This intentional learning is enhanced by the capacity of humans to communicate through language and other symbolic means. As individuals learn, they may communicate with others through language or other symbolic means in order to pass on, and interactively leverage, that learning.

Human learning begins with informal learning from birth. Developmental psychologists, such as C. C. Peterson (2014), argued that human babies arrive with a great capacity to learn. Although initially very dependent on the caregivers around them, within the first two years of life babies have learned to walk, eat solid foods, begin to toilet by themselves, and develop basic language skills in order to communicate. This extended high level of human baby dependence compared to other species may favour increased development of mental and communication capabilities. Informal learning starts at birth, according to the US National Research Council (2012). Ormrod (2016) argued that informal learning may also involve learning how to get on with other people, making decisions about which products to buy and from where, or calculating how much change we should get from a cash purchase. This type of learning often occurs in our day-to-day functioning, often with little conscious attention being paid to it—Jarvis (2006) proposed that this learning was largely in the pre-conscious realm. It is not necessarily intentional, instead emerging from the demands of the situations in which we find ourselves.

In contrast to informal learning, formal learning is designed and intentional. While informal learning happens as part of everyday life, formal learning may be chosen for what Jarvis (2006) designated as purposive learning. Both informal and formal learning, Su (2011) argued, can lead to increased agency in the world. Agency in this context involves "a dynamic and dialectical production of self: (p. 401) with a shift "from the mastery of knowledge (noun) to

the establishment of learning (verb)" (p. 402). However, formal learning, often associated with educational institutions and work environments (US National Research Council, 2012), is designed to bring about specific learning outcomes. Both non-accredited and accredited learning programs are aimed at meeting specific learning outcomes. Additionally, accredited learning programs also lead to a qualification. The Australian Qualifications Framework (AQF) sets down the standards for each of the ten levels of qualifications offered in Australia, including the purpose and requirements of each qualification. These requirements are expressed in terms of knowledge, skills, application of knowledge and skills, and volume of learning (Australian Qualifications Framework Council, 2013b). This framework is discussed in more depth in Chapter 2 (Context of the tertiary educator in Australia).

This study focuses on accredited tertiary education within Australia which has the primary aim of creating intended learning resulting in a qualification**.** The importance of tertiary education is stated in *The Corporate Plan for the Department of Education and Training 2016–2020* (Department of Education and Training, 2016). This is the Commonwealth department which funds many learning institutions. The plan emphasises the creation of learning via its corporate vision of "opportunity through learning" that is achieved through "world-class tertiary education and research" (p. 6). As previously noted, the plan stresses the "fundamental importance of education [as] central to individual opportunity, economic growth, productivity and innovation" (p. 9). In this way, tertiary education has a central role to play in the lives of individuals and the broader community in Australia and beyond.

Having discussed the importance of organism and human learning, the next section explores definitions of learning. Given its common use, defining learning might seem a relatively easy task. Complicating the task of definition, however, are the many ways in which the term is used and interpreted.

3.2 Defining learning: a challenging task

The literature on learning can seem to be largely unassembled, complex, and confusing (Weimer, 2003)**.** Murphy and Knight (2016) argued that the challenge in defining learning arises from both ontological and epistemic issues. They added that variations in both theoretical and empirical foundations also influence significant differences in the viewing of learning, highlighted in section 3.3 (Learning theories). As a result of these differences, the research design of studies into learning vary widely. Variations in *methodology* or strategy applied to answer the research question may include, for example, qualitative, quantitative (Ormrod, 2016), as well as experimental, and quasi-experimental (Murphy & Knight, 2016).

Research *methods* or techniques used to gather data can also vary, impacting on the types of results arising from the research. For example, longitudinal studies focus on changes in phenomena over time whilst cross-sectional studies focus on phenomena at a single point in time. Some studies rely on analysing data generated from a variety of studies, such as in a large-scale secondary data analysis (Murphy & Knight, 2016) or meta-analysis (Hattie, 2009). The research *setting* or the context in which the research takes place also varies and can include naturalistic observations in the field or laboratory experiments (Hattie & Yates, 2014; Horvath, Lodge, & Hattie, 2017). A significant challenge is that it is difficult to identify the individual influence of separate factors in situations where complex interrelationships may exist. Experimental approaches conducted in the laboratory usually aim to control for external variables in order to focus on a single variable. However, learning in 'real-world conditions' involves a complex interplay of factors (Horvath et al., 2017). Identifying and quantifying relationships between variables is complex enough, even in relatively simple and stable conditions. The difficulties escalates when contexts are complex or changing, or where causal rather than correlative relationships are sought. Methodological, ontological, and epistemological differences between research studies add further challenge when comparing results.

Methodological approaches in research are underpinned by disciplinary considerations**.** Each discipline has its preferred or prescribed manner of conducting research and assessment of the veracity of results. A diversity of disciplines contribute to the research on learning. Each discipline has its own "voluminous" literature (Bransford et al., 2000, p. 6). Examples of these disciplines include: philosophy; sciences including biology, neuroscience, psychology including cognitive and developmental; anthropology and other disciplines investigating culture; economics; and design science both in education and information technologies (Bransford et al., 2000; Elias & Merriam, 2005; Merriam & Bierema, 2014; Tokuhama-Espinosa, 2011a, 2011b).

The difficulty in navigating these different disciplines is that words within one discipline are not necessarily understood in the same way by those outside the discipline. Equally, terms may be used in divergent or inconsistent ways within the relevant paradigms in which they are situated (F. Ashworth, Brennan, Egan, Hamilton, & Sáenz, 2004; Ertmer & Newby, 2013; Jarvis, 2015; Ku, Phillipson, & Phillipson, 2015; Tennyson & Volk, 2015). Similar divergent and inconsistent meanings may arise at the level of schools of thought within each paradigm. For example, Tennyson and Volk (2015) argued that behaviourism has different schools of thought based on researchers such as Watson, Thorndike, Pavlov, Skinner, or Guthrie. Murphy and

Knight (2016) divided these theoretical orientations into classical conditioning, instrumental conditioning, drive reduction theory, and operant conditioning. These divergent and inconsistent meanings may also arise at the individual meaning-making level, and may be context-specific. Continuing with behaviourism, Ormrod (2016) offered the example of the confusion when people use negative reinforcement to mean punishment where in fact it means "the removal of a stimulus, usually an aversive or unpleasant one" (p. 70).

The term learning is also defined in journals in different ways. Murphy and Knight (2016) reviewed only one journal in one discipline, *Review of educational research*, and found seventeen explicit definitions of learning within the journal between 1931 and 2015. This gives an indication of just how variable definitions of learning may be. This study does not seek to cogently bring together the ideas from all of these disciplines, paradigms, schools of thought, and individuals. This chapter does, however, examine some common ways in which learning is often understood.

3.2.1 Learning definitions: common and distinctive features

Learning is at the centre of the work of tertiary educators. Yet its meaning is unclear in the educational literature which informs their work**.** Illeris (2007), an educational researcher, determined four ways in which "learning is used in a non-specific manner in everyday language" (p. 2). These are: 1) learning as the outcomes of learning processes, focusing on what has been learned or what has changed; 2) learning as mental processes in the individual, focusing on the processes that allow the outcomes of the learning process to occur; 3) learning as interaction processes between the individual, the material and the social environment, focusing on the preconditions for internal learning processes; and, 4) synonymously with the term teaching, highlighting the fact that learning and teaching are often confused. The first way is a noun; the second and third ways are verbs; the fourth does not directly refer to the phenomenon of learning at all. Each of these common meanings exclusively focus on narrow aspects associated with learning: outcomes; processes; context; and strategies.

Books, articles, and other learning resources often discuss learning without defining it. For example, the Australian MOOC *Contemporary Approaches to Higher Education*, launched in 2018, refers to learning yet the glossary of terms shows no definition of the term. This omission of a definition of learning can lead to a lack of clarity and specificity that fosters confusion. Even more important, in a wider practical sense, lack of clarity and specificity about a goal interferes with the likelihood of achieving that goal. This principle was encoded as the first two elements of the widely cited S.M.A.R.T. goal acronym—**s**pecific and **m**easureable—while the other three elements—**a**ttainable, **r**elevant, and **t**imely—support the first two

(Doran, 1981). If we do not know what learning is, it is then difficult, or perhaps impossible, to know if it has been achieved. As the next section will show, those resources that do define learning seem to offer inadequate and oversimplified definitions or, alternatively, attempt to capture so many features in the definition that it confuses the meaning. This lack of clarity and specificity can add to confusion around the meaning of the word learning and the assessment of whether it has occurred.

Several key definitions of learning will now examined. These are representative of definitions offered by a range of researchers in the field of learning. According to Ormrod (2016) learning is "a long-term change in mental representations and associations as a result of experience" (Ormrod, 2016, p. 20). This definition emphasised that learning goes beyond transitory use of information, has its basis in the brain/mind, and is built on experience. The experience element was also emphasised by D. A. Kolb (2015) who stated that "learning is the process whereby knowledge is created through the transformation of experience" (p. 101). Illeris (2007, p. 3) emphasised that learning is "any process that in living organisms leads to permanent capacity change and which is not solely due to biological maturation or ageing". Ambrose, Bridges, Lovett, PDiPietro, and Norman (2010) defined learning "as a *process* that leads to *change*, which occurs as a result of *experience* and increases the potential for improved performance and future learning" (p. 3). They further explain that learning:

- is a process, not a product
- involves a change in knowledge, beliefs, behaviours, or attitudes which unfolds over time
- is not something done to others but something that learners do for themselves
- is a direct result of how learners interpret and respond to their experiences—conscious and unconscious, past and present (p. 3).

The theme of change is a consistent feature in these definitions of learning. This is consistent with the findings of Murphy and Knight (2016). Illeris' emphasis on learning that was not due to biological maturation was also supported by the analysis from Murphy and Knight (2016).

The Australian Qualifications Framework (AQF) (2013a) suggested that "learning is a process by which a person assimilates information, ideas, actions and values and thus acquires knowledge, skills and/or the application of the knowledge and skills" (p. 97). The AQF definition focused on the input and acquisition aspects of learning. Although it mentions application, it does not appear to deem it a necessary or central purpose of learning as evidenced by its 'and/or' designation. Application was not mentioned by Ormrod, Kolb, or

Illeris. P. C. Brown, Roediger, and McDaniel (2014) suggested application by stating that learning is "acquiring knowledge and skills and having them readily available from memory so you can make sense of future problems and opportunities" (p. 2).

Jarvis (2006) sought to develop a comprehensive definition of learning. In 1987, Jarvis' definition was similar to those already mentioned. At that time he considered learning was the transformation of experience into knowledge, skills and attitudes. However, in 2006 he offered a more complex definition when discussing human learning.

> [Human learning is] the combination of processes whereby the whole person—body (genetic, physical and biological) and mind (knowledge, skills, attitudes, values, emotions, beliefs and senses): experiences a social situation, the perceived content of which is then transformed cognitively, emotively or practically (or through any combination) and integrated into the person's individual biography resulting in a changed (or more experienced) person (p. 13).

In 2009, Jarvis replaced "resulting in a changed (or more experienced) person" with "resulting in a continually changing (or more experienced) person" (p. 25). Although this small change may not seem significant, it does reflect the notion that humans are continually changing. The overall definition, although wordy, reflects the complexity of human learning. Importantly, Jarvis (2006) argued that some of the human processes involved in learning are "extremely difficult to understand" (p. 4).

Alexander, Schallert, and Reynolds (2009) determined nine principles of learning on which their definition of learning was built. These principles are:

1. Learning is change.
2. Learning is inevitable, essential, and ubiquitous.
3. Learning can be resisted.
4. Learning may be disadvantageous.
5. Learning can be tacit and incidental as well as conscious and intentional.
6. Learning is framed by our humanness.
7. Learning refers to both a process and a product.
8. Learning is different at different points in time.
9. Learning is interactional.

The resulting definition they offered was:

> Learning is a multidimensional process that results in a relatively enduring change in a person or persons, and consequently how that person or persons will perceive the world and reciprocally respond to its affordances physically, psychologically, and socially. The process of learning has as its foundation the systemic, dynamic, and interactive relation between the nature of the learner and the object of the learning as ecologically situated in a given time and place as well as over time (Alexander et al., 2009, p. 176).

A comparison between this and Jarvis' definition shows agreement on the multi-dimensionality of learning, the outcome being a change to any dimension of the person, and these changes lead to variation in how the learner interacts with their world. Jarvis' 2009 definition highlights the temporal component through referencing the "continually changing" learner. This matches Alexander et al.'s (2009) reference to "over time" in addition to occurring "in a given time and place". A distinction is that Alexander et al. (2009) emphasised a relationship between the learner and the object of learning, an emphasis that was not explicit in Jarvis' definition.

From this section, what can be reasonably seen as agreed is that learning is fundamentally a change process. Mezirow (2009) contended that the changes, or as he named them the transformations, a learner may experience can be *epochal,* which are sudden and major transformations, or *cumulative,* which are progressive. These transformations involve a combination of observable and unobservable processes. For example, O'Donnell et al. (2016) distinguished between the receptive and expressive language skills that develop over time. What may be observed is a baby moving their mouth into different shapes, repeatedly making sounds, and eventually words that are comprehensible are formed. The joining of words starts in simple ways and gets more complex as the expressive language skills develop. What is not observable are the mental associations which go on to create expressive language. Treadwell (2017) argued that babies learn to speak by watching mouth movements of those around them, listening to the sounds they make, and identifying where they are looking or pointing when they identify a specific object with that specific sound. Perhaps these unobservable processes were what Jarvis (2006) referred to as difficult to understand.

This section offered a selection of key definitions of learning, and identified that there are significant similarities and differences between them. The next section specifically looks at the ways that tertiary educators may gain knowledge of common definitions of learning and facilitating or inhibiting factors of learning—through learning theories. These learning theories are often articulated in tertiary education institutions, accreditation documents, policies and procedures, and as part of the learning and teaching plan for tertiary education institutions.

Learning and teaching plans aim to guide tertiary educators on how the institution expects them to conduct their work. However, tertiary education institutions explicate their guiding learning theories in different forms of documentation and, more recently, on their websites. These theories then underpin the work of the tertiary educators within those tertiary education institutions.

3.3 Learning theories

Learning theories have developed over the last hundred or so years. Merriam and Bierema (2014) argued that while the number of learning theories and how they are best grouped is in dispute, all learning theories "are explanations of what happens when learning takes place" (p. 25). They move beyond simple explanations as they form the basis of how learning, and associated teaching approaches, developed. Chipamaunga (2015) emphasised that these theories "influence the pedagogy of learning" (p. 43). This idea of pedagogical influence is reinforced by Ertmer and Newby (2013) who argued that learning theories provide a source of strategies, a way to select from those strategies, to integrate the selected strategies into the learning process, and a way to predict which strategies may successfully enhance learning.

A brief history of recognised learning theories is offered in section 3.3.1 (History of learning theories).[7] This is followed by an examination of the main learning theories in section 3.3.2 (The main learning theories).

3.3.1 History of learning theories

Prior to the 20th century, subjective methods were used to study thinking and learning. The empirical introspectionists focused on these subjective approaches, such as self-reflection, as a means of understanding these processes (Tennyson & Volk, 2015). Stewart (2012) argued these approaches aligned with a particular philosophical stance. In the late 1800s, the development of psychology as a scientific study of thinking and learning emerged. This gave rise to two parallel paths. Figure 3.1: *Evolution of learning theories over time* shows how Ormrod (2016) saw these as interacting.

[7] For a more comprehensive history, see F. Ashworth et al. (2004) and Tokuhama-Espinosa (2011a, 2011b).

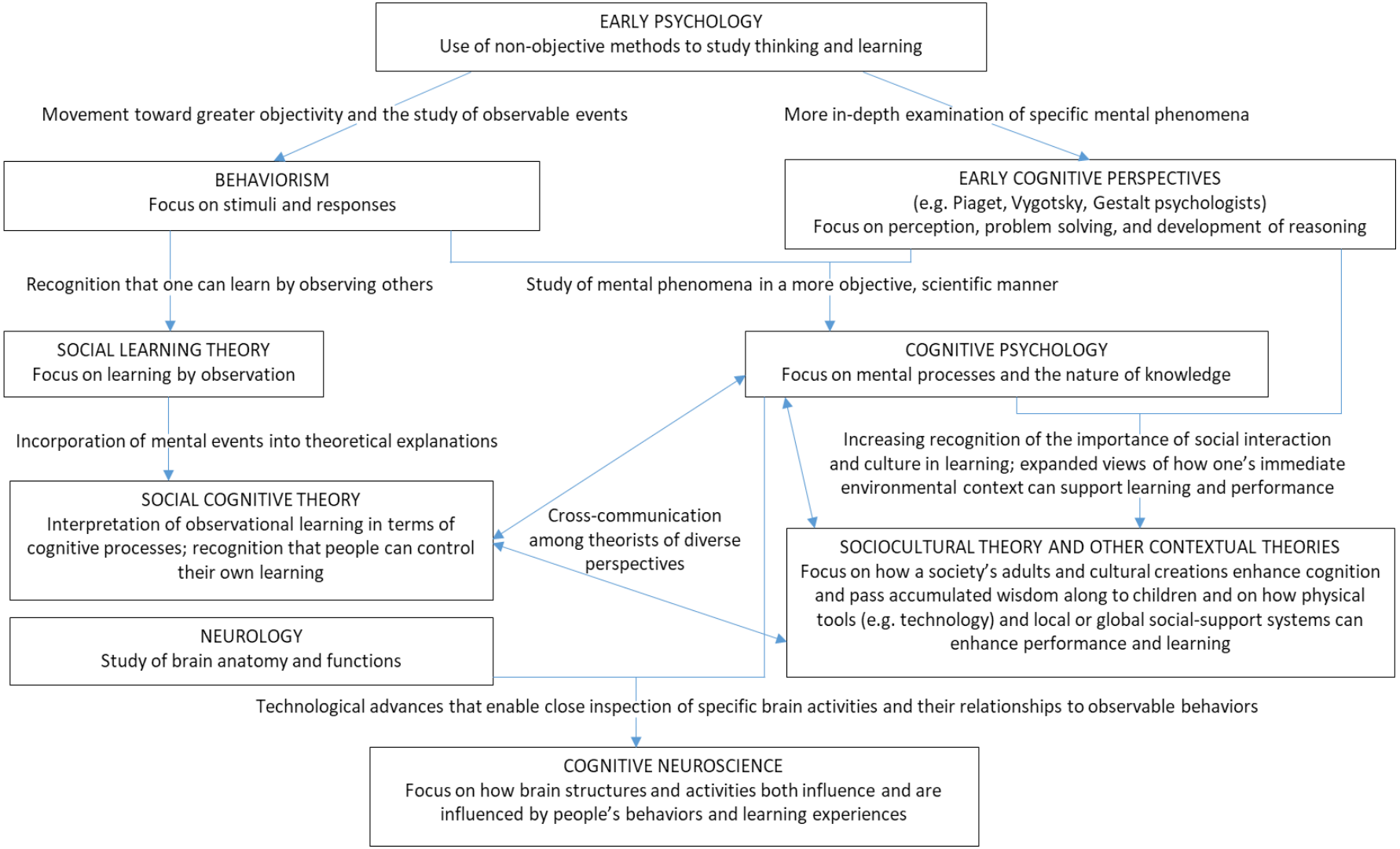

Figure 3.1: Evolution of learning theories over time

Ormrod (2016, p. 25)

Ormrod (2016) argued that when researchers desire greater objectivity in the study of observable events, they limit their understanding to what is observable. When researchers desire to focus on specific mental phenomena which are not necessarily directly observable, they need to develop and test a hypothesis about the specific mental phenomena that underpin the observable. Rather than seeing these as necessarily incompatible desires or goals of research, they may be better seen as complementary.

Four significant points arise from Ormrod's (2016) history of learning theories. First, the theories themselves might seem self-contained and independent of each other. Merriam and Bierema (2014), when discussing constructivism, argued that it is a combination of perspectives that share the idea that learning is the construction of meaning from experience. Constructivists draw from Piaget's cognitivism, Vygotsky's sociocultural perspectives, and Dewey's notion that transactions between an individual and their environment is experience (Merriam & Bierema, 2014). Therefore, learning theories can incorporate significant aspects derived from each other. Second, a later learning theory does not subsume earlier learning theories. For example, cognitive theories do not subsume behavioural theories. Instead, each learning theory operates from its own underpinnings, with its own emphases. Third, learning theories are 'fit for purpose' and so not all learning theories support the understanding of learning in all contexts. For example, competency-based training, Smith (1999) and Wheelahan (2005) argued, focuses on demonstrable outcomes. This approach is often built on a behaviourist approach. In contrast, where professional judgement is required, a constructivist approach may provide a better match. Fourth, although neurology and cognitive neuroscience are mentioned in Ormrod's chart, currently neither has offered a learning theory *per se* although they do offer principles or aspects of learning.

Having provided a brief historical overview of the development of learning theories and the role they may play in developing a sophisticated view of learning, the section now explores the main learning theories in more depth. As mentioned, most tertiary education institutions and the educators working within them will be exposed to the learning theories by name at least. This would likely be the situation for the interviewees in this study.

3.3.2 The main learning theories

The main learning theories commonly identified are behaviourism, humanism, cognitivism, social learning, social constructionism, and constructivism (Merriam & Bierema, 2014). While some learning theories seem incompatible due to their fundamental assumptions, other learning theories can be complementary. Figure 3.2 (Definitions of learning from the main

learning theories) compares the meaning of learning as seen through the perspective of the different learning theories.[8]

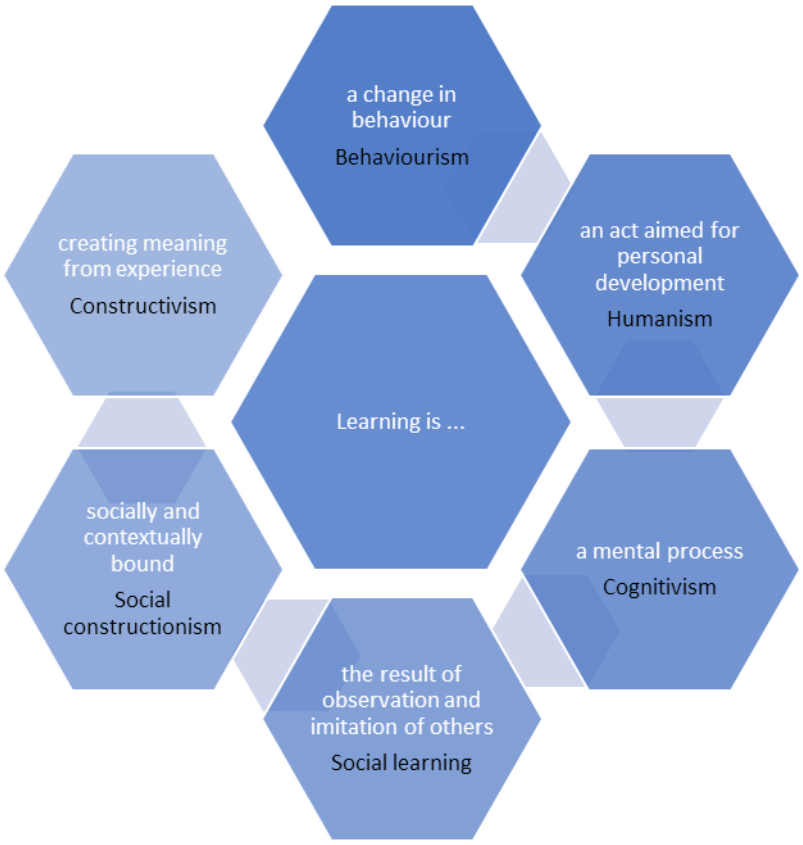

Figure 3.2: Definitions of learning from the main learning theories

Table 3.1 (Summary of key features of the main learning theories) builds on these definitions by adding the purpose of learning, the role of educator and learner, and facilitating factors, for each of the main learning theories.

[8] This section on learning theories offers a brief overview of each learning theory only. Further information can be gained from the references mentioned throughout the section.

Table 3.1: Summary of key features of the main learning theories

	Learning is	Purpose of learning	Role of learners	Role of educators	Factors affecting learning
Behaviourism	a change in behaviour	To produce behavioural change in desired direction	Passive with little awareness of the processes of learning	Arrange the environment in order to elicit the desired behaviour	Environmental influences; Rewards; Punishments; Reinforcement; Extinction
Humanism	an act aimed for personal development	To become self-actualised, mature, autonomous	Active and self-directing	Facilitate development of the whole person	Environmental support; Acceptance; Individual's desire for growth and development; Self-determination
Cognitivism	a mental process	To develop capacity and skills to learn better	Engage mentally with the activities of learning	Structure content	Environmental influences; Cognitive development, strategies, structures; Metacognition; Beliefs; Self-efficacy; Insight; Memory
Social learning	the result of observation and imitation of others	To observe and replicate	Pay attention to what is occurring and replicating	Model and guide	Attention; Modelling; Motivation; Self-efficacy; Observational learning; Communities of learning
Social constructionism	social and context bound	To learn new roles and behaviours	Engage with others in the activities of learning	Model and mentor	Significant environmental influences; Cognitive development; Cognitive strategies; Beliefs; Self-efficacy; Zone of proximal development
Constructivism	creating meaning from experience	To construct knowledge	Active in constructing knowledge	Facilitate the learner's construction of meaning	Prior knowledge; Active construction of meaning; Development of meaning

Adapted from: Bransford et al. (2000); Ku et al. (2015); Merriam and Bierema (2014); Merriam, Caffarella, and Baumgartner (2007); Ormrod (2016)

Each of these key learning theories has been utilised in tertiary education. A brief overview of each learning theory and its usefulness and limitations is now offered.

3.3.2.1 Behaviourism

Behaviourism as a learning theory promotes the idea that the world is real and external to the learner—it is objectivist in nature as it sees meaning as inherent in the assumed separately existing object. The goal of instruction is to map this structure of the world onto the learner (Ertmer & Newby, 2013). Instruction is therefore directive in nature, with the locus of control in learning with the instructor. Learning is seen as the resulting change of observable behaviour that the learner exhibits (Merriam & Bierema, 2014). It does this through the application of stimulus and response. The success or otherwise of learning depends on the way the learner's behaviour is responded to by the educator. The educator aims to respond in order to promote behaviours that are considered appropriate and to extinguish those behaviours that are not considered appropriate (O'Donnell et al., 2016). In this way it promotes learning that complies with the educator expectations.

Positive and negative reinforcement are applied to increase desirable behaviours; punishments are applied to reduce or eliminate undesirable behaviours. Positive reinforcement may include the learner receiving an object such as food, social reinforcement through a smile, attention or praise, or token reinforcers such as a sticker. Negative reinforcement generally involves the removal of a stimulus that is considered aversive or unpleasant (Ormrod, 2016). Central to the effectiveness of a positive or negative reinforcement or a form of punishment is timing. This follows Thorndike's *law of effect* which suggests that events that are followed by satisfying or positive experiences are strengthened; events that are followed by unsatisfying or negative experiences are weakened (O'Donnell et al., 2016; Ormrod, 2016).

The behaviourist approach may be useful for lower levels of learning, including recalling facts, defining and illustrating concepts, applying explanations, or automatically performing a specified procedure (F. Ashworth et al., 2004; Ertmer & Newby, 2013). It is generally agreed that behavioural principles are not adequate to explain the acquisition of higher-level skills or skills that require significant depth of processing, such as problem solving, critical thinking, or inference generating (Ertmer & Newby, 2013). However, it does not account for individual differences, affect, or cognition that may impact on learning.

3.3.2.2 Humanism

The humanistic approach centralised the self and the human qualities of individuals in explaining behaviour and learning (Merriam & Bierema, 2014). This represented a significant shift from the emphasis of behaviourism on external control of learning and the focus on overt behaviour to a focus on the whole human being, especially on their needs, desires, wants, and potential for growth (Merriam & Bierema, 2014). C. R. Rogers (1983) identified five principles that define learning. 1) The whole person, both affectively and cognitively, is involved in learning. 2) Learning is self-initiated even if the impetus or stimulus comes from the outside. 3) Learning is pervasive. This means it makes a difference in the behaviour, attitudes, and perhaps the personality of the learner. 4) Learning is evaluated by the learner in terms of whether the learning meets the needs of what was desired to be known. In this way, the locus of evaluation resides with the learner, not the educator. 5) Meaning is the central element of learning.

The educator's role is facilitation, that is helping, and partnering with the learner in the learning process (Elias & Merriam, 2005). Central to facilitation is the importance of providing the conditions within which learning can take place. The Rogerian core conditions are utilised to create a classroom climate and emotional security for learners:

> … acceptance involves acknowledging and receiving students as they are; genuineness implies that such acceptance is real and heartfelt; while empathy suggests that a teacher is able to appreciate what classroom events feel like to students (Gregson & Hillier, 2015, p. 141).

While Rogers initially proposed and then applied these core conditions in the 1950s until his death in 1987, they are now endorsed by contemporary advances in neurobiology. For example, Immordino-Yang and Damasio (2011) argued that "the aspects of cognition that are recruited most heavily in education, including learning, attention, memory, decision making, motivation, and social functioning, are both profoundly affected by emotion and in fact subsumed within the processes of emotion" (p. 125). Their argument provides a compelling reason to focus on the affective realm of the learning environment. The Organisation for Economic Co-operation and Development (2007) endorsed that "emotions are powerful and inevitable parts of life and learning" (p. 64). This aligns with Immordino-Yang and Damasio (2011) who emphasised "the more educators come to understand the nature of the relationship between emotion and cognition, the better they may be able to leverage this relationship in the design of learning environments" (p. 128).

Cornelius-White and Harbaugh (2010), in their meta-analysis of humanism, identified educators using enquiry-based, experiential, cooperative, active, criterion referenced, and facilitated activities. This is a significant shift away from the traditional, convergent, curriculum-centred, teacher-directed, knowledge-based education to passive students through lecturing and professing. Heim (2012) identified that the use of person-centred learning in the university setting of her study led to active learning, self-direction and critical thinking. A more recent application of these principles has been seen in literature on heutagogy (Hase, 2009, 2011; Hase & Kenyon, 2001, 2003). Heutagogy aligns with the humanistic pedagogy core assumption that Rogers proposed: we cannot teach another person; we can only facilitate their learning.

3.3.2.3 Andragogy and transformative learning

Other learning theories emerging from humanism include andragogy and transformative learning. Knowles (1980) laid down the assumptions of andragogy or teaching adults. Elias and Merriam (2005) argued that these underlying assumptions of andragogy reveal humanistic foundations. The following six assumptions of andragogy from Knowles, Holton, and Swanson (2005) extend the original four assumptions proposed by Knowles (1980):

1. Adults need to know the reason for learning something.
2. Adults are mostly driven by internal motivation, rather than external motivators.
3. There is a change in time perspective as people mature—from future application of knowledge to immediacy of application. Thus, an adult is more problem-centred than subject-centred [content-centred] in learning.
4. The readiness of an adult to learn is closely related to the developmental tasks of his or her social role.
5. An adult accumulates a growing reservoir of experience, which is a rich resource for learning.
6. As a person matures, his or her self-concept moves from that of a dependent personality toward one of a self-directing human being.

In reading Knowles et al. (2005), it is clear that these assumptions draw heavily from humanism. However, their book also draws from a number of the other main learning theories discussed in this section. Rather than having a list of specific strategies, as in the case of behaviourism, andragogy utilises these six assumptions in designing learning experiences.

Transformative learning aligns with the humanistic emphasis on the development of the individual. This approach was advanced through the work of Mezirow in the 1970s. Since then both Mezirow and others, such as Kegan, have further developed the theory. Mezirow defined transformative learning "as the process by which we transform problematic frames of reference ... to make them more inclusive, discriminating, open, reflective and emotionally able to change" (2009, p. 92). In order to bring about these changes, two elements interact. The first is critical reflection and assessment of the sources, nature, and consequences of our habits of mind; the second is a full and free discussion about these reflective practices and the results of them (Mezirow, 2009). In this way, transformative learning moves beyond surface and accumulative approaches to learning and goes into the deeper learning that changes how we know and create meaning (Merriam & Bierema, 2014).

3.3.2.4 Cognitivism

Humanists were not the only ones to challenge behaviourism. Behaviourism was also challenged by cognitivists as mental aspects of learning such as memory, language, and creativity were ignored or could not be accounted for by behaviourist theories (F. Ashworth et al., 2004). Cognitivism shifted the focus of learning from the environment (behaviourism) or the whole person (humanism) to the mental processes of the learner (Merriam & Bierema, 2014). Research utilising a cognitive perspective, therefore, examines learning processes with particular focus on how information is received, organised, stored, and retrieved in humans (Ertmer & Newby, 2013). While still seeking an objective, systematic approach to research, cognitivists appreciate that an internal, mental change in terms of representations and associations (usually called schemas) may or may not be reflected in overt or measurable behavioural change (Ormrod, 2016).

Cognitivism includes a wide range of theorists and concepts. These include Atkinson and Shiffrin (1968) (dual-store model of memory), Miller (1956) (7 items of working memory), Gestalt psychology (organisation in perception, learning, problem-solving), Craik and Lockhart (1972) (levels of processing), Ausubel (1968) (prior knowledge), and Sweller (1994) (cognitive load). Cognitivism recognises that the learner is actively involved in their learning as humans organise their experiences through an interplay of knowledge, beliefs, attitudes, and emotions. The learning process contributes to the organisation of these directly or indirectly interconnected aspects (Ormrod, 2016). Ertmer and Newby (2013) argued that these interconnected aspects are also considered influential in the learning process in cognitivism. This bi-directionality between the impact of learning and an individual's knowledge, beliefs, attitudes, and emotions is a crucial point that is overlooked in some learning theories. For example, when a learner's prior knowledge is challenged, several outcomes may result, as Ormrod (2016) argued. The learner may use their prior knowledge to focus and process new information effectively. Their prior knowledge, or schemas, assist the learning process as the learner engages in reinforcing their existing schemas. A process which Piaget called assimilation. The learner may also adjust their prior knowledge or build a new schema, which Piaget called accommodation. It is through the process of moving between assimilation and accommodation that allows more complex thinking to emerge (Ormrod, 2016). The learner may resist or ignore the new information as it creates too much confusion for them. In this way, their prior knowledge is not affected by new information and the new information is quickly dismissed. The learner may become emotionally agitated as they may feel under threat with such a challenge. This agitation may move the learner from an open and flourishing state,

which facilitates learning, to a state of threat and survival, which inhibits learning (Immordino-Yang & Damasio, 2011). According to both Piaget and Vygotsky, social interaction is central to learning (Ormrod, 2016).

Cognitivism places significant emphasis on memory in all its forms. Memory both stores organised information and affects what we pay attention to as we interact with the environment (Jarvis, 2006; O'Donnell et al., 2016; Sousa, 2017). Different forms of memory exist for all humans. Although they may be given different names by researchers and theorists, they share common attributes. Figure 3.3 (Memory systems and types of memories) identifies the different human memory systems and functions.

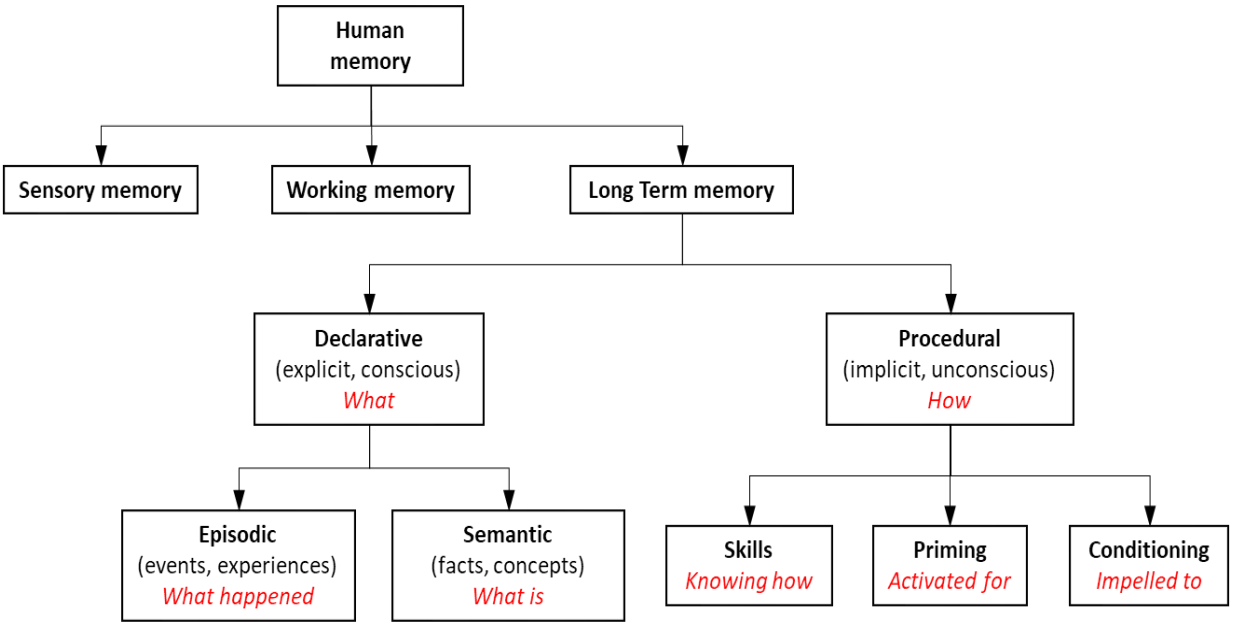

Figure 3.3: Memory systems and types of memories

Treadwell (2017) explicated the connection between knowledge, ideas, concepts, concept frameworks, imagination, and creativity. Knowledge is "a sequence of sensory data that is interpreted and remembered as facts or elements of information that may be developed into actions" (p. 10). The sensory data comes in through the sensory memory, is processed through working memory, and then stored in long term memory in various forms as isolated bits of information. This is similar to multi-structural learning (Biggs & Collis, 1982). Ideas are the "relationship between two or more variables that are dependent on each other and where this idea is understood in one or two contexts" (p. 11). Further questioning and interrogation of these variables lead to the capacity to apply the variables in different contexts. This process

leads to concepts being formed. "Concepts are patterns between two or more variables (processes) that depend on each other (cause-and-effect), with the relationship between the variables is understood in a range of contexts. Once the pattern is recognised the brain immediately maps that pattern and turns into a non--conscious process. We refer to this unique human ability as automaticity" (p. 11). The combination of knowledge, ideas, and concepts form concept frameworks. The movement from separated knowledge and ideas to concepts and concept frameworks shows increasing connections which reflect relational learning (Biggs & Collis, 1982). The processes of combining knowledge, ideas, concepts, and concept frameworks then recombining them in "new and unique ways" involves imagination (p. 12). "Consciously applying our imagination to produce new ideas, concepts, or concept frameworks that have value" (p. 12) reflect extended abstract learning (Biggs & Collis, 1982). Treadwell, Piaget, and Vygotsky shared the idea that over time, and with more time for development, humans move from simple to more complex representations of their world.

Focus is another important aspect of learning. In learning, humans move incycles of raw material of knowledge, ideas, and concepts, to creative mind drifting, and back again (Treadwell, 2017). Kahneman (2013), drawing on the work of Stanovich and West, elaborated on the dual systems theory. The two systems are simply called System 1 and System 2 were described by Kahneman (2013) as:

> System 1 operates automatically and quickly, with little or no effort and no sense of voluntary control (p. 20).
>
> System 2 allocates attention to the effortful mental activities that demand it, including complex computations. The operations of System 2 are often associated with the subjective experience of agency, choice, and concentration (p. 21).

These two systems work together in a complementary fashion. System 1 generates complex patterns of ideas, including impressions and feelings that are the main sources of explicit beliefs and deliberate choices for System 2. System 2 constructs thoughts in an orderly set of steps. Kahneman (2013) argued that System 1 can be described as fast thinking while System 2 can be described as slow thinking. Hattie and Yates (2014) contrasted System 1 and System 2. Some of the key points from their comparison are shown in Table 3.2 (System 1 and System 2 psychological processes).

Table 3.2: System 1 and System 2 psychological processes

Underlying process	System 1 Low cost and fast processing	System 2 High cost and slow processing
Level of awareness	Unconscious	Consciousness expressed in words and feelings
Nature of learning	Can learn implicitly (without words) through behavioural conditioning	Learns more explicitly through using knowledge and thinking strategically
Mechanism of learning	Associations and contingencies. Learning may be generalised through low-level or surface cues.	Uses associations, but stores these as rule-based principles arrived at through analysis and deep inferential processes.
Level of effort	Effort minimal as well-learnt procedures make little demands on focused attention	Effort high, with danger of overload. Attention is focused on one thing at a time.
Activation of memory	Automatic activation within context	Depends on activating content within working memory
Nature of goals being actively pursued	Goals are often implicit or unspoken. Oriented to present.	Goals are consciously represented and often flagged. Oriented to future.
Tactics for solving problems	Heuristic methods such as useful and practical shortcuts. Locate the correct steps in terms of well-honed procedural knowledge.	Careful assessment of all available resources, including declarative knowledge and knowledge of how to access external resources
Major liability	Heuristics have limits. Can induce overconfidence. Also major problem of impulsiveness.	Metacognitive processes are often poorly executed. Also system is lazy, will tire easily, and is inclined to show helplessness symptoms.

Extracts from: Hattie and Yates (2014, p. 299)

A final concept from cognitivism worthy of mention is cognitive load theory which is built on the understanding of brain architecture and how this architecture impacts learning. Cognitive load is the amount of mental resources that the working memory needs in order to process its contents at a given time. Ormrod (2016) argued that "virtually any learning activity imposes a cognitive load" (p. 203). Cognitive load theory helps to explain why "learning can vary from being trivially easy to impossibly hard ... [even when] the tasks may appear to have roughly similar amounts of information yet differ enormously in the effort required to achieve mastery" (Sweller, 1994, p. 295). The identification of three forms of cognitive load is a valuable contribution. These are: intrinsic, germane, and extraneous. Intrinsic load is inherent within the information in a learning experience. Germane load is the level of cognitive activity that is necessary to reach the intended learning outcomes for that learning experience. Extraneous load is cognitive effort that does not help to reach the intended learning outcomes for that learning experience (Sweller, 1994). Distractions, especially when associated with agitating emotions, can increase extraneous load. Utilising cognitive load theory, an educator can develop well-designed instruction that facilitates schema construction and automation.

3.3.2.5 Social learning theories

Learners and learning do not exist in a vacuum. Learners exist within social and cultural worlds that affect their learning. Two learning theories which emphasise the social aspect of learning from different perspectives are the social learning or social cognitive theory (Bandura, 2005) and social constructionism (Vygotsky, 1997). Additional theories that incorporate the social and cultural aspects of learning are situated learning theory, also called situated cognition (Lave, 2009; Wenger, 2009), distributed learning theory, also called distributed or extended cognition (Cash, 2013; Clark & Chalmers, 1998), and connectivism (Downes, 2012; Siemens, 2005). These theories also emphasise that learning does not occur solely within the individual learner (Ormrod, 2016).

3.3.2.6 Social cognitive theory

The central principle of social cognitive theory is that people can learn by observing others' behaviours and the consequences that arise from their behaviours (O'Donnell et al., 2016; Ormrod, 2016). While the behaviourists argued that learning involves behavioural change, Bandura recognised that learning can take place through observation alone and this learning will not necessarily be observable through an individual's behaviour (Ormrod, 2016). This implies that cognition plays a role within learning, something traditional behaviourists would not consider. O'Donnell et al. (2016) clarified that vicarious learning through modelling arises from substituting the experiences of others for our own direct experience. The consequences of the behaviour of another can influence our own behaviour as individuals expect similar consequences for similar actions. If we see another person reinforced for their behaviour, we are more likely to engage in that behaviour through this vicarious reinforcement. We are less likely to engage in an observed behaviour if another person is punished as we are then vicariously punished.

3.3.2.7 Social constructionism

Social constructionism is most associated with the work of Vygotsky (Merriam & Bierema, 2014). His work was conducted primarily in Russia the 1920s and it did not reach the West until the 1960s (Säljö & Veraksa, 2018). Although Vygotsky's learning theory was not fully complete at the time of his death in his 30s, it has provided some critical concepts in education. These concepts include cognitive development through the internalisation of the social and cultural worlds of learning, zone of proximal development and associated scaffolding. Although the primary focus of Vygotsky's work was on children, the concepts discussed in this section have equal applicability to tertiary education and adults. According to social constructionism, cognitive development is mediated by the social and cultural world of the learners which mediate their learning (O'Donnell et al., 2016). Vygotsky argued that the capacity to acquire lower mental functions is biologically based while the development of higher mental functions require society and culture (Matusov, 2015; Ormrod, 2016). Culture provides a viewing framework through which interpretations of experiences can be culturally endorsed. In this way, not only does the cultural and social environment of an individual influence how they think but also what they think about. Säljö and Veraksa (2018) clarified the process by which the cultural and social environment are integrated into the world of the individual. Social interaction or inter-mental processes are then internalised as intra-mental psychological processes. The social interactions provide meanings through language, symbols, art and music—all of which are culturally imbued. This happens both formally and informally and guides the individual learner to attend to particular stimuli and to engage in particular activities. Additionally, the use of culturally embedded cognitive tools enhances their cognitive development. These tools may be physical such as scissors or computers, symbolic such as writing systems or maps, or mental such as studying a textbook or mentally calculating (Ormrod, 2016).

The focus in learning situations is the movement from their current developmental level to their potential developmental level (Tennyson & Volk, 2015). The gap between the current and potential developmental levels is labelled the zone of proximal development (ZPD) (Tennyson & Volk, 2015). While the movement to close this gap can be done individually, Tennyson and Volk (2015) argued that learning efficiency is increased when the learning involves interacting with more competent people. This is a key principle from Vygotsky's theory. These more competent people in a learning environment may include the educator, experts within the field of study, or peers. This principle supports the role of the educator in guiding learners as

well as the role that peers can play in each other's learning. Matusov (2015) emphasised that the ZPD exists for both the learner and the educator or other competent person:

> Both the teacher and the student try to manage the uncertainty that the joint activity creates. During teacher-student instructional interaction, the student learns how to do the classroom activity, while the teacher learns how to guide the student (p. 318).

In this neo-Vygotskian view, both parties assist each other to move from their current to potential developmental levels (Matusov, 2015).

3.3.2.8 Situated learning theory and distributed learning theory

The influence of anthropological and ethnographic studies promoted the development of two different learning theories: situated learning and distributed learning (Säljö & Veraksa, 2018). Each of these theories represent a significant shift from notions of preceding learning theories which posit that knowledge, knowing and thinking exist in the minds of individuals. Instead, knowledge, knowing and thinking are seen to exist in practices, language, artefacts of various kinds, and interactional activities (Säljö & Veraksa, 2018). Principles from both the situated learning theory and distributed learning theory can be seen in connectivism, the work of Siemens and Downes, which will be discussed after these first two theories.

Situated learning focuses on the relationships between people and between people and artefacts in social activity (Waite & Pratt, 2015). Learning is seen as a social process where knowledge is co-constructed, situated in a specific context, and embedded in a particular social and physical environment (Illeris, 2012). Lave (2009) argued that "traditional cognitive theory is distanced from experience and divides the learning mind from the world" (p. 202). From the situated learning perspective, the learning mind is in the world and cannot be separated from it. The social aspect of learning, usually described by Lave and Wenger as a community of practice, is simply a gathering of people where we engage in situated activities. Wenger (2009) emphasised the 'everydayness' of communities of practice:

> Communities of practice are an integral part of our daily lives. They are so informal and so pervasive that they rarely come into explicit focus, but for the same reasons they are also quite familiar. Although the term may be new, the experience is not. Most communities of practice do not have a name and do not issue membership cards (pp. 212–213).

The members of the community of practice co-construct understanding through the use of apprenticeship, problem solving, and shared interests (Waite & Pratt, 2015). Lave (2009) clarified the process of learning in a community of practice. A beginner or novice begins on the periphery of the community of practice. This community of practice is an authentic context in which the members collaborate, interact, and engage with each other. Through these

processes, the beginner or novice becomes more expert and eventually becomes the expert or master. While the community may have a stable core membership, other people may be engaged in the community of practice for a specific purpose. For example, the community of practice may be focusing on learning a language. A native speaker of that language may be invited into the community of practice to enhance the learning. Another example may be a video conference with the leading expert in the topic area the community of practice is focused on. The leading expert is a temporary member in the community of practice and, like the native speaker, assists the members of the community of practice to move towards mastery. Merriam and Bierema (2014) emphasised that this mastery of knowledge, knowing, and thinking resides within the community of practice which has learners with different levels of knowledge and mastery. In other words, the mastery does not reside within the individual member but resides within the community of practice.

Tertiary education is a gathering of communities of practice in which learners contribute their different levels of knowledge and mastery to their community. Educators form one community of practice; learners form another community of practice; and educators and learners together form yet another community of practice, referred to as a community of inquiry by Garrison (2011). A community of inquiry is an educational experience that relies on the development of three interdependent elements—social presence, cognitive presence, and teaching presence. Presence, in this context, Garrison (2011) expounded, "is a sense of being or identity created through interpersonal communication" (pp. 22–23). Social presence focuses on identifying with the group, communicating purposefully in a trusting environment, and developing personal and effective relationships. Cognitive presence relates to the ability to construct and confirm meaning via reflection and discourse. Teaching presence relates to designing, facilitating, and directing cognitive and social processes in order to promote both personally meaningful and educationally worthwhile learning outcomes (Garrison, 2011; Garrison & Arbaugh, 2007).

An important aspect of situated learning is the group's collective knowledge base that is regarded as distributed knowledge (Ormrod, 2016), also referred to as distributed learning theory. Clark and Chalmers (1998) extended the notion of distributed knowledge to one of the extended mind – the first wave of extended cognition (Cash, 2013). They posited that the boundary between an individual's cognition and the external environment, including other people and their cognition, is not as rigid as once thought. Clark and Chalmers (1998) use the parity principle in order to make their argument. They explained the parity principle in the following manner:

> If, as we confront some task, a part of the world functions as a process which were it done in the head, we would have no hesitation in recognizing as part of the cognitive process, then that part of the world is (so we claim) part of the cognitive process (Clark & Chalmers, 1998, p. 29).

The second wave of distributed knowledge and extended cognition was offered by Menary (2007) via cognitive integrationism (Cash, 2013). Contrary to the parity principle, he argued that external cognitive resources do not duplicate the processes that can be done 'in the head'. Instead, external cognitive resources augment or complement the brain's basic cognitive capacities. In this way, the external cognitive resource does things that cannot be done 'in the head'.

Cash (2013) offered the third wave through socially and culturally distributed cognition. All three theories have contributed to the hypothesis of distributed knowledge and extended cognition, which Cash (2013) vividly describes as "a vision of human cognition as supported by promiscuously opportunistic, soft-assembled, hybrid coalitions of neural, bodily and environmental elements" (p. 61). The bi-directionality of these elements is captured in the following quote:

> Individuals' ideas, decisions, plans, and other cognitive products collectively produce socially distributed institutions, practices and tools. And these, in turn, developmentally shape and structurally influence individuals' cognitive capacities and the tools we think with. We are individually products, and collectively are producers, of these cognitive institutions, tools, and practices (Cash, 2013, pp. 63-64).

3.3.2.9 Connectivism

Connectivism, developed by Siemens and Downes, is remarkably similar to the central tenets of situated and distributed learning theories. For example, Siemens (2005) argued that learning was not an internal and individualistic process. Instead, learners rely on connecting specialised nodes or information sources to form networks. Downes (2012) expanded two ideas on which connectivism was built. Firstly, the human brain is a network made up of connected individual entities. The knowledge in the human brain emerges from these connections. Secondly, our social and cultural worlds within our communities are also created through a network of connected individual entities. Learning involves connections between specialised nodes and sources of information resulting in actionable knowledge (Siemens, 2005). The specialised nodes and sources of information may include other people as well as "databases and search engines [that hold] thousands of blogs, news articles, book excerpts, journal articles, video clips, and podcasts" (Kropf, 2013, p. 13).

Unlike earlier learning theories which focused on acquisition and holding information within the individual learner, much of which can get outdated quickly, the emphasis in connectivism is on currency. In this way, the capacity to 'know more' was superseded by the importance, relevance, and currency of what one knows at a given time (Siemens, 2005). This aligned with the 'pulling in' of knowledge just-in-time, and centralised 'access to' rather than 'accumulation of' relevant knowledge (Evans-Greenwood et al., 2015). Of particular note, our 'right' answers today may be 'wrong' tomorrow. Thus, connectivism accounts for the increased rapidity of change learners now experience in their lives (Siemens, 2005). It is a movement away from the rigidities of individualistic mindsets and fixed belief systems towards more flexible, creative, critical, adaptive and interrelated modes of thinking.

3.3.2.10 Constructivism

Constructivism has been both defined and characterised in a variety of ways (T. Anderson, 2016; Van Bergen & Parsell, 2018). For example, O'Donnell et al. (2016) argued that all cognitive theories were constructivist in nature as they emphasise the active involvement of the learner in meaning making. In contrast, Ormrod (2016) included constructivism in her discussion of cognitivism whilst acknowledging that not all cognitive theorists suggest that learners are actively involved in constructing their knowledge. Merriam and Bierema (2014) contested this merging of cognitivism and connectivism on the basis of several significant distinctions between them. Cognitivism focuses on the mental processes of the learner; constructivism focuses on the construction of meaning from experience (Merriam & Bierema, 2014).

Merriam and Bierema (2014) agreed that while information processing theorists in cognitivism put the mind back into the equation of learning, reality was still seen as existing 'out there' independent of any observer or observation. Knowledge of this reality was to be gained by the educator and transferred into the learner. This represents an objectivist 'out there' ontology in cognitivism. Constructivism, in contrast, is consistent with a pluralistic ontology. Flowing from this ontology is a set of principles which underpin constructivism. In this way, constructivism is a learning theory "where ontology and epistemology are inseparable" (Dall'Alba & Barnacle, 2007, p. 682). That is, both the reality of an experience and any associated meanings arise within, are determined by, and reflect unique frame of reference and contextual factors. It may be this emphasis on an inseparable ontology and epistemology that leads some researchers to refer to constructivism as a "philosophy of learning" (T. Anderson, 2016, p. 38).

Maina, Craft, and Mor (2015) argued that constructivist theories of learning are supported by recent educational research. So rather than seeing constructivism as a standalone, single

learning theory, it may be more accurate to see constructivism as a learning theory that supports a variety of perspectives within other learning theories that assume that learning is a construction of meaning from experience (Merriam & Bierema, 2014). For example, constructivism emphasises the importance of ascertaining prior knowledge, existing cognitive frameworks, and uses dissonant events (relevant information) to drive conceptual change. These notions arise from Piaget, Ausubel, and Vygotsky (Cakir, 2008). Constructivism emphasises the contextual nature of learning, use of authentic task and contexts, and communities of practice, drawing on the work of Wenger and Lave (Merriam & Bierema, 2014). Dewey's notion of experience as a transaction between an individual and the environment reinforces the importance of context in constructivism (Merriam & Bierema, 2014). Collaboration in knowledge construction, promoted by Vygotsky, is also a principle of constructivism (Peters, Shmerling, & Karren, 2011). The development of radical constructivism by von Glasersfeld (1995), one version of constructivism, also drew heavily on the work of Piaget.

Constructivism works on a set of principles rather than prescriptions. From the perspective of von Glasersfeld (1995) knowledge is not passively received through the senses or by way of communication; instead it is actively built up by the learner. In stark contrast to behaviourism with its notion of tabula rasa and reliance on transmission of knowledge from the educator to the learner, constructivism promotes active engagement in meaning seeking and construction (Merriam & Bierema, 2014). Ormrod (2016) provides the following to capture this difference:

> Teachers can't "pour" knowledge into the heads of students as they might pour lemonade into a glass; rather, students must make their own lemonade (p. 175).

In this way, learners create meaning rather than acquire it. Unlike the behaviourist notion of mapping the objective world onto the learner, the focus is on assisting the learner to construct their own world (Ertmer & Newby, 2013). Cakir (2008) argued that the active internal construction of meaning is promoted by social interaction. This social interaction offers multiple perspectives and sustained dialogue which leads to effective learning (T. Anderson, 2016). The learner experiences the world, interactions with others, and these create the learner's unique reality. This experiential world is the starting point on which to build learning (Bransford et al., 2000). The educator's role in the learning process is to provide guidance on how to construct meaning and how to effectively monitor, evaluate, and update constructions. This is an ongoing process as the internal representations of knowledge are always open to change (Ertmer & Newby, 2013).

All learning theories offer some insights into learning. Unfortunately, their potency has been somewhat diminished by the rigidity of their boundaries which has led to epistemological battles for which learning theory is most correct. As a tertiary educator, I have bypassed this battleground by applying a theoretical integration approach which has been utilised in counselling for many years:

> Theoretical integration refers to a conceptual or theoretical creation beyond a mere blending of techniques. This route has the goal of producing a conceptual framework that synthesises the best aspects of two or more theoretical approaches under the assumption that the outcome will be richer than either theory alone (Corey, 2013, p. 424).

3.3.2.11 The importance of learning theories

A variety of researchers have argued that a tertiary educator's preferred learning theories underpin actions that s/he may take. Murphy and Knight (2016), Merriam and Bierema (2014), and Tennyson and Volk (2015), all argued that learning theories affect: how learning is conceptualised; how predictions are made about learning outcomes; how factors that affect learning are considered; and the development of approaches to improve learning. I would add that it also impacts other areas such as assessment of learning, the structure of learning activities, the tone of communications, and learner engagement.

Drawing on the work of a number of learning researchers, Murphy and Knight (2016) raised two central epistemic questions in relation to learning theories:

> What is the source of knowledge (that is, where does it come from)?
>
> Where does knowledge ultimately reside?

Figure 3.4 (Source of knowledge and where it resides) identifies potential answers to these questions.

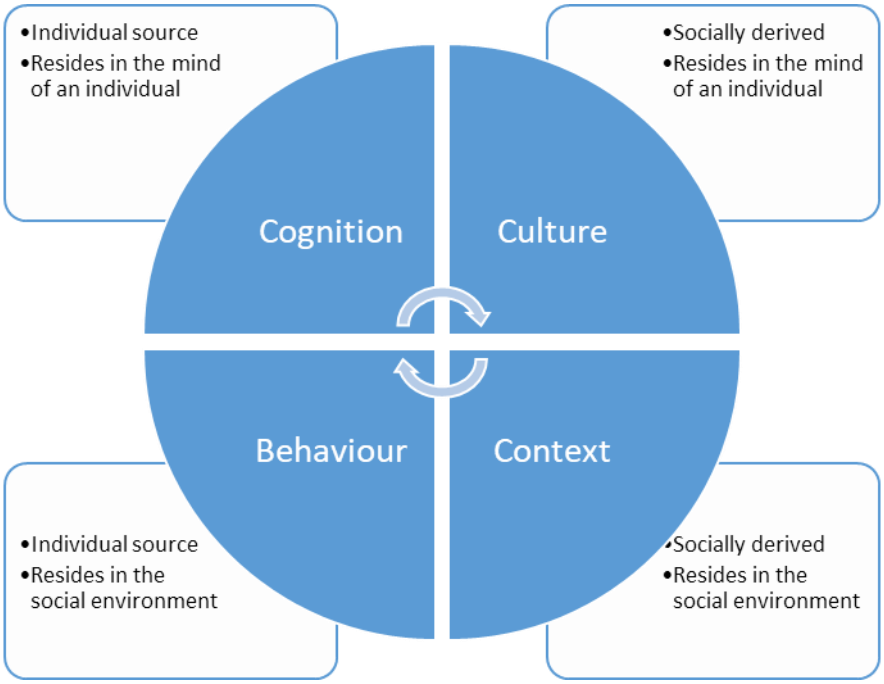

Figure 3.4: Source of knowledge and where it resides

Source: Adapted from Murphy and Knight (2016)

Murphy and Knight (2016) noted that the source of knowledge can be individually informed or socially derived with the resulting knowledge residing within the mind or within the environment. Given that learners are in a highly connected world, the arrows in the middle of Figure 3.4 (Source of knowledge and where it resides) emphasise the endlessly interactive nature of the individual and their social world. From this perspective, the individual mind and the physical, social, and cultural environments with which the individual interacts, all contribute to the creation of knowledge, and have knowledge residing within them.

Ormrod (2016) argued that in order to maximise meaningful learning, educators need to have an understanding of factors which affect learning as well as theories or explanations of how and why these factors affect learning. Similarly, educators need an understanding of the various forms of learning, the contexts and purposes they best fit, and the best means of facilitation (Kandlbinder & Peseta, 2009, 2011). To be effective, these understandings need to move beyond theoretical and espoused conceptions to deeply embedded professional practice through the educator's theory-in-use (Argyris & Schön, 1974). Educators who operate without a solid understanding of educational principles and theories may miss opportunities for meaningful learning. For example, they may inadvertently create approaches to learning that emphasise rote and regurgitation without understanding. Educational material, activities, and assessments may not be constructively aligned (Biggs, 2014), may encourage surface and

strategic approaches to learning, and may lack logical foundations for relational development (Biggs & Tang, 2011; Trigwell & Prosser, 1991).

Each of the learning theories may offer valuable insights into learning. Each tends to have distinctive perspectives and emphases that sets it apart from the others. However, they may also have strong commonalities, and shared or consistent understanding and explanations. As a result, common themes run through different learning theories as can be seen when comparing situated learning theory, distributed learning theory, and connectivism. Each of these theories shares the perspective that learning does not just happen within the mind of the individual. Instead, it can happen between people and between people and non-human apparatus. T. Anderson (2016) argued that a major philosophical shift in relation to learning theories has occurred in tertiary education since the late 20th century. There has been a movement away from objectivist theories of learning, notions of stable knowledge that needs to be acquired and stored, and a single known truth. This has resulted in more dynamic conceptions of learning and an ongoing development of learning theories (T. Anderson, 2016).

The choice of which learning theories are utilised at a given time depends on a number of factors. For example, Ertmer and Newby (2013) identified that the level of learner's task knowledge and level of cognitive processing required by the task are central to this choice. They suggested low task knowledge and low cognitive processing requirements are supported by behavioural strategies. Mid-range task knowledge and mid-range cognitive processing requirements are better supported by cognitive strategies. Higher task knowledge and higher cognitive processing requirements may be better supported by constructivist strategies. For example, when teaching first-aid and how to utilise different slings to immobilise injuries, I utilised more behaviourist strategies. This was because the slings had to match 'best practice' and no variation was allowed. In contrast, when discussing the intersection of social, legal, and ethical issues in counselling, constructivist strategies were utilised. The complexity of the intersection of these issues meant there were no predictable or simple answers. Teasing out the underlying principles and applying them to real-life situations was best achieved through these constructivist strategies. These choices emphasise the importance of adaptive fit rather than black-and-white truths or 'model' approaches.

Having explored a number of learning theories, the next section focuses on one transdisciplinary approach that can orientate educators to learning literature in a more cogent manner, that of experiential learning.

3.4 A transdisciplinary approach to understanding learning

> It can scarcely be denied that the supreme goal of all theory is to make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience (Einstein, 1934, p. 165).

Subject to a model meeting the objectives for which it is designed, the simpler the model, according to the principle of Occam's razor, the more it should be preferred. Complexities within and differences between the various disciplines, paradigms, schools of thought, learning theories, and individual orientations easily confuse the understanding of learning as a phenomenon. Therefore, a simple yet effective model, a transdisciplinary approach with less restrictive ways of understanding learning is preferred. This model, experiential learning, developed by Kolb and Fry in the 1970s and revised more recently by D. A. Kolb (2015), has variously been described as emerging from humanism, cognitivism, and constructivism. It draws on a number of writers already mentioned in the learning theories. However, experiential learning moves beyond any discipline and/or paradigmatically-restrained learning theories.

Experiential learning has also been chosen on the basis of five connected criteria. First, it is a robustly researched model which has been shown to have significant efficacy (D. A. Kolb, 2015; Sousa, 2017). Second, it aligns with the scientific model of learning, based on extensive research (Caine & Caine, 2006; Cozolino & Sprokay, 2006; A. Y. Kolb & Kolb, 2018; Sousa, 2017; Taylor, 2006; Treadwell, 2017; Wolfe, 2006; Zull, 2006). Third, while it draws on a variety of theorists and principles already discussed in the learning theories section, it is not beholden to any one learning theory (Bartle, 2015a; D. A. Kolb, 2015). Fourth, experiential learning has been proven as an effective approach beyond educational institutions, especially in team building, work environments, and other places where graduates of tertiary education will be involved before, during and after their formal education (Bartle, 2015a; Cozolino & Sprokay, 2006; Deslauriers, Rudd, Westfall-Rudd, & Splan, 2016; Harfitt & Chow, 2018; Wachenheim & Ahlness, 2017). Fifth, the iterations of experiential learning since 1975 have effectively embodied emerging research from a variety of disciplines (Caine & Caine, 2006; A. Y. Kolb & Kolb, 2018; D. A. Kolb, 2015). Thus, it is a robust, flexible, dynamic, and useful model for tertiary education and for understanding the different aspects of the phenomenon of learning.

3.4.1 Experiential learning

Experiential learning was first introduced by D. A. Kolb and Fry (1975) through a chapter in Cooper's book *Theories of group processes.* The chapter was entitled *Toward an applied theory*

of experiential learning. This was followed by the publication of Kolb's 1984 book *Experiential learning,* revised by D. A. Kolb (2015) for the second edition. Kolb's work originally drew on a range of significant and well-regarded theorists including William James (dual knowledge theory), Kurt Lewin (action research, the T-group), Carl Rogers (self-actualisation through the process of experiencing), Carl Jung (specialisation to integration), John Dewey (experiential education), Jean Piaget (constructivism), Lev Vygotsky (zone of proximal development), Paulo Freire (dialogue among equals, praxis), and Margaret Parker Follett (learning relationship, creative experience). These and other theorists who have contributed to experiential learning, such as Polanyi (tacit and explicit knowledge), and Fry (learning environments), are discussed in Kolb's updated 2015 book in more depth than this study can cover.

Experiential learning has had more recent support through the work of Treadwell (2017) on *The Global Curriculum Project*. This project commenced in 2004 and has developed a useable and up-to-date scientific model for how the brain learns based on the latest neuroscientific, psychological and sociological research. Iterations and refinements have occurred through the implementation of the model in schools in Dubai, Australia, and New Zealand. Of particular note in relation to experiential learning is the alignment between Treadwell's scientific model of learning and the dialectics within Kolb's experiential learning model. This connection will be discussed in more depth after experiential learning is introduced.

The Organisation for Economic Development has worked extensively in researching learning. The principles developed in the 2017 *The OECD Handbook for Innovative Learning Environments* and the 2018 *Teachers as Designers of Learning Environments* complement the earlier 2007 *Understanding the Brain: the Birth of a Learning Science*. Each of these documents provides support for aspects of experiential learning based on the latest research available at the time of their preparation. While not suggesting that we discard all learning theories and information that has come before now, it is important to note that we know more about learning now than ever before. So adjusting learning and teaching to what aligns with these latest insights, rather than utilising 20th century approaches to learning for 21st century learning, is critical (Treadwell, 2017; Zull, 2006).

D. A. Kolb (2015) reported that subsequent to its introduction, experiential learning has been researched via nearly 4,000 research projects, in thirty different professions and academic disciplines, in many countries including the United States, United Kingdom, Australia, China, Japan, Brazil, Norway, Finland, Sweden, Netherlands, Thailand, India, and Canada. Whilst some criticisms exist of this particular model, Kolb addressed these sufficiently in Chapter 2 in *Understanding the learning cycle*. Additionally, the modelling of the interdependencies and

interactions between the experience-thought and reflection-action polarities is not learning-theory dependent, and so not subject to the inherent limitations, or narrowed viewing lens, of any learning theory.

Experiential learning is an approach that has been widely tested and shown to be an effective way of creating learning from experience. Bartle (2015a, p. 8) argued that experiential learning, through its focus on "connections and collaboration through constant critical reflection" supports the development of skills to "navigate a rapidly shifting landscape and critically reflect on the knowledge and skills [needed] to adapt to multiple situations". It is for these reasons that experiential learning is presented as a transdisciplinary model of learning that is suitable for the 21st century.

3.4.1.1 Central tenets of experiential learning

Kolb's central argument is that learning arises from the transformation of experience. This transformation occurs through the resolution of the tension between dialectics. The first dialectic is the prehension or grasping experience through experiencing or thinking. The second dialectic is the transforming experience through reflecting or acting. Figure 3.5 (Dialectics of experiential learning) offers a graphic form which will be added to in subsequent figures.

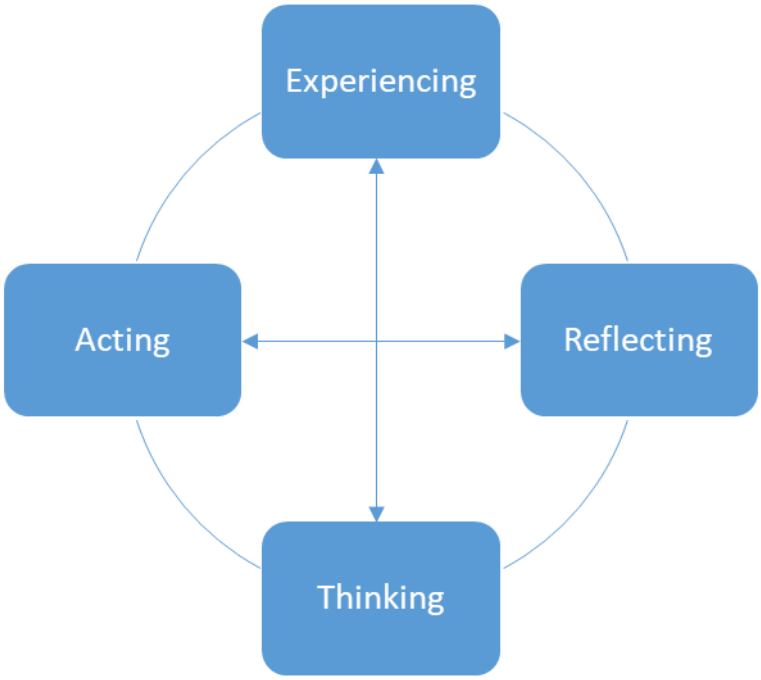

Figure 3.5: Dialectics of experiential learning

The first dialectic of prehension or grasping requires integration of experiencing or thinking. Experiencing incorporates all aspects of an individual including their psychological and

affective aspects, prior knowledge gained through previous experiences and reflection upon them, and apprehension of as many of these aspects is possible. It is a subjective experiencing. Thinking requires a more objective or analytic perspective in order to comprehend the experience. In experiential learning, experience is termed concrete experience (CE), thinking is termed abstract conceptualisation (AC). The second dialectic of transforming requires integration of reflecting or acting. Reflecting on and observing experiences from different perspectives relies on intellectual operations. This can be done alone or with others as part of the process. Acting involves experimenting with behavioural actions in order to transform them. In experiential learning, reflecting is termed reflective observation (RO), acting is termed active experimentation (AE).

Experiential learning regards learning as a process and arises from the continual movement between the dialectics of prehension or grasping and transforming. Of significance is the dynamic nature of experiential learning. The "endlessly recurring cycle not a linear process" (A. Y. Kolb & Kolb, 2018, p. 8) aligns with the notion of lifelong learning where learning is seen as a continual process across the lifespan (Stine-Morrow & Payne, 2015; UNESCO Institute for Lifelong Learning, 2015). It also aligns with more recent neuroscientific support for how humans learn (Sousa, 2017). This neuroscientific support includes the work of Zull (2006) who emphasised the importance of engaging the four pillars of learning:

> … learning is powerful and long-lasting in proportion to how many neo-cortical regions are engaged. The more regions of the cortex used, the more change will occur. Thus, learning experiences should be designed to use the four major areas of neocortex (sensory, back-integrative, front-integrative, and motor). This leads to identification of four fundamental pillars of learning: sensing, remembering, theorising and acting (p. 5).

Zull's (2006) diagram of the learning brain integrates four pillars, neocortex areas, and the experiential learning cycle (Figure 3.6: The learning cycle and the brain).

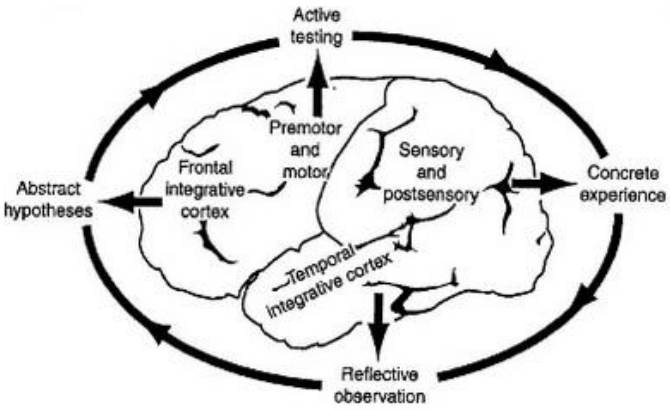

Figure 3.6: The learning cycle and the brain

Source: A. Y. Kolb and Kolb (2018, p. 10)

Zull's work provides the biological substrate for the experiential learning cycle, something that will be discussed in more depth in Chapter 6 (Linking tertiary educators' experiences of learning to theory and context). A further insight is based on learning and memory systems explicated by Treadwell (2017). Table 3.3 (Learning and memory systems) shows the connection between the learning and memory systems as well as the probable timescale of human usage for each learning system and its assessed efficiency.

Table 3.3: Learning and memory systems

Probable timescale	Learning system	Memory system	Efficiency
>2,000,000 years	Senses	Temporary and short term	Excellent
60-100,000 years	Sequencing (speaking/listening)	Long-term	Very good
<100-400 years (for most people)	Rote learning	As above but due to its relatively short history it is very poor	Very poor
> 80,000 years	Ideas	Semantic	Excellent
> 50,000 years	Concepts		Excellent
40-60,000 years	Creativity		Very good

Adapted from Treadwell (2017, p. 46)

Treadwell (2017) developed the scientific model for how the brain learns in which he proposed four +(1) learning systems:

1. perceiving our world and storing sensory data
2. sequencing so we can learn to speak and listen and carry out apprenticeship learning
3. developing ideas, concepts and concept frameworks
4. applying knowledge, ideas and concepts creatively to develop new knowledge, ideas and concepts that are innovative and ingenious

+ (1) the adaptation of sequencing to remember knowledge via rote.

In comparing two typical tasks, driving a car and learning to read, a stark contrast is seen in the efficiency of the learning systems. The two tasks are both cognitively demanding in different ways. Treadwell (2017) describes the differences that emerge:

> Interestingly, after only a few hours in the driver's seat, the learner driver is managing the driving process with relative ease, despite the nervousness of the parent or instructor. After the same amount of time, our emergent reader-writer is still struggling to remember the shape of just a few letters of the alphabet. Driving takes about 50 hours to comprehend and apply, while reading and writing take 2,000–4,000 hours, resulting in a significantly variable distribution curve of success.
>
> What could explain the vast difference in the speed and success of these two learning processes? And no, it has little to do with the respective ages of the learners or their desire to learn—initially both are very keen to achieve success. One of these learning processes appears to be significantly more efficient, while the other is quite inefficient (p. 14).

The example supports the idea that the four systems are engaged in learning to drive while learning to read relies heavily on rote learning—the most inefficient system. Treadwell (2017) argued that aligning with 'natural learning systems' and reducing rote learning will promote efficient learning. The natural learning systems align with Kolb's four points on the dialectics:

1. perceiving our world and storing sensory data (Concrete Experience)
2. sequencing so we can learn to speak and listen and carry out apprenticeship learning (Reflective Observation)
3. developing ideas, concepts and concept frameworks (Abstract Conceptualisation)
4. applying knowledge, ideas and concepts creatively to develop new knowledge, ideas and concepts that are innovative and ingenious (Active Experimentation).

D. A. Kolb (2015) stressed that "the opportunities for deep learning are enhanced with a balance use of all for learning modes" (p. 93). He argued that learners need to involve themselves within the concrete experiences, reflectively observe their experiences from a variety of perspectives, develop logically sound theories (AC), and use these theories to make

decisions and solve problems (AE). By doing so, the learner moves from actor to observer and from involvement to detachment. This recursive cycle means that: concrete experiences form the basis for reflective observations; reflection observations are assimilated and distilled into abstract conceptualisations; abstract conceptualisations provide new implications for action; these implications are tested through active experimentation and become guides in creating new experiences. Figure 3.7 (Experiential learning cycle) shows these modes in their recursive cycle.

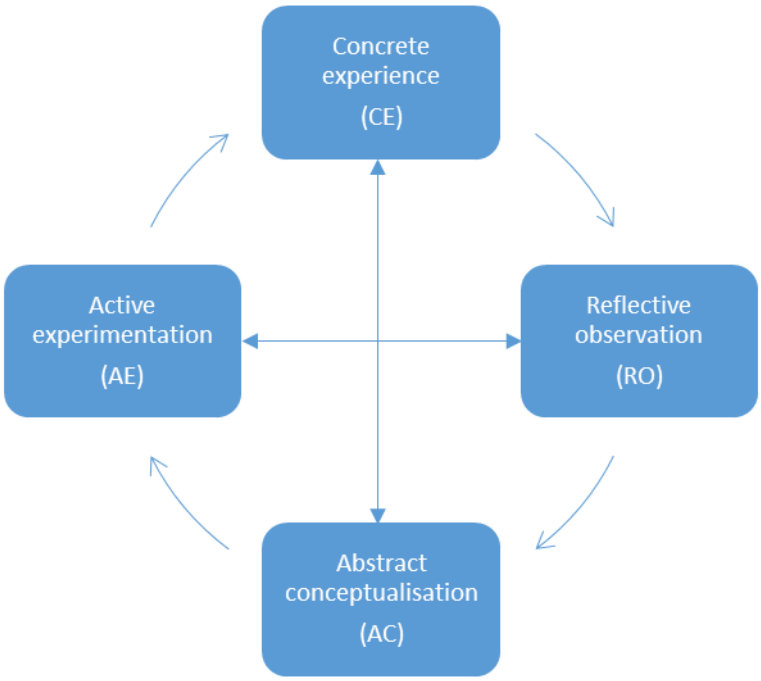

Figure 3.7: Experiential learning cycle

Source: D. A. Kolb (2015, p. 67)

Chapter 2 (Context of the tertiary educator in Australia) argued for agile and flexible learning in order to meet the demands of changing environments. Where tertiary educators put their focus is influenced by their answers to the core epistemic questions raised by Murphy and Knight (2016):

> What is the source of knowledge (that is, where does it come from)?
>
> Where does knowledge ultimately reside?

In experiential learning, knowledge arises from and resides within experience. However, for the learning and resulting knowledge to arise, the experience needs to be apprehended, reflected upon, thought about, and then experimented with or applied. D. A. Kolb (2015) emphasised the importance of developing the capacity for experiencing (CE), reflecting (RO), thinking (AC), and acting (AE) in order to become a flexible learner. In this way, learners and educators alike can incorporate the affective, perceptual, symbolic, and behavioural aspects of learning. A. Y. Kolb and Kolb (2018) argued that being dogmatically caught in abstract conceptualisation leads to being closed to new experiences; being caught in concrete experience clouds clear thoughts. However, abstract conceptualisation can reshape how we experience, concrete experiencing can promote reconsideration of entrenched beliefs, reflective observing can identify and correct errors and refine future action, and active experimentation can reduce incessant rumination (A. Y. Kolb & Kolb, 2018).

3.4.1.2 Moving from individual to group learning

In practice, experiential learning can be applied to individual or group learning. This is important for tertiary educators as the learning often occurs within groups. These groups may include students/learners, colleagues, researchers, and communities. D. A. Kolb (2015) implied that his own work had moved beyond the individual as he explored organisational learning. He identified the work of a group of Japanese researchers, Nonaka, Toyana, and Konna, whose work in the 1990s extended the individual focus to *ba,* the time and space necessary for individuals to meet and interact for knowledge creation. The modes and the learning spaces Nonaka, Toyana, and Konna developed are shown in Figure 3.8 (Spaces for knowledge creation).

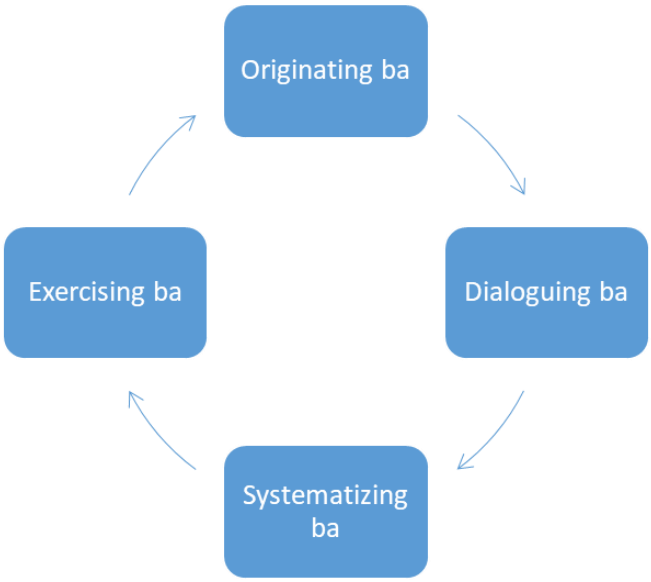

Figure 3.8: Spaces for knowledge creation

The originating ba aligns with concrete experience as it is where individuals share and empathise with each other. The dialoguing ba surfaces tacit knowledge through the sharing of different mental models. This aligns with the reflective observation mode. The systematizing ba involves abstract conceptualising of explicit knowledge which is then put into written form so that it can be communicated to larger groups. The exercising ba translates the explicated knowledge into action. This aligns with the active experimentation mode and also lays down the now tacit component of knowledge which will affect the next originating ba or concrete experience. This approach can be seen in tertiary education via the use of small group activities. Individuals form a small group in order to explore a specific issue, for example the importance of listening skills when working with other people. Learners may talk about the concrete experiences where people have used effective or ineffective listening skills. Through the sharing of their experiences, and the empathising of others with those experiences, their tacit knowledge about listening is surfaced. This is reflected upon by all members of the group and systematised into, for example, a summary of effective and ineffective listening skills. This is then communicated to the larger group. In undertaking a small group activity like this, both the individual's within the small and large group develop new explicated and tacit knowledge which they can apply to the practice of listening.

3.4.1.3 Learning environments that apply experiential learning

The way a learning environment functions is underpinned by the discipline and profession expectations of graduates. D. A. Kolb (2015, pp. 276-279) draws on the work of his colleague

and co-author of the original chapter on experiential learning, Ron Fry. The focus of Fry's unpublished PhD research is on learning environments that focus on one of the four modes. Figure 3.9 (Learning environments) highlights Fry's learning environments.

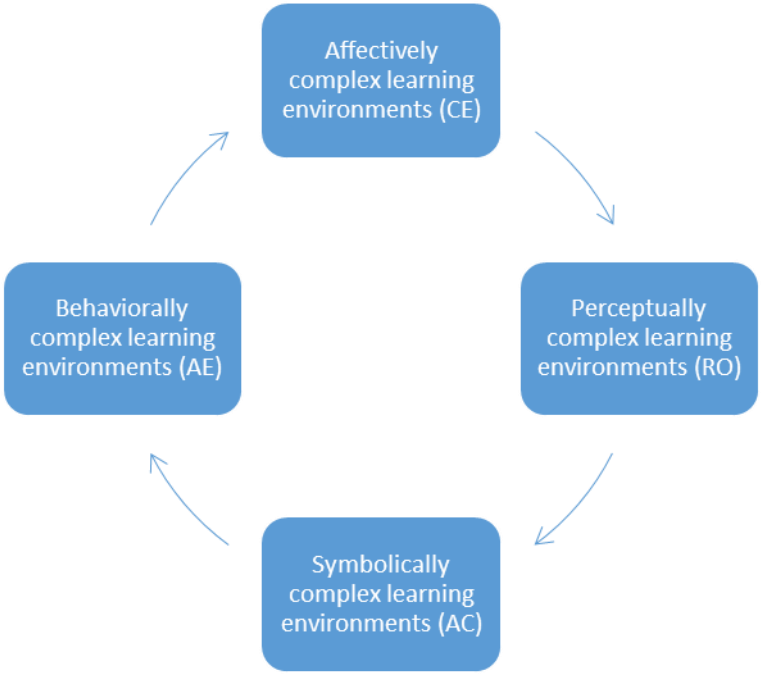

Figure 3.9: Learning environments

Affectively complex learning environments (CE) emphasise experiencing being a professional in the field of study. Activities simulate what learners would do as graduates. Reflection on these experiences generate insights and feelings about themselves and are extended through discussions with peers or the educator. The educator is a role model or professional who interacts in a collegial manner. Feedback from the educator or peers is personalised, not comparative.

Perceptually complex learning environments (RO) aim to understand something, for example, connections between concepts. Learners are encouraged to view from different perspectives (their experience, expert opinion, literature) and in different ways (utilising different senses). The emphasis is on the process rather than on the solution. Learners conclude, answer, and define criteria of success for themselves. Others' ideas, opinions, and reactions lead to the determination of their perspective. The educator is a process facilitator and uses a non-evaluative stance. Instead of providing answers and critique, the educator promotes further inquiry.

Symbolically complex learning environments (AC) involve the learner in solving problem which usually have a right answer or a best solution. The abstract source is presented to guide and

constrain. The learner needs to recall rules, concepts, or relationships via memory. The educator's role includes judging and evaluating learner output, enforcing methodology, timekeeping, and enforces schedules of events. The educator aims to immerse the learner in the analytical exercise necessary to reach a solution. The right or best solution, expert opinion, or rigid criteria imposed by the educator or the field of study measures success.

Behaviourally complex learning environments (AE) emphasise actively applying knowledge or skills to a practical problem. There is less emphasis on the right or best answer. The application aims to be an authentic issue that the learner could expect to face as a professional. Completing the task is essential so an externally imposed deadline, for example, may be provided. However, the learner manages the application and completion within that timeframe. The learner, therefore, makes choices about how to proceed. The educator is coach or advisor when requested by the learner. Success is measured against the achievement of the criteria for task.

The diversity of learning environments and their connectivity in experiential learning reinforces the opportunity to incorporate strategies from a number of different learning theories. For example, principles from humanism, such as attending to affect and reflection, may apply in the affective and perceptually rich environments. Cognitivism strategies, such as concept mapping and attention to cognitive load management, may apply in the symbolically and behaviourally rich environments.

3.4.1.4 Experiential learning and tertiary education

D. A. Kolb (2015) argued that experiential learning offers a validated way of creating learning from experience. The cycle of learning it proposes incorporates four modes of learning: experiencing (concrete experience), reflecting (reflective observation), conceptualising (abstract conceptualisation), and applying (active experimentation). These four modes of learning can be used as the basis of developing and extending apprehension skills (Bennett, Power, Thomson, Mason, & Bartleet, 2016), self-awareness (Falgares, Venza, & Guarnaccia, 2017), cognitive skills (De Souza, Coelho, Esteves, Da Silva, & Dos Santos, 2013), self-assessment of learning (Bartle, 2015a), and as the basis of educational design (Fry cited in D. A. Kolb, 2015, pp. 276–279). Bartle (2015a) argued that individuals currently and in the future need to navigate a rapidly shifting landscape, critically reflect on the knowledge and skills they have, and need to adapt to multiple situations—these needs, Bartle emphasised, are met by experiential learning.

In summary, experiential learning offers a research-supported model of learning. It captures the key elements of many of the learning theories discussed in this chapter. It is also supported by the research of Treadwell, Zull, and others that bring together the latest understanding of how humans learn. Taking advantage of the learning systems that have naturally developed over human history, and reducing the reliance on inefficient rote learning, can lead to efficient, flexible, integrated, durable and responsive learning. D. A. Kolb (2015, p. 49) offers the following additional points about learning from the experiential learning perspective:

> Learning is the process whereby knowledge is created through the transformation of experience. This definition emphasizes several critical aspects of the learning process as viewed from the experiential perspective. First is the emphasis on the process of adaptation and learning as opposed to content or outcomes. Second is that knowledge is a transformation process, being continuously created and recreated, not an independent entity to be acquired or transmitted. Third, learning transforms experience in both its objective and subjective forms. Finally, to understand learning, we must understand the nature of knowledge, and vice versa.

The concepts raised in this quote are aligned with the notion of learning being a complex phenomenon (Säljö, 2009). They will be discussed in more depth in Chapter 6 (Linking tertiary educators' experiences of learning to theory and context) along with other significant points about experiential learning in the 21st century.

3.5 From convergence to divergence in understanding learning

Until recently learning theory has mostly followed developments in psychological theories and so has inherited the affordances and limitations of those theories. A shift beyond the narrowed confines of individual learning theories to a more fluid and purpose-focused way of understanding the phenomenon of learning seems a more useful way of understanding learning. This movement away from the convergent psychological theories of learning is supported by Säljö (2009) who argued, "the challenges of the more anthropological, interactional, social, and sociocultural perspectives are now so obvious that the classical psychological interpretation of learning is under pressure" (p. 203).

No single definition fits all uses or purposes of the term 'learning'. A more effective way of exploring learning may be to begin with recognition of the diversity of purposes and contexts in which learning is conceived and experienced. Such a meta-stance may better highlight the specific emphases of the different frameworks through which learning is seen. This approach may help build complementary, informative, and purpose-driven ways of conceptualising learning. To this divergent end, this study turned to phenomenographic studies into learning.

Phenomenographic studies of learning seek qualitatively different ways in which learning is seen, experienced, and/or understood. Rather than converging on narrow beliefs of how learning should be understood, it diverges into a broader exploration of the phenomenon experienced.

Whilst much scientific research looks for objectively 'correct' ways of understanding phenomena, this learning research, like phenomenographic studies generally, favours seeking expression and understanding of subjective experience as seen through the eyes of individuals. It seeks to identify and analyse common patterns among these expressions of experience. For this experience-led inquiry, phenomenography was chosen. Phenomenography emerged as a qualitative research approach in the 1970s. Researchers at The University of Gothenburg in Sweden, including Ference Marton, Lennart Svensson, Lars Owe Dahlgren and Roger Säljö commenced with two questions:

> What does it mean to say that some people are better at learning than others?
>
> Why are some people better at learning than others? (Marton, 1994b, p. 4424)

In contrast to the general trend in educational research at the time, phenomenographers did not apply cognitivistic explanations or mental models of cognition to their research nor did they take a quantitative approach (Svensson, 1994, 1997). Rather than converging on a single definition of learning or a single explanation of the mechanisms of learning, phenomenography instead diverged into mapping "the qualitatively different ways in which people experience, conceptualise, perceive and understand various aspects of, and phenomena in, the world around them" (Marton, 1986, p. 31).

Marton and Booth (1997) argued that phenomenography gives priority to experience when seeking to gain new insights into aspects of learning. Phenomenography adopts a non-dualistic stance which sees meaning emerging from the experiential relationship between individuals and the phenomenon of learning (Trigwell & Ashwin, 2006). A focus is placed on others' experiences and interpretations of these experiences. This is seen both in the data gathering and iterative data analysis stages of a phenomenographic research project. Although the research will have one or more open questions which will focus the direction of the interview, these questions allow the interviewee to respond on the basis of what is important to them (Entwistle, 1997). The interviewees' account of their experience is clarified throughout the interview by the use of probes (Bowden, 2000b). Probes are also often used to gain a deeper understanding of the experience the interviewee discusses. For example, 'Could you give me

an example of that please?' or 'You mentioned VAK. What do you mean by that?' The driver behind the use of probes is to avoid the assumption that the researcher 'knows' what an interviewee means by terms or theoretical concepts used. This reduces unnecessary inferences and assumptions. Data gathering is focused on capturing the experience of the interviewee with as little interference or assumption as possible. The iterative data analysis allows the data to determine the outcomes of the research (Stenfors-Hayes, Hult, & Dahlgren, 2013). The specific description of the phenomenographic iterative data analysis is offered in Chapter 4 (Design and theoretical underpinnings of this study).

Phenomenographic researchers describe the results of their study as outcome spaces. The outcome space is made up of two parts: categories and a hierarchy. Categories highlight the qualitatively different ways in which learning has been seen while the hierarchy shows the relationship between the qualitatively different ways of seeing learning (Marton, 1978; Postareff & Lindblom-Ylänne, 2008). In other words, the individual categories form the hierarchy. Each category is placed within the hierarchy and described with a category identification (one, two, three or A, B, C), a descriptive word, sub-clause or sentence that captures the central meaning of that category, and a description of the attributes of the category (Åkerlind, 2005b). The descriptive word, sub-clause or sentence that captures the central meaning of a category is usually referred to as a conception (Marton & Booth, 1997). An important distinction needs to be made here about individual conceptions and collective conceptions. Individual conceptions refer to the ways in which an individual makes sense of their experience or some aspect of their experience within the world (Booth & Ingerman, 2008). This is contrasted by the collective conception that phenomenographers determine in their analysis of the merged data from all interviewees (Marton & Booth, 1997). While there is a complementary relationship between individual and collective conceptions, when talking about the outcome space the conception only refers to the collective and not the individual.

Phenomenography was chosen for this study in order to capture the qualitative differences in tertiary educators' experiences of learning.[9] The chapter now turns to an analysis of various phenomenographic studies and their focus.

[9] Further information on phenomenography and its applicability to this study can be found in Chapter 4 (Design and theoretical underpinnings of this study).

3.5.1 Relevant phenomenographic studies

Phenomenographic studies have explored a number of areas both in and beyond education, including learning. Ireland, Tambyah, Neofa, and Harding (2009) reinforced Marton's (1986) grouping of phenomenographic studies into three lines of development: 1) studies that focused on learning approaches and students' learning outcomes; 2) studies that examined learning in various domains; and 3) studies beyond education. However, my literature review resulted in four clusters. They were: 1) studies on learning approaches and students' learning outcomes; 2) education studies not solely focused on learning as a phenomenon; 3) studies beyond education; and 4) studies solely focused on learning as a phenomenon—the most relevant to this study's focus.[10]

These four clusters were identified after an extensive literature review of phenomenographic studies. The search for relevant phenomenographic studies began with the search criteria 'phenomenographic studies on learning' in Macquarie University databases. This garnered just under 2,500 reports which were assessed for relevance to this study. A variety of search techniques followed including searches focused on major writers who were repeatedly cited in the research reports, various relevant keywords, reviews of academically current articles in specific relevant and reputable journals (especially peer reviewed journals), and journal links to 'similar articles'. Searches were also undertaken using Google Scholar. The initial search focused on studies on learning was broadened to phenomenography in general. These searches were updated at least 10–12 times throughout the candidature period with particular focus on recently published studies, special issues in journals, and the identification of new applications of phenomenography both within and beyond learning.

3.5.1.1 Phenomenographic studies solely focused on learning as a phenomenon

This section examines phenomenographic studies focused on learning, as these relate directly to my research on learning experiences of tertiary educators. Table 3.4 (A sample of phenomenographic studies focused on learning as a phenomenon) provides a number of studies and their findings.

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[10] Appendices provide details of phenomenographic studies in these four categories:

Appendix A:Phenomenographic studies on learning approaches and learning outcomes

Appendix B: Phenomenographic studies in education not solely focused on learning

Appendix C: Phenomenographic studies beyond education

Appendix D: Phenomenographic studies solely focused on learning as a phenomenon

Table 3.4: A sample of phenomenographic studies focused on learning as a phenomenon

Resource	Conceptions – Learning is seen as:					
Asikainen, Virtanen, Parpala, and Lindblom-Ylänne (2013) [Finnish HE]	1. Reproducing knowledge	2. Using knowledge in practice	3. Integrating new knowledge with prior knowledge	4. Evaluating different views	5. Creating one's own worldview	
Boulton-Lewis, Marton, Lewis, and Wilss (2000) [Aboriginal & Torres Strait Islander students]	1. Acquiring knowledge 1a. Acquisition – increasing knowledge 1b. Acquisition – using knowledge	2. Understanding 2a. Understanding – acquisition 2b. Understanding – acquisition and use 2c. Understanding – relating, elaborating, analysing	3. Personal growth			
Brownlee, Purdie, and Boulton-Lewis (2003) [Australian student teachers]	1. Acquisition	2. Changing behaviour	3. A process of making meaning	4. Changing as a person		
Bruce and Gerber (1995) [Lecturers about student learning]	1. Acquiring knowledge through the use of study skills in the preparation of assessment tasks	2. Absorption of new knowledge and being able to explain and apply it	3. Development of thinking skills and the ability to reason	4. Developing the competencies of beginning professionals	5. Changing personal attitudes, beliefs, or behaviours in responding to different phenomena	6. Participative pedagogic experience
Dahlin and Regmi (1997) [Nepalese 14-25 year olds]	1. Change in behaviour or way of life	2. Change of consciousness or understanding	3. Change of both understanding and behaviour			
Duarte (2007) [Portugese geography students]	1. Knowledge increase	2. Memorisation and reproduction	3. Memorisation and application	4. Understanding	5. Re-interpretation	6. Personal change

Resource	Conceptions – Learning is seen as:					
Eklund-Myrskog (1998) [Finnish nurses]	1. Remembering and keeping something in mind	2. Understanding	3. Applying knowledge based on understanding	4. Getting a new perspective	5. Forming a conception of one's own	
Eklund-Myrskog (1998) [Finnish car mechanics]	1. Remembering	2. Applying knowledge based on knowing how to do	3. Understanding	4. Forming a conception of one's own		
Marshall, Summer, and Woolnough (1999) [UK engineering students]	1. Memorising definitions, equations and procedures	2. Applying equations and procedures	3. Making sense of physical concepts and procedures	4. Seeing phenomena in the world in a new way	5. Change as a person	
Marton, Dall'Alba, and Beaty (1993) [UK social service students]	1. Increasing one's knowledge	2. Memorising and reproducing	3. Applying	4. Understanding	5. Seeing something in a different way	6. Changing as a person
Paakkari, Tynjälä, and Kannas (2011) [Finnish student teachers of health education]	1. Reproduction of acquired health knowledge	2. Application of health knowledge	3. Developing personal meanings on health matters	4. Transformation of individual thinking	5. Personal growth	6. Collective meaning making
Säljö (1979) [Swedes]	1. Increase of knowledge	2. Memorising	3. Acquisition of facts, procedures, etc., which can retained and/or utilised in practice	4. Abstraction of meaning	5. An interpretive process aimed at the understanding of reality	
Zhao (2017) [Chinese international economics and trade undergraduates]	1. Language improvement	2. Increase of new knowledge	3. Memorising and reproducing when necessary, particularly for exams (including two subcategories)	4. Application of knowledge for various purposes	5. Making sense of the knowledge acquired	6. Gaining a new perspective to view reality 7. Personal change and growth based on an extensive understanding of learning

The conceptions of learning that arose from the studies in Table 3.4 (A sample of phenomenographic studies focused on learning as a phenomenon) were analysed by finding the similarities and differences between them. The following categories emerged as representative of the majority of studies:

1. Increasing knowledge
2. Memorising and reproducing
3. Acquisition and application of knowledge
4. Abstracting or evaluating meaning
5. Developing new understanding
6. Changing as a person, including beliefs, attitudes and behaviours.

The first three categories focus on the taking in and storing of information for later use. Category 1, increasing knowledge, focuses on the quantitative increase of information which is minimally processed or reflected upon in order to form knowledge (van Rossum & Hamer, 2010). Van Rossum and Hamer (2010) argued that this category focuses on an indiscriminate collection and possession of whatever knowledge is on offer. The category 1 understanding of learning takes no substantial account of variations in filtering, organisation, processing, integration with existing knowledge, robustness of storage, or potential for reproduction or other practical usage. It is data gathering for data gathering's sake. It implicitly equates learning with passive receipt of data in symbols (words, images) rather than in experiential form. It fails to value the connection of learning to personal meaning, treating all data as being of equivalent (null) personal value, and is not dissimilar to typing meaning-disconnected words or numbers into a computer. The focus is on the signs and symbols, rather than their practical purpose. The stance of the learner is passive and compliant. Meaning is taken to objectively exist in the object (knowledge) rather than being actively constructed in any form.

Category 2, memorising and reproducing, focuses on rote memorising and reproducing knowledge as required. This is commonly the focus of educational assessment tasks such as quizzes or written answers where true replication of course material is the top priority. The associated learning intention is replication in order to pass a particular assessment. This view of learning shares the same characteristics as described above for category 1, with the exception of category 2's purpose-led focus, the purpose being compliance and true replication of data in the same form as received. This understanding of learning takes no account of contextual variations in application, and so like category 1, does not require the use

of judgement. The resulting compliance learning may serve the purpose of providing memory pegs which may assist a subsequent process of familiarisation. Like category 1, the lack of organisation and connection to personal purpose likely results in a lack of durability of any learning.

Category 3, acquiring and applying knowledge, focuses on gaining and utilising previously stored data. This data may be organised and transformed to suit application. Organisation of data for application involves some level of transformation of data into information. Information is purpose-driven organisation of data. Information-based knowledge can be applied to given situations. This application requires responses to known contextual variables within the given situations. Van Rossum and Hamer (2010) argued that learners may start to reflect on what is being learned and decide whether or not it may be useful in the future. They further argued that learning at this stage does not involve changing knowledge or procedures, more memorising those that are given to the learner. These first three categories represent quantitative conceptions of learning where learning is seen "as if it were limited totally to the tasks of learning imposed by a learning situation" (Marton & Booth, 1997, p. 38). Further, Marton, Dall'Alba, and Beaty (1993) argued that the first three conceptions focus on knowledge that is to be acquired by learning. It is objectivist in ontology as knowledge is "seen as something ready-made, given, something that exists 'out there', waiting to be picked up, taken in and stored" (p. 288).

Marton et al. (1993) argued that gaining of meaning is missing in the quantitative categories whereas it is central to these final three categories. Category 4, abstracting or evaluating meaning centralises the learner as the creator of meaning. It draws on the personal nature of learning (Marton et al., 1993). Category 5, developing new understanding, arises as the learner creates meaning through deeper learning strategies, examination of a variety of viewpoints, and situating the learning in the bigger context or picture (van Rossum & Hamer, 2010). The learner is no longer simply in receipt of information and knowledge; they have internalised a way of thinking that leads to an "informed view" (Beaty, Dall'Alba, & Marton, 1997, p. 156).

Category 6, changing as a person, including beliefs, attitudes and behaviours, is an outcome of learning. Specifically, it is a change within the learner that may involve a change in behaviour, attitude, belief perspective, or some combination of these (Beaty et al., 1997; van Rossum & Hamer, 2010). These represent understandings of learning which "look beyond the tasks in themselves to the world that the tasks open for them" (Marton & Booth, 1997, p. 38).

Phenomenographic researchers including Zhao (2017), Marton and Booth (1997), Edmunds and Richardson (2009), Chiou, Liang, and Tsai (2012), Lonka and Lindblom-Ylänne (1996), Byrne and Flood (2004) and Minasian-Batmanian, Lingard, and Prosser (2006), argued that understandings of learning are significant as they affect approaches to learning. E. R. Peterson, Brown, and Irving (2010) argued that the "reason why many researchers have persisted in trying to identify key conceptions of learning is the underlying belief that conceptions of learning have the potential to explain different learning behaviour" (p. 168).

Understandings of learning form part of what Trowler and Cooper (2002) called Teaching and Learning Regimes (TLRs), describing TLRs as "a shorthand term for a constellation of rules, assumptions, practices and relationships related to teaching and learning issues in higher education" (p. 221). These beliefs, associations, and practices are largely unconscious, tacit, and unidentified, yet impact on day-to-day educational activities. A key point from this TLR analysis is that implicit unconscious meanings, rather than conscious abstract-conceptual meanings, drive automatic responses and that the vast majority of our actions are conditioned in line with these implicit meanings. That is, implicit meanings drive our theory-in-use.

Tertiary educators' understandings of learning are central to their conscious and intentional educational practice. That is, conscious and symbolic meanings drive espoused theory. Conscious and intentional application of espoused theory has some potential to influence implicit meanings and theory-in-use, yet this pathway is far from simple or guaranteed. Further, conscious and intentional education practice may often be in conflict with implicit and unconscious educational practice (Argyris & Schön, 1974; Laksov, Nikkola, & Lonka, 2008). Where this occurs espoused theory conflicts with theory-in-use, implicit and explicit goals are in conflict, and related affective disturbances are likely to interfere with educational objectives.

Marton and Booth (1997) argued that conceptions of learning form the basis of how learning is seen, as well as approaches to learning. Their use of, and central focus on the term 'conceptions', which is a merging of conscious abstract conceptions and unconscious implicit perceptions as if they were identical, is widespread in phenomenographic literature. In my view, this merging of the experiential with the abstract-conceptual obfuscates the distinct processes at play. For this reason, it is considered important to obtain a better understanding of the distinct ways in which tertiary educators experience as distinct from conceptualise learning.

3.5.2 Gaps in phenomenographic research

The review of phenomenographic research identified four significant gaps in relation to tertiary educators' experiences in learning:

1. There is a lack of prior phenomenographic research into tertiary educator experiences of their own learning in teaching and personal contexts. Tertiary educator personal experiences of learning have the potential to significantly influence their professional teaching practice in tertiary education. In addition, tertiary educators' lifelong interest and central engagement in the processes of learning make them ideally situated to form in-depth understandings of learning.

2. There is a lack of prior phenomenographic research into facilitating and restraining factors in learning. Tertiary educators may be the best placed professionals to identify, through their experiences, what currently inhibits and facilitates learning in tertiary education.

3. There is a lack of prior phenomenographic research into learning from a mentor perspective. Tertiary educators commonly influence future educational practice through their mentor role.

4. Prior phenomenographic studies into learning have conflated all forms of meaning-making into a single entity, typically called 'conceptions'. This conflation belies the significant and fundamental differences in the processes, the levels of consciousness, the affective/cognitive domains, and the outcomes of meaning-making when formed through direct sensory versus abstract conceptual mechanisms. Of these four key gaps in research, this is potentially the most significant, the most wide-reaching in impact, and with most potential applicability to future research.

By addressing these gaps, this study offers the first phenomenographic inquiry into:

- learning that is grounded in tertiary educators' experiential observations
- specific observations of aspects of learning from the professional educator perspective
- specific observations of aspects of learning from the educator as learner perspective
- specific observations about what factors facilitate and inhibit learning from the perspective of both a professional educator and a learner
- what tertiary educators would discuss about learning when mentoring new educators
- tertiary educators' concepts of learning grounded in experiential observations.[11]

A distinctive characteristic of phenomenographic research is that it seeks divergence rather than convergence in understanding. That is, it seeks qualitatively different ways of understanding a phenomenon. Special attention is placed on experiential observations in order

[11] See section 1.1.2 (Significance of this study) for further details.

to avoid concepts 'about' learning. In the preliminary development and testing of questions for this study, I found a marked difference in the responses when people were asked a concept-focused question (*What is learning?*) compared to a similar question that focused on experiential observations (*What have you noticed about learning?*). The conceptual question prompted answers that were usually definitional in nature, confined to one or two sentences, lacked wide nuance, and began with "Learning is the ...". In contrast, the equivalent sensory question elicited a fluid array of aspects that were unrestricted by conventional and definitional bounds, and which had not been elicited in the equivalent concept-focused question. Perhaps these differences arose due to the different forms of memory, semantic and episodic, being accessed. This fluid array was overtly sought in the first three questions in this study. These questions focused on what people had noticed about learning, and set the tone for similarly experientially-grounded responses in the final two questions. This is a novel application of phenomenography that can potentially provide a deeper awareness of aspects of learning, as well as common understandings of learning, not yet adequately discussed in the literature. This is further discussed in Chapter 4 (Design and theoretical underpinnings of this study).

3.6 Chapter summary

The critique of relevant literature reveals that learning is seen as a complex phenomenon that involves change. A challenge exists in making sense of the literature, arising from complexities within and differences between the various disciplines, paradigms, schools of thought, and individuals who attempt to describe learning as a phenomenon. The learning theories presented in this chapter are often the way tertiary educators are informed about learning. Unfortunately, learning theories have suffered from a convergent approach. Experiential learning theory, developed by D. A. Kolb (2015), was offered as an alternative and divergent approach. This divergent approach was matched by the research methodology of phenomenography. Through careful analysis of a number of phenomenographic studies of learning, gaps were identified and this study aims to address these. Specific information is provided in the next chapter.

4 Design and theoretical underpinnings of this study

As discussed in previous chapters, learning is a complex phenomenon. One of the key roles of tertiary educators is to support opportunities for formal learning. This study aimed to capture tertiary educators' experiences of the phenomenon of learning. Experiences occur between the experiencer (tertiary educators) and the experienced (learning) in an inextricable manner, as each experience necessarily requires both a subject to experience and something to be experienced (Marton & Booth, 1997). Each tertiary educator naturally has unique experiences and understanding related to their role. Effective capturing of such variations requires careful design that aligns the study's ontology, epistemology, methodology, and methods. The absence of discussion of ontology was evident in most studies that were reviewed during the literature review for this study. Epistemology was more often discussed, often in an abridged form. Methodology and methods were the dominant focus of study design descriptions. Chatterjee (2013) expounded potential risks when these four areas do not align. For example, he argued "it is possible to make methodological choices that are at odds with one's (implicit) ontology or argue from an ontology that is inconsistent [with] one's choice of methods" (p. 73). Such an error could reduce the fidelity of a study from both a process and findings perspective. Accordingly, all four elements with the necessary alignment between them are explicitly discussed within this chapter.

Rather than holding tightly to the belief that there is a single 'correct' philosophical stance to apply to all situations, it might better fit to vary this stance according to perspective, purpose and context. For example, in realms of relative certainty, constancy and simplicity, where patterns are not disputed, an objectivist stance may suit our purpose, and may especially help describe a phenomena in convergent ways. Where these conditions do not apply, and/or more divergent perspectives are sought, less rigid philosophical stances may be more pragmatic. This context- and purpose-sensitive stance has been applied in selecting the mix of theoretical underpinnings for this study.

The discussion of ontology, epistemology, methodology, and methods, is not without its challenges. Different researchers have defined and categorised these areas in a variety of ways. Philosophical debates have traversed centuries and variances in usage are unlikely to be resolved quickly, if at all. Yet discussion of meta-concepts remains important as it seeks to expose our systematic approaches for conceiving, understanding and responding to experience and challenges.

To ensure trustworthiness of data gathering and analysis, the four criteria developed by Guba and Lincoln (1989) were applied. These are credibility, transferability, dependability, and confirmability. Credibility requires the study to measure what is intended and to be a true reflection of the social reality of the participants. Transferability is the ability of findings to be transferred to other contexts or settings. Dependability requires ensuring the processes are described in sufficient detail to facilitate another research project to repeat the work. Confirmability minimises investigator bias by acknowledging the researcher's predispositions. Each of these criteria are discussed throughout this chapter.

This chapter explicates the design of this study and its theoretical underpinnings by examining ontology, epistemology, methodology, and methods. It situates this study within a broader research framework (section 4.1—Complete research framework), discusses data collection and associated protocols (section 4.2—Data gathering), describes data analysis and presentation of results (section 4.3—Data analysis and presentation). The chapter then highlights that not all of the findings in this study arise from the iterative phenomenographic data analysis (section 4.4—Integrating findings with theory and context) and both sets of results will be included in Chapter 6 (Linking tertiary educators' experiences of learning to theory and context). The chapter is then summarised and links made to the next chapter (section 4.5—Chapter summary).

4.1 Complete research framework

The research framework for this study was developed after consideration of how best to explore the key research question:

> *What are the qualitatively different ways in which tertiary educators have experienced the phenomenon of learning?*

In order to answer this question, a suitable alignment between the ontology, epistemology, methodology, and method was required. Figure 4.1 (Complete research framework) identifies each of these areas.

Figure 4.1: Complete research framework

4.1.1 Ontology

Ontology is the study of the nature of existence, and of what is considered 'real' (Crotty, 1998). When aligned to epistemology, methodology and methods, our ontological stance cogently frames our meanings, interpretations, and actions as researchers (Chatterjee, 2013). Carter and Little (2007) argued that reflexive researchers need to engage and clarify these fundamental relationships as they impact on each other. Without due consideration and alignment, internal inconsistency may result (Carter & Little, 2007; Chatterjee, 2013). The ontological stance that underpins this study affected all aspects of gathering (method), analysing (method and methodology), and understanding the knowledge (epistemology) offered by the tertiary educators.

A common implicit ontological perspective sees physical objects as having 'real' existence, independent of consciousness, whereas mental objects are maps or representations of them, developed in and through imagination. This ontological perspective sees reality and meaning as existing within objects and is commonly referred to as objectivism (Bryman, 2016; Crotty,

1998). A different ontological perspective sees existence as an internal reality that is imposed on objects. When these subjective meanings are seen to totally determine experience, irrespective of content, it may be referred to as subjectivism (Crotty, 1998), although others may label this as idealism.

Both ontological perspectives are influenced by what is considered to have the greatest relevance and certainty, and what leads to the greatest perceived agency—the objective or the subjective. Marton (2000) argued for an experiential ontology where the subject and object are brought together within an individual's experience of the object, in this case, within the tertiary educator's experience of learning. This reflects a *non-dualistic* ontology. Marton (2000) argued that, within this ontological perspective, there is only one world—that which is experienced and understood. From an *experiential* perspective, meaningful existence requires both a subject to perceive and construct meaning, and an object of perception from which meaning is made. From this perspective, one cannot exist without the other (Marton & Booth, 1997). It is through the process of subjective meaning-making, or constructing (Bryman, 2016), that tertiary educators make sense of their experiences of learning. A non-dualistic research ontology is adopted in this study. It does not seek presumed objective knowledge of learning, but instead seeks to capture and analyse tertiary educators' expressed experiences and understanding of their worlds of learning.

Searching for patterns that emerge in qualitative data requires an open and relational stance that both allows for and captures variation. Alexander (2016) argued that the capacity to discern meaningful patterns is at the core of human learning. In this study, a *relational* ontology was adopted to observe and connect patterns derived from educator responses to an integrated set of relationships that formed the results of this study. The open searching for patterns in data used in this study supports an ontology which primarily examines the frames of reference of tertiary educators rather than seeking ultimate or absolute truths.

The ontology used in this study defines knowledge in terms of contextual representations rather than absolute truths or fixed beliefs. Accordingly, knowledge is fully expected to vary between knowers as well as over time, and is seen to vary because of contextual, cultural, historical and experiential differences. From this perspective, 'something exists when it is useful to explain observations' (Hossenfelder, 2019). Any philosophical ontological theories about a realm of Kantian noumena, absolute truths or ultimate reality beyond this definition are pragmatically superfluous as they add nothing of value to the observation-grounded approach used in this study. Sensory impressions are viewed as the raw data with which explanations can be drawn and tested, with the simplest, most logically consistent, most

plausible and most powerful explanations favoured. Indeed, sensory impressions are the only data available for drawing and testing these models, with all concepts, theories, evidence and societal knowledge only accessible to knowers through sensory impression. Basing ontology in the pluralistic rather than absolute encourages detachment from certainty in favour of gradients of confidence. This active detachment facilitates ready adaption of representations/explanations/meanings when results are surprising or challenging.

Ideas, beliefs, and/or conceptions that a person holds are relative to their internal and external culture, experience, and form the frame of reference (Åkerlind, 2015; Boulton-Lewis, Wilss, & Lewis, 2003; Bruner, 2009; Marton, 1988b). Different people have different experiences and understanding which are experientially 'true' for the individuals involved. So 'truth' in this experiential framework is seen as relative rather than absolute. This 'truth', Brownlee (2004) and McLeod and McLeod (2011) argued, results from personal experience and interpretation. The pluralistic stance aligns with an epistemology that allows for personal variation in meaning-making arising from experiences and interpretations.

Dall'Alba and Barnacle (2007) argued that ontology, or being in the world, and epistemology, or knowing about the world, are inseparable. Chatterjee (2013) highlighted that epistemological dilemmas can arise when designing research due to "our fundamental, and most often implicit, metaphysical [ontological] assumptions about the nature of the world" (p. 75). Rather than ignore or suppress ontology, it was used as a vital foundation for research design in this study.

4.1.2 Epistemology

Epistemology is the study of the nature of knowledge (Crotty, 1998). Objectivism assumes meaning to be inherent in the object; subjectivism assumes meaning "is imposed on the object by the subject" (Crotty, 1998, p. 9). Neither of these ontologies take account of the interplay of the experiencer with the experienced in the process of meaning making. A constructionist epistemology proposes that meaning arises through the interplay of the experiencer with appearances in the experienced world (Crotty, 1998). This aligns with a pluralistic ontology, as perceived reality and associated meanings are jointly subject to the variable context of subject and object (Denzin & Lincoln, 2018a). Within a constructionist epistemology, meaning does not exist independently; someone's mind needs to create it (Åkerlind, 2015; Weerakkody, 2015). This aligns with Marton's (2000) notion that whatever exists outside our experience, and is therefore unknown to us, has no meaning for us. Understanding achieved through this formation of meanings is central to constructivism (Lincoln, Lynham, & Gub, 2018).

McLeod and McLeod (2011) argued that personal interpretations and unique frames of reference are created through the construction of narratives. Inevitably there are natural variations between the narratives of individuals, their interactions with the environment, and their creation of meanings. Marton and Booth (1997) argued that these variations are the central interest in phenomenography. Both the ontology and epistemology used in this study allow for multiple meanings and shared or complementary views of the phenomenon of learning (Bowden & Marton, 1998). This openness to multiple meanings is reflected in both the constructivist epistemology and methodological approach of phenomenography used in this study.

4.1.3 Methodology

Methodology is the strategy applied to answer the research question (Crotty, 1998; Denzin & Lincoln, 2018b). The choice of methodology, to be logically consistent, needs to be constrained by compatibility with the chosen ontological and epistemological stances (Chatterjee, 2013). Similarly, this choice narrows the selection of compatible options for research methods. A phenomenographic methodology was selected for this study. This methodology aligned with the constructionist epistemology and experiential, non-dualistic, relational, pluralistic ontology chosen.

Phenomenography aims to capture qualitatively different ways that phenomena are experienced by people (Åkerlind, 2015; P. Ashworth & Lucas, 1998; Booth & Ingerman, 2008; Bowden, 2000b; Dall'Alba, 2000; Entwistle, 1997; Marton, 1988a; Prosser, 2000). This expectation of variations supports a divergent outcome of research, which aligns with the research question in this study: *What are the qualitatively different ways in which tertiary educators have experienced the phenomenon of learning?* Prosser (2000) argued that phenomenography is descriptive in nature. Phenomenography does not focus on explaining why people experience phenomena differently; it instead focuses on describing variations in this experience that are qualitatively different. Phenomenography seeks to place focus on experience rather than theory (Åkerlind, 2015; Marton & Booth, 1997). This priority aligns with the focus of this study which actively seeks out the experiences of tertiary educators in learning. In so doing, the study provides insights into learning "through the eyes of the key players" (Trigwell, 2000, p. 65). Rather than the researcher making statements about a phenomenon, a first order perspective, the researcher makes statements about other people's experiences of that phenomenon, a second order perspective (Marton, 1981; Marton & Booth, 1997). That is, it focuses on experienced phenomena and how those experiences appear to the experiencer. The advantage of using phenomenography in this study is that it provides

information from within the practical context of tertiary education. Trigwell (2000) argued that this provides relevance to the outcomes of the study by representing "the complexity of educational settings and situations" (p. 65).

Phenomenographic research accommodates qualitative variations in experiences through data analysis that allows for a number of categories to emerge. Cope (2004) clarified that each category represents a different way or variation of experiencing the phenomenon. These categories, most commonly restricted to about five to seven in total, form relational outcome spaces linked by their focus on the same phenomenon (Bowden & Walsh, 2000; Entwistle, 1997). Relationships are formed following an in-depth and iterative analysis of data (Marton & Booth, 1997) and allow for a divergent set of findings. Booth and Ingerman (2008) argued that the outcomes space and its categories, when taken together, represent the various ways of experiencing a phenomenon. Importantly, Booth and Ingerman (2008) further argued that these categories can be used to highlight the critical aspects related to the phenomenon under investigation. These critical aspects of learning can then be incorporated by tertiary educators and learning designers when creating opportunities for learning.

Phenomenography, like most qualitative methodologies, has been criticised for a variety of reasons. Phenomenographers Åkerlind, Bowden, and Green (2005) and non-phenomenographer Tight (2016) reviewed these criticisms of phenomenography and concluded that many resulted from misunderstandings of the methodology by those who had not applied it. Nonetheless, the criticisms were reviewed in depth before design of my study. Addressing the major concerns included explication of the processes used in the data collection and analysis. Attention was paid to the need to generate a wide purposive sample in order to gain maximum variation. The initial sampling process drew from a variety of providers in a range of disciplines. Care was taken to develop focus questions that explored only the educators' experiences of learning. The interview protocol was followed in all interviews. All interviews focused on what the interviewees sought to reveal about learning, as distinct from introducing my thoughts on issues. A detailed description of the data analysis is offered in section 4.3 (Data analysis and presentation) of this chapter. The steps address the relevant criticisms of phenomenography to date.

Phenomenography emerged from the study of education in higher education settings with a focus on learning. Section 3.5.2 (Gaps in phenomenographic research) highlighted gaps in phenomenographic research which this study addresses. Understanding learning through the experiences of the tertiary educators in this study can lead to fresh insights into it. A benefit to the tertiary educators participating in this study is that the induced reflections may help to

further ground their understanding of learning in their experiential reality (Boud, 1993, 2010; Clegg, Tan, & Saeidi, 2002; Sin, 2010).

4.1.3.1 Novel application of phenomenography in this study

The phenomenographic methodology used was novel in comparison to prior phenomenographic studies generally, in two significant ways:

1. question design specifically targeted interviewee observations of learning
2. categories were treated as complementary rather than subsuming.

Question design in traditional phenomenographic studies focuses on identifying different conceptions. Marton and Pong (2005) noted that conceptualising is not the same as experiencing. Abstract and often definitional questions such as "What is…" or "What does 'x' mean to you?" elicit conceptual responses. These questions conflate all forms of meaning-making into a single entity, typically called 'conceptions'. These questions are inadequate in eliciting concrete experiences which are sensory-based. This conflation belies the significant and fundamental differences in the processes, the levels of consciousness, the affective/cognitive domains, and the outcomes of meaning-making when formed through direct sensory versus abstract conceptual mechanisms. Therefore, this study asked what interviewees had 'noticed' in the first four interview questions. These questions solicited sensory information based on observations rather than abstract conceptions or definitions.

Categories in traditional phenomenographic studies are seen as the components of subsuming hierarchies. Dall'Alba et al. (1989) described the hierarchy as starting with fragmented categories which are progressively subsumed by more cohesive categories. This suggests that the higher level categories are more evolved than the lower level categories. In some data sets this may be the case when assessed against particular criteria. This study intentionally challenged this widely-accepted phenomenographic custom of placing the identified different ways of experiencing and understanding phenomena within ordered hierarchies. The challenge arose because the data set did not reflect such a movement. Categories were seen as distinctive and complementary rather than as inferior/superior or subsuming.

The merit of these two novel approaches lies in extending phenomenography as a research methodology. By using these two variations, phenomenographers can gather wider data sets by not focusing on abstract questions alone. Additionally, the iterative data analysis does not have to force the categories into hierarchies or rank categories against each other. This has implications for the process and outcomes of future phenomenographic studies. See section 7.6.1 (Recommendations for further study).

4.1.4 Method

Research methods are the techniques used to gather data (Denzin & Lincoln, 2018a). Semi-structured interviews are the most common method in phenomenographic research. Brinkmann (2018) argued that phenomenographic researchers utilising interviews in the constructionist epistemology have a "disbelief in stable nuggets to be mined by the interviewer" (p. 1012). Phenomenography does not converge on "nuggets"; it diverges to variations. Stenfors-Hayes et al. (2013) and Bowden (2000b) argued that the use of open and non-directive questions allow interviewees to focus on relevant dimensions or aspects of the phenomenon of learning as they appear to them. The interview is not just about asking questions and gaining answers. Entwistle (1997) explicated that phenomenographic questions can be posed in a way which allows the interviewee to account for their actions within their own frame of reference, rather than one imposed by the researcher. Specific follow up questions or probes aimed to reveal further insights into the experiences of the tertiary educators in learning. Bowden (2000b) and Stenfors-Hayes et al. (2013) agreed this is a legitimate aspect of the phenomenographic approach and they arise from the interviewee responses rather than being pre-planned (see Appendix H: Interview protocol).

Many researchers have stressed the importance of the interpersonal dynamics of the interview in their guidelines on interviewing (see P. Ashworth & Lucas, 2000; Barnard, McCosker, & Gerber, 1999; Marton, 1994b; Sin, 2010; Stenfors-Hayes et al., 2013). The stance as a researcher was relaxed, conversational, unrushed, and curious. This stance was developed during decades of counselling. This approach enabled the interviewees to relax and consider their answers. It also placed genuine interest in a joint understanding of their experience of the phenomenon of learning (Marton, 1994a; Stenfors-Hayes et al., 2013). The focus was on listening intently to the interviewee, their responses, and seeking clarity or deepening the information provided. Terms were either clarified through probes or a request made for a concrete example to elicit clarification (Barnard et al., 1999).

An empathic attitude, one well practiced in my professional counselling life, allowed exploration of the interviewees' understandings. P. Ashworth and Lucas (2000) suggested that empathy requires detachment from one's own world so a fuller exploration of the other's world can be completed. It involves what they refer to as "imaginative involvement" (p. 299) in the other's world. Barnard et al. (1999) endorsed this empathic stance as it implicitly communicates acceptance of the information provided by the interviewee, provides the base for a friendly style of interview, and promoted interest in the interviewees' ideas. The focus on reaching into learning from the interviewees' perspective was at the forefront. Dall'Alba (2000)

usefully highlighted that the direction of all questions should be focused on eliciting some aspect of the phenomenon of learning. Details of the planned and unplanned questions are discussed in the next section on data gathering.

4.2 Data gathering

In order to gather data, three tasks needed to be completed. They were developing an interview protocol, obtaining ethics approval from the university, and creating an appropriate sample of tertiary educators for the interview. Each of these is discussed in order in this section. The detail provided in both this data gathering section and section 4.3 (Data analysis and presentation) aim to increase the dependability of the study. Other researchers and tertiary educators reading these sections can then make a determination if this study has transferability to their contexts or settings.

4.2.1 Interview protocol

As already discussed, phenomenography aims to capture qualitatively different ways of experiencing a phenomenon. This study sought to reduce focus on theoretical ideas about learning and instead focus on what educators had noticed about learning, a novel application of phenomenography. As described in section 3.5.2 (Gaps in phenomenographic research), the questions used in this study aimed to capture both the core and the fringe of awareness of the tertiary educators (Marton & Booth, 1997). The question design also drew on the work by Argyris and Schön (1974). They proposed two contrasting theories of action: the espoused theory and theory-in-use. The espoused theory is how we conceive and convey to others, and ourselves, what we do (a theoretical focus). The theory-in-use, in contrast, is implicit and shown through our actions (an experiential focus).

Capturing qualitatively different ways of experiencing phenomena within phenomenography is most powerfully achieved through a consistent and explicit focus on seeking theory-in-use rather than espoused theory. This is no simple task. The very nature of language is conceptual, the representation of experience through the symbolism of words. The approach in this study aligns with an experiential focus in phenomenography. Tertiary education has traditionally had a structural focus that has been heavily weighted towards compliance, the acquisition and limited application of concepts, and espoused theories in controlled settings. These concepts and espoused theories have the potential to be received as dis-integrated information, separate from day-to-day meanings. These types of conceptual meanings were not the prime target of this study. A focus on theories-in-use has the potential to uncover the tacit or implicit aspects of experiences of tertiary educators in learning. In this discovery process, new aspects

of the qualitatively different ways tertiary educators have experienced learning are likely to emerge.

The interview protocol covered three areas. The first gathered biographical detail of the tertiary educators. The second focused on five key open-ended questions that formed the basis of the interview. The third area, probes, weaved throughout the interview as required. Probes facilitated clarity, depth, and gained specific experiences from the interviewees (see Appendix H: Interview protocol).

4.2.1.1 Sequence and intention of questions

The sequence of interview questions was carefully considered before ethics submission. The gathering of biographical data at the beginning of the interview aimed to allow the interviewee to settle into the interview before recording of the interview commenced. The biographical data was recorded on the interview protocol form and included: gender; age; length of time teaching; sector (VET, HE, Both); discipline/s; experience and qualifications for teaching in chosen area/s; and specific teaching qualification/s. The biographical data for this study sample, summarised in Table 4.1 (Interviewee demographics summary) highlights the heterogeneity of the sample. During the gathering of the biographical data, the interviewee and I were engaged in an informal style of chatting rather than a question and answer format. Their experience or qualifications often became the focus of an interesting discussion before moving to the next question. Prior to the first key question, the interviewee was asked if they wanted to check anything or were ready to start the recorded part of the interview. At this time, the consent form, if it had not been offered by the interviewee, was also obtained.

Once the interviewee gave permission, the recorder was turned on and the first of the five open-ended questions was asked. The five open-ended questions for the semi-structured interviews were:

1. From your experiences as a professional educator, what have you noticed about learning?
2. From your experiences as a learner, what have you noticed about learning?
3. From your experiences as both a professional educator and as a learner, what have you noticed facilitates learning and what inhibits learning?
4. Based on your experiences, if you were to explain to a new educator what learning is, what would you say?
5. We have discussed learning at some depth. So what do you actually mean by learning?

Having presented the five key questions used in this study, each one of them will be discussed in terms of their specific purpose.

Interview question 1: From your experiences as a professional educator, what have you noticed about learning?

It was reasonable to assume that educators would join the interview experience in their 'role' as professional educators. They would likely expect themselves to respond in a professional manner using their experience as an educator rather than from a personal perspective. Stake (2010) confirmed that professional knowledge results from experience and the first question allowed for their professional knowledge to be shown. It also focused their attention on what they had noticed rather than models or theories of learning. This aligned with the intention to gather the theory-in-use rather than the espoused theory (Argyris & Schön, 1974) to address an identified gap in prior phenomenographic research.

Interview question 2: From your experiences as a learner, what you have noticed about learning?

The second question moved to their personal learning, a gap in current phenomenographic research. Its intention was to see variations and similarities between what they had noticed about learning as learners compared to what they had noticed as professional educators. My review found no evidence of any similar prior phenomenographic research into the personal learning of tertiary educators.

Interview question 3: From your experiences as both a professional educator and as a learner, what have you noticed facilitates learning and what inhibits learning?

The third question focused on exploring the factors that facilitated or inhibited learning. Researchers rather than educators have generally written about these factors. This question focused on what factors the educators had noticed from the perspectives of being both a professional educator and learner. This was another identified gap in current phenomenographic research.

Interview question 4: Based on your experiences, if you were to explain to a new educator what learning is, what would you say?

This question asked interviewees to imagine mentoring a new educator. The aim of this question was to elicit aspects of learning the educator identified as important to tell new educators. The observations of previous questions were now translated into an action plan for future mentoring. It was asked as a hypothetical scenario, although in reality the majority of interviewees provided mentoring to others with whom they work.

The final question aimed to uncover the educators' implicit, rather than theoretical, working definition of learning. It also aimed to provide a point of comparison and contrast to other

phenomenographic studies which took a more abstracted stance in questioning interviewees about learning. The interview had repeatedly overtly primed interviewees for experiential observations. This question was posed in the context of an experientially grounded interview and, therefore, encouraged experientially grounded responses. Had this question been asked first, it could have set the interview tone as theoretical rather than based in the educators' lived experiences. There was again an absence of any similar mentor-based prior phenomenographic research into learning.

> *Interview question 5: We have discussed learning at some depth. So what do you actually mean by learning?*

As the interview moved through the open-ended questions, probes were used at moments when clarification was needed. The probes were aimed at checking what was meant by a word or term, gaining an example to ground the comment in experiences, or redirecting the interview. For example, '*Heutagogy is an interesting term. What do you mean by that?*', '*You mentioned a challenging student. Can you tell me what the student did or said that was challenging?*', or '*What happened in terms of learning?*'

Before concluding the interview, interviewees were asked if there was anything they wanted to add, emphasise or alter. Only one interviewee declined. These offerings were integrated for analysis with earlier responses. For example, where responses related to personal learning, they were analysed in the context of question 2 responses.

4.2.2 Overview of research ethics

Before commencing the study, an ethics application was made to the Macquarie University Ethics Committee. This Ethics submission met the requirements of the *National Statement on Ethical Conduct in Human Research 2007 (Updated May 2015*) (The National Health and Medical Research Council, The Australian Research Council, & The Australian Vice-Chancellors' Committee). The ethics application included the interview protocol, draft letters to potential participants, and consent form. The ethics review was completed at Macquarie University in 2016. Following the ethics approval, sampling began.

4.2.3 Sampling

The sampling was purposive and sought tertiary educators interested in being interviewed about learning. The selection of potential organisations where the tertiary educators worked broadly reflected Australian tertiary enrolments which are dominantly located in Victoria, New South Wales, South Australia, and Queensland. Attention was given to ensuring both public and private institutions were invited. Equally, a variety of disciplines from both the VET and HE

sectors were sought to participate. These choices increased the potential for wider variation in the sample.

Contact commenced with an email being sent to twenty Program Managers in VET or Associate Dean Teaching and Learning or Head of Schools in HE. These contacts were identified via educational institution websites. Organisations in Victoria, New South Wales, South Australia, and Queensland were invited to participate and were sent Appendix F:(Participant information and consent form) as an attachment to the initial contact email which is contained in Appendix G: (Sample emails).

Responses from twelve organisations indicating their willingness to nominate someone to participate were received within the week after initial contact. An 'appointment scheduling' email was sent to these twelve organisations' nominated interviewee (see Appendix G: Sample emails). At the same time, a follow up email was sent to eight organisations who had not yet responded resulting in two more potential interviewees. Another ten emails were sent to new organisations who matched the criteria for participation resulting in four more potential interviewees. Three people self-referred following word-of-mouth recommendations of the research. A pool of twenty-one potential interviewees was developed.

From the pool of twenty-one potential interviewees, interviews were undertaken with eighteen tertiary educators—Victoria (3), New South Wales (10), Queensland (4), and South Australia (1). The other three potential interviewees were unable to participate due to overwhelming work demands (1), a sick child (1), and inability to participate in a face-to-face interview (1). This number met the phenomenographic standard of 15–20 proposed by Trigwell (2000). Trigwell (2000) argued that this quantity was enough to provide variation in interviewees but not overwhelm the research with data from the interviews, and this view matched my own. Appendix G: (Sample emails) contains the emails sent to set up and confirm interviews. The venue was of the interviewees' choosing with twelve in educational institutions, three in cafes, and three at the homes of interviewees.

Appropriate safety strategies were put in place for the physical and mental well-being of interviewees and the researcher. These strategies included all interviewees volunteering for the interview and being told at the beginning of the interview that they could withdraw from participation at any time. If difficult issues arose in the interview, such as interviewees recalling difficult learning experiences, the researcher allowed time to explore and process these difficulties. The interview resumed once the interviewee indicated they were ready to continue. As a safety measure for the researcher, prior to each interview, the researcher

contacted her partner to indicate that she was at the interview and would make contact once it had concluded. The researcher's mobile phone was used as part of the recording process and was available to the researcher if she needed to call for assistance. GPS tracking was an additional safety measure so the researcher's location could be secured if necessary. However, as expected, there were no safety concerns that arose during the interview process.

4.2.4 Preparing for data gathering and analysis

As Guba and Lincoln (1989) identified, confirmability minimises the investigator's bias through awareness and acknowledgement of the researcher's predispositions. In order to prepare for gathering and analysing the data in this study, several steps were taken to minimise researcher bias. The questions were designed to elicit information from the interviewees which could not be anticipated or affected by researcher bias. The focus on what interviewees had 'noticed' about learning was an inquiry into a research area the researcher had not seen anything written on nor thought about in any depth. This applied to the first four questions. The interviewee responses were listened to with curiosity and probed to gain deeper awareness of what the interviewees were offering. The fifth question was approached with the same curiosity rather than focusing on how interviewees' responses aligned with the researcher's notion of learning. This was assisted, in part, by the fact that the interviews were held after the literature review on learning was undertaken. There were no agreed definitions of learning that resulted from this literature review.

As an additional step to acknowledge my own thinking about aspects of learning, I created Appendix E: My lived experience in learning. This helped acknowledge my current thinking about learning before the interviews and data analysis. Throughout the data analysis process, a constant checking was applied to the development of categories to ensure they were arising from the data. A useful check in this regard was the use of interviewee quotes which showed the connection between the category and the data gathered. This increased the credibility of the study with particular focus on being a true reflection of the social reality of the participants. The data analysis required me to seek the meaning and structure of that meaning from the interviewees. The rigour of the iterative data analysis proved to be a useful way of minimising my own thoughts about learning and instead focus on what the interviewees collectively had proposed.

4.2.5 Pilot study

The initial six interviews formed the pilot study and were conducted in the second half of 2016. Although the questions had been informally tested, they needed to be checked in the field with relevant interviewees. Responses to the questions were checked to ensure that the data

gained matched the intention of the question and the broader study. Additionally, in line with the suggestion by P. Ashworth and Lucas (2000), the pilot also provided a test of my interviewing skills using the research questions. The data gained from the interviews aligned with this study's aims and reinforced that the skills in interviewing were in place and effective. Therefore, the data from the pilot study became the first six interviews; the other twelve interviews were completed in the first half of 2017. Table 4.1 (Interviewee demographics summary) shows relevant details of the eighteen interviewees.

Table 4.1: Interviewee demographics summary

	Gender	Age	Teaching experience in years	VET/HE/Both	Private (PR), public (PU) or both	Teaching qualification
01	M	60s	>20	HE	PR	No
02	F	20s	1-5	VET	PU	No
03	M	50s	15-20	HE	PU	No
04	M	50s	15-20	VET	PR	Yes[1]
05	F	50s	>20	HE	PU	Yes[2]
06	F	40s	6-10	HE	PR	No
07	M	50s	10-15	VET	PR	Yes[1]
08	F	60s	6-10	Both	Both	Yes[1]
09	M	50s	>20	VET	PR	No
10	F	40s	6-10	VET	PU	Yes[1]
11	F	40s	1-5	VET	PU	Yes[1]
12	F	40s	>20	HE	PU	No
13	F	50s	10-15	Both	PR	Yes[3]
14	F	40s	10-15	VET	PR	Yes[1]
15	M	60s	>20	Both	PR	Yes[1,4]
16	F	50s	1-5	VET	PR	Yes[1,4]
17	M	60s	>20	Both	Both	Yes[1]
18	M	50s	10-15	HE	PU	No

Teaching qualifications:

[1] Training and Education (VET)

[2] Postgraduate course in learning and teaching (HE)

[3] Postgraduate course in Learning and Teaching English to Speakers of Other Languages (HE)

[4] Master of Education (Adult) (HE)

The disciplines in which the interviewees were teaching were: social sciences (6), health sciences (2), business/management/leadership (7), teaching (4), law (1), and arts (1). Three interviewees taught in different two disciplines. Thus, the total number of interviewees (n = 18) does not match the number of disciplines taught (n = 21).

In terms of experience and qualifications for teaching in their discipline, all interviewees had relevant and cognate work experience. Their qualifications ranged from VET (3), Undergraduate HE (4), and Post-Graduate HE (11). Relevant teaching qualifications were held by 11 interviewees (6 VET, 1 HE, 4 both) while 7 (2 VET, 5 HE) did not have a relevant teaching qualification.

This section reported on the data gathering, the first part of this research process. The next section discusses data analysis and presentation of the study's results.

4.3 Data analysis and presentation

This section explores the approach used for data analysis and for presentation of the data. As will be discussed, both the data analysis and presentation of data are uniquely structured in phenomenographic research. While different phenomenographic studies use terms in different ways, as L. R. Harris (2011) highlighted in her review of 56 phenomenographic studies, unless otherwise stated this study has used Marton's original meanings for the terms used within it.

4.3.1 Transcribing interviews

Once the individual interviews were completed, the transcriber completed a verbatim transcription with all words, pauses and the like, transcribed. This was completed as soon as possible after the sound file submission. The initial check of the transcription was against the recorded interview. Correction of terms or words that may have been misheard or unclear were addressed. The recorded interviews were listened to several times to ensure accuracy. This countered the risk of only using transcriptions which was raised as a flaw in research by Sin (2010). At this stage, there were only single interview transcripts and they were dealt with as standalone items. At a later stage the same transcripts became part of the collective pool of meaning (Marton, 1988a). The analysis then commenced.

4.3.2 Steps in data analysis

As Dringenberg, Mendoza-Garcia, Tafur, Fila, and Hsu (2015) pointed out, phenomenographic research aims to answer two key questions:

1. What are the different ways of experiencing the phenomenon?
2. How are these related?

In order to answer these questions from the data, a form of iterative phenomenographic analysis was used. One of the criticisms of phenomenographic studies, as well as other qualitative research studies, has been that data analysis is not specified clearly. In order to counter this issue, this research followed a combination of the Stenfors-Hayes et al. (2013) seven step approach to phenomenographic analysis and other relevant inclusions from key writers in the area. These seven steps—familiarisation, condensation, comparison, grouping, articulating, labelling, contrasting—formed a clear direction for the analysis.

Familiarisation involved all of the interview transcripts being listened to several times for contextual clues. It also allowed me to re-familiarise with the transcripts. The principle of horizontalisation, which ascribed equal value to all description and experience, was applied. This meant the entire data set was given equal consideration.

Condensation involved meaning units in the dialogue being identified, marked and saved for the purpose of further scrutiny. Marton (1986) argued for extraction of relevant quotes in the early stages of analysis. In contrast, Bowden (2000b) suggested that this decreased the usefulness of the analysis due to the loss of the context of the quotes. In the initial analysis, relevant quotes were identified but instead of being taken out of context, they were highlighted and keywords/codes were added in a separate column in the transcript. For example, in the following excerpt in Table 4.2 (Example of initial data analysis) the question is shown in italics, significant parts of the quote are highlighted in blue, and the right hand column shows a potential keyword/code to aid in initial data analysis.

Table 4.2: Example of initial data analysis

So *from your experiences as both a professional educator and also a learner now, so from any of those environments, what have you noticed facilitates learning and what inhibits learning?*	
What facilitates learning? Oh certainly the relationship that you have with people facilitates learning. If they connect with you, if they like you, if they respect you, if they see you as the authority, that facilitates learning.	F Relationship

By adopting this approach, the key points from the interviews and potential quotes were identified early and they were left in the broader context of the transcript.

The *comparison* step compared meaning units tentatively to highlight similarities and differences. The fourth step involved *grouping* the answers that were expressed in similar ways of understanding the phenomenon into the same category. Rather than categorising meaning units through disconnected reviews of fragments of transcripts, the context of each

entire transcript was used to determine the categorisations of meaning units. Those meaning units that initially either bridged two groups or did not fit into any groups were paid special attention and resolved by adjusting the categories.

Articulating the categories involved capturing the essential meaning of each category. This involved developing draft categories, allowing time for reflection and re-examining the categories, and refining as needed. This followed Ashworth and Lucas' (2000) notion that the development and review of categories was completed over time. *Labelling* in a way that showed the core meaning of the category was then completed. These fifth and sixth steps established tentative categories which were then iteratively checked against each other to ensure their veracity. This follows the approach of Prosser (2000). Additionally, the categories were articulated following Marton and Booth's (1997) idea that the categories and meanings were parsimonious. In this context, parsimony was related to the number of categories that accurately reflected the critical variations in the data.

The comparison, *grouping*, *articulating* and *labelling* continued iteratively until the margins between the categories were clear. Marton (1986), Åkerlind (2005b), and Woollacott, Booth, and Cameron (2014) all emphasised that phenomenographic data analysis requires multiple iterations. These iterations increase the reliability of the categories of meaning and ultimately the outcome space. Woollacott et al. (2014) argued that this additional analysis can also reveal gaps, uncertainties, and possibly new distinctions that arise from the different iterations. This was the case in this study.

The final and seventh step was *contrasting* the categories. This led to each category being described both in its individual meaning as well as what it did not comprise. In other words, the distinctiveness of each category was explicated and then tested. This process is iterative, abductive in nature, consistent with divergent thinking, and as such is well suited to qualitative research. Aligned with the derivation of the word, abductive reasoning *leads away* from existing assumptions, based on testing different ways of understanding the evidence. Many ways of understanding are explored, and rather than necessarily dismissing, eliminating or discounting any of these, the pragmatic focus is on seeking the simplest, most likely explanation as a currently favoured way of understanding. Marton and Booth (1997) make two important comments which support an abductive approach. First, "… we cannot be simultaneously aware of everything with the same degree of acuity all the time" (p. 134). Thus, the need for iterative analysis as the data continues to reveal new insights when revisited. While conjectures or inferences are a tool in the analytic process, they are always checked against the data rather than the research is assumptions. Second, "… The category of

description is a reasonable characterisation of a possible way of experiencing something given the data at hand" (p. 136). Categories are therefore seen as likely explanations rather than inductive conclusions or deductive confirmations.

4.3.2.1 The outcome space: Hierarchies and categories

The outcome space contains the hierarchies and the categories contained within them. Finding categories was "a process of discovery" (Marton, 1986, p. 35) based on the seven steps described. Categories developed as the qualitative differences between central meanings emerged (Åkerlind, 2005b; Bowden, 2000a) and were "based on the most distinctive features that differentiate one [category] from another" (Dall'Alba et al., 1989, p. 58). However, the outcome spaces in this study did not follow Dall'Alba et al. (1989) in terms of hierarchies moving from fragmented to cohesive categories. Instead, the categories were seen as distinctive but not inferior or superior to each other.

Stenfors-Hayes et al. (2013) emphasised that the categories in the outcome spaces aim to capture the similarities and differences of responses and reflect the collective rather than individual interviews. Marton and Booth (1997) argued that the use of the collective to develop the categories of description provides them with "a strength that they could not have if individuals were studied" (p. 134). The outcome spaces contained the minimum number of structurally-related categories of description required to describe the different aspects of an experienced phenomenon and the relationships between them (Åkerlind, 2005b; Marton & Booth, 1997). The outcome space reflected the fact that people noticed different aspects of learning. The quality of the outcome space was judged against the three criteria identified by Marton and Booth (1997): 1) there was something distinctive about the conception in each category; 2) the category was both optimal and parsimonious; and 3) the relationship between the categories was clearly stated.

In examining phenomena we seek powerful ways of understanding, ways that increase our agency within our world. Phenomena are the appearances/data/sensory impressions within our awareness. We use these external and internal data to distinguish objects of experience from their surroundings, objects which we then consider to 'exist', that is, to stand out (Marton, 2000; Marton & Booth, 1997). We consider objects to exist to the extent that they are useful to explain our observations (Hossenfelder, 2019). This process occurs unconsciously, intuitively, and automatically, but can also be applied consciously, systematically, and intentionally (Kahneman, 2013).

To apply this meaning-making system consciously, systematically, and intentionally one useful aspect involves distinguishing the boundaries which define an object of experience. In phenomenography, this is commonly termed the *referential aspect* of the experience (Marton & Booth, 1997). For example, to systematically examine a hand, we would need to define what we mean by a 'hand', including where it starts and finishes, and the limits of the definition. For this definition we may exclude common meanings of hand such as 'help', the hand of a clock, a robotic hand, and perhaps an animal's hand. These definitional limits are determined by pragmatism, the usefulness for the selected purpose.

Another useful aspect in this systematic meaning-making involves examining the object's various components and inter-relationships. In phenomenography, this is commonly termed the *structural aspect* of the experience (Marton & Booth, 1997). Whilst the referential and structural aspects might seem to be distinct, they are fundamentally inter-related, with the selection of one impacting on the other.

Examination of the structural aspect of an experience can be usefully further broken down into two components, which are called the *internal and external horizons* (Marton & Booth, 1997). For example, to systematically examine a hand, we would need to examine the components that make up the hand and the inter-relationships between these components. In phenomenography, this component of the structural aspect of the experience is commonly termed its *internal horizon*. The components of the internal horizon of the hand that we might examine include the nails, fingers, joints, various cells, blood capillaries, chemical composition, and other features. The internal horizon also includes the ways that these internal components inter-relate. The second component of the structural aspect of an experience that we can systematically examine is its *external horizon*. For example, to systematically examine a hand in its external horizon we would examine the hand in its inter-relational context. The arm and the remainder of the body is part of this inter-relational context, so we would examine this relationship in terms of links, communications, dependencies, cell-transfer, and other features. However the hand has wide contextual interconnectedness with the world which is also relevant to this external horizon. It performs functions such as holding, moving and manipulating other objects. It is impacted by external conditions such as cold, wind and sun exposure, application of balms and cleaning agents, and damage through collisions and attacks.

Just as it can be useful to systematically examine a hand in this way, we can usefully apply this process to the examination of other phenomena, including to the categories/qualitative variations arising from this phenomenographic analysis. Figure 4.2 (Phenomenographic

representation of what educators noticed about learning) shows the connections between these aspects, as revealed from interview questions 1 to 4.

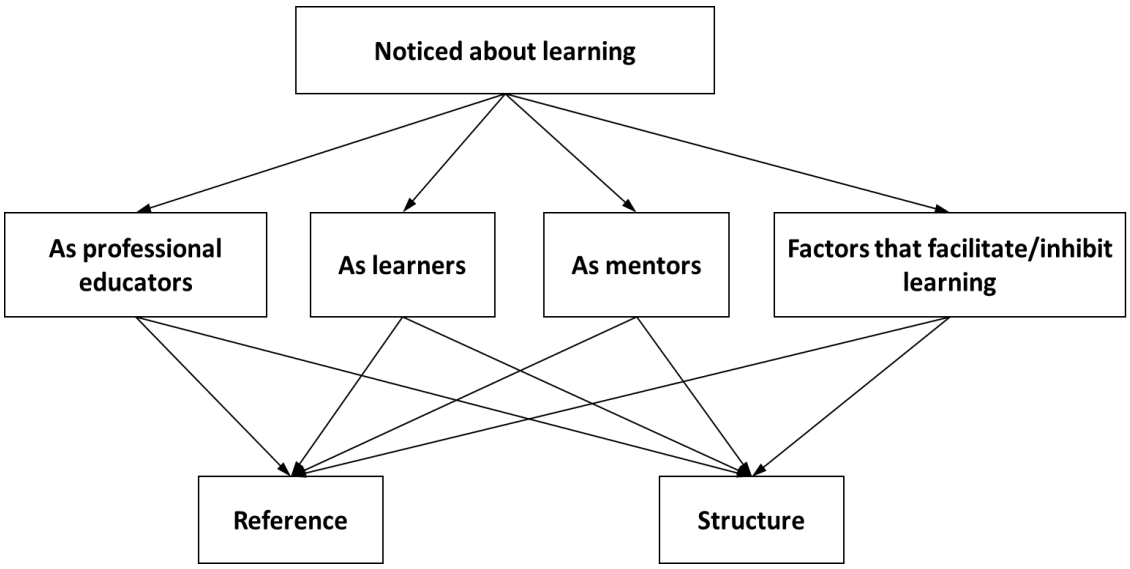

Figure 4.2: Phenomenographic representation of what educators noticed about learning

While Figure 4.2 (Phenomenographic representation of what educators noticed about learning) shows the relationships between the noticed aspects of learning, the abstract concepts of learning, as revealed from interview question 5, are shown below in Figure 4.3 (Phenomenographic representation of educators' grounded concepts of learning).

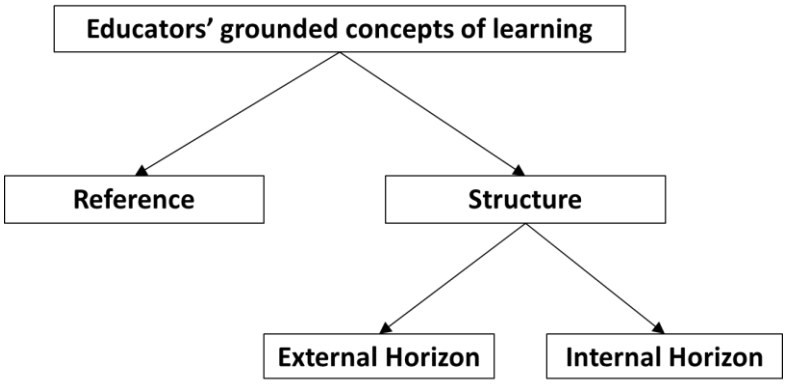

Figure 4.3: Phenomenographic representation of educators' grounded concepts of learning

The relevant meaningful quotes formed what Marton (1986) initially called the pool of data, which he later (1988a) called the pool of meaning. This pool shifted the focus from the individual transcripts to the collective data. The quotes and sections were then compared and similarities and differences emerged. This supported the formation of the hierarchies via

distinctive features of the quotes and sections. It is useful to note that individual tertiary educators may offer insights into several categories due to the complexity of their answers.

Prosser (2000) described the iterative data analysis in phenomenography as "time-consuming and intellectually difficult and challenging" (p. 38). Marton (1986, p. 43) offered a similar description:

> The process is tedious, time-consuming, labor intensive, and interactive. It entails the continual sorting and resorting of data. Definition of categories are tested against the data, adjusted, retested, and adjusted again. There is, however, a decreasing rate of change and eventually the whole system of meanings is stabilized.

My experience was similar to both Prosser and Marton. Phenomenographic iterative data analysis requires attention to a set of polarities including moving from individual transcripts to a pool of meaning, what is contained within the pool of meaning and what emerges in the spaces between the pool of meaning and the analysis, and holding both details and general patterns simultaneously. The results are, in my view, worth the effort of this form of analysis as they provide variations in the ways a phenomenon can be seen. In so doing, qualitatively different ways of appreciating the phenomenon emerge.

4.3.3 Presentation of results

A distinctive aspect of phenomenographic studies involves how the results are presented. Traditionally, phenomenographic results are offered as hierarchies moving from lower, fragmented conceptions to more comprehensive conceptions at the top of the hierarchy. This custom implies that lower conceptions are inferior to those higher in the hierarchy—see section 6.4 (What is learning?) for further discussion. It requires a subjective judgement by the researcher to decide hierarchical placement which necessarily requires fixed criteria against which to make this judgement. The data in this study did not support such subjective judgements. Depending on the criteria used to make such a judgement, the same category could be judged to be lower or higher in the hierarchy, that is, there was no singular criteria on which these judgements could be made. The value of this study arose from the identification of qualitatively different ways in which tertiary educators experienced learning; not in subjectively ranking them. Therefore, in another novel application of phenomenography, the categories are represented in a circular figure to reflect the distinctive qualities of each category. All interview questions sought responses grounded in direct observations and direct practice; albeit the final question called for overtly abstract conceptions grounded in these observations and practices. That is, all interview questions drew on analysis of the tertiary educators' direct, noticed experiences, in practice, of learning.

Each category was described based on its distinctive features accompanied by two illustrative quotes to help explicate the relationship between the categories and the data (Stenfors-Hayes et al., 2013). The blue portion of the quote exemplifies the direct relationship to the category; the broader quote provides the wider context (see Appendix I: Selected quotes by question, category, and Interviewee number). The phenomenographic findings are presented in Chapter 5 (Tertiary educators' experiences of learning).

4.4 Integrating findings with theory and context

The phenomenographic categories described in Chapter 5 (Tertiary educators' experiences of learning), and analysed in Chapter 6 (Linking tertiary educators' experiences of learning to theory and context), examine the qualitatively different ways that interviewees described their experience and understanding of learning, and the aspects of learning, in different contexts. The study's significance could stand on those results alone, as they captured descriptions of educators' experiences and understandings of learning not captured in previous research. However, as the iterative phenomenographic data analysis was completed, additional significant findings emerged that were not captured in these outcome spaces. These findings provided further insights into learning as a phenomenon, especially in relation to how it was addressed in tertiary education. Discrepancies between the critically analysed literature in Chapter 3 (Critical analysis of relevant learning literature) and aspects of professional practice in tertiary education also emerged. The interviewees provided valuable insights into improving the focus of tertiary education on learning, along with reasons why this focus may not be evident in some areas of practice. To this end, Chapter 6 (Linking tertiary educators' experiences of learning to theory and context) further analyses the phenomenographic findings in Chapter 5 (Tertiary educators' experiences of learning), adds the additional significant findings, and integrates them with the current literature and the context of tertiary education in Australia.

4.5 Chapter summary

Capturing the tertiary educators' experience of learning was through a carefully designed study. Attention was paid to aligning the ontology, epistemology, methodology, and method to each other and the research question. In practice, this meant that all levels of the study worked with each other. Having considered the criticisms of phenomenography, care was taken in this chapter to explicate the process of gathering and analysing the data. Equally, when conducting the research, specific steps were taken to ensure the best interview process. Following the interview protocol closely in every interview allowed for consistency in the interview data. The iterative data analysis allowed for consistency in the analysis of the data

arising from the interviews. These two aspects increase the trustworthiness of the results of this study. These results are presented in the next chapter, Chapter 5 (Tertiary educators' experiences of learning).

5 Tertiary educators' experiences of learning

This chapter presents the results arising from the iterative phenomenographic data analysis of the semi-structured interviews. The iterative data analysis allows for the development of outcome spaces. The outcome spaces comprise the different ways tertiary educators experience learning. The different ways of experiencing learning were grouped into related categories, each possessing a distinguishing set of features, with each category linked by its connection to tertiary educators' experiences and understanding of learning.

In line with phenomenographic research practice, all outcome spaces are presented with the category identified by key word/s, an explanation of the category's key features, and in some cases how the specific category varies from those before it. This process is repeated until all categories have been described. Each category is illustrated and supported by two quotes. The category description reveals the relational distinction between the different categories within the specific outcome space. In this study, outcome spaces are represented using a circular graphic to ensure there is no assumption that lower categories are necessarily subsumed by higher categories. Equally, there is no necessary linearity between the categories nor a necessary move from the simplest to more complex category.[12]This chapter presents tertiary educators' views on learning from two perspectives, tertiary educators as professional educators then as learners (section 5.1—Tertiary educator experiences of learning). The chapter then offers the educator views on facilitating and inhibiting factors in learning (section 5.2—Facilitating and inhibiting factors in learning). Educator views on learning from the mentor perspective (section 5.3—Learning from a mentor perspective) are next offered. The final results which are reported on are educator views on learning from the perspective of grounded concepts (section 5.4—Learning from the perspective of grounded concepts)—commencing with the outcome space, followed by the referential and structural aspects for each category. The chapter is summarised and a link is provided to Chapter 6 (Linking tertiary educators' experiences of learning to theory and context) (section 5.5—Chapter summary).

[12] Please see Chapter 4 (Design and theoretical underpinnings of this study) for more details.

5.1 Tertiary educator experiences of learning

This section examines educator views on learning from two perspectives—as professional educator and then as learner. Section 5.1.1 (Learning from the professional educator perspective) focuses on educator views on learning from the professional educator perspective. Section 5.1.2 (Learning from the educator as learner perspective) focuses on educator views on learning from the educator as learner perspective. Each category is supported by two relevant quotes. The quotes have the most relevant part in blue. The remainder of the quote is used to provide context.

5.1.1 Learning from the professional educator perspective

Interview question 1: From your experiences as a professional educator, what have you noticed about learning?

Figure 5.1 (Learning from the professional educator perspective) offers qualitative variations arising from the first interview question.

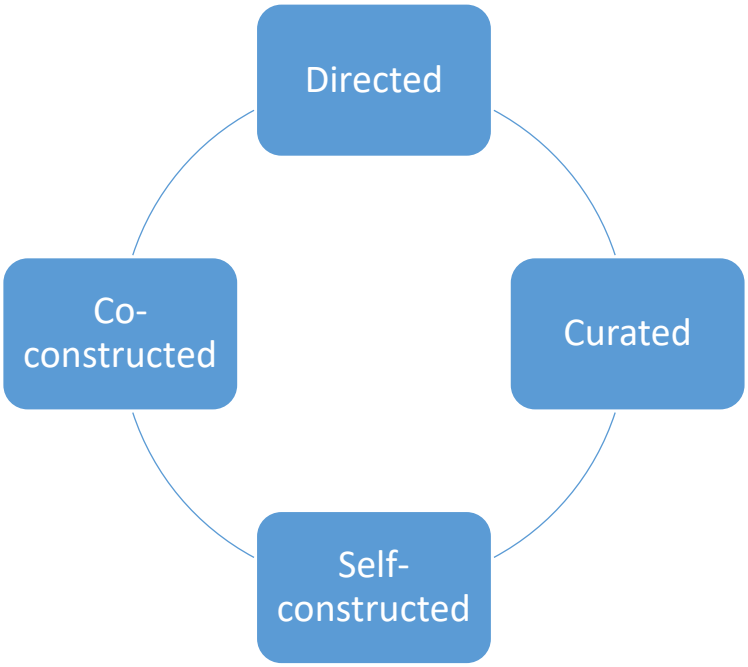

Figure 5.1: Learning from the professional educator perspective

5.1.1.1 Directed

The focus of this category is on intentional and structured learning that is directed by the educator in the context of formal tertiary education. The directed structure allows learners to begin the process of integrating new information into their existing knowledge base. The structure provides a known map for the learner, based on beliefs and 'the known' or accepted

body of knowledge, and educators need to follow this in order to meet accreditation requirements. This enables the learner to obtain information, discuss, reflect, and clarify. Learners make connections to existing knowledge.

> First of all learning is structured ... and I think that's one of the most important things about students being able to learn in a classroom for the want of a better term as opposed to going to a library and just picking up books ... learning has to do with not just picking up information and understanding it from a number of different modes but also within a classroom anyway, structuring learning has to do with phases of the lesson ... that kind of structured learning gives you an appreciation, a greater appreciation, as you move forward given what you've already studied and how much emphasis you place on certain aspects of foundational learning. (Interviewee 1)

> So the design of the learning, I think can cope well within the face-to-face environment but also the online environment ... it's still got to be structured up in a way that enables people to get information, seek clarification around their understanding of it, and then share that with somebody else to encourage that clarification process. For a start, then opportunities for people to unpack that information. As much as I dislike that word. But there's got to be that opportunity around 'Well, ok, what does this mean for me? Where does that make sense for me? Where can I see some connections to things that I've seen done or I've done? Does that make sense for me? And if it doesn't, what doesn't make sense for me?' So how can I frame up those questions? ... You've got to build those times in for that discussion. You can't rely on people just being the empty vessel and just pouring the information in. There's got to be some process in the learning process for people to make connections with what's known, what they believe, what they don't believe, then there's got to be some exploration of it. 'What are we actually talking about? Where does that actually fit with what I currently know? And if it doesn't fit, why doesn't it fit? Is there something wrong with what I believe? Is it the way that thing works or is this valid? How does it make sense to me?' So you've got to provide those sorts of opportunities for people to do that exploration and ... depending on what it is, put it into practise. 'Well, ok, did it work? No. Well, why didn't it work? Is there a gap in my knowledge?' It can't be an initial learning thing. There's got to be that time for understanding, practise and rehearsal, re-contemplation of why it is working that way. (Interviewee 4)

5.1.1.2 Curated

The focus of this category is on the importance of curation in the context of formal tertiary education. In this category there is an emphasis on a shift in educator roles from standardised content-transmission towards learner-sensitive and context-sensitive curation. It emphasises the need to curate learning materials that will assist learners to deepen their learning. The curation is intentional, critical, and strategic. It is assisted by the integration of the internet and

related technologies and the learning process. These technologies enable increasingly immediate and low cost access to an extensive and high quality variety of learning resources.

There is recognition in this category that the information gatekeeper role of educators has diminished by increased direct student access to information as enabled by technological changes. It recognises that learning content and processes remain selected by educators, within course requirements, in their dual roles as content and process experts.

> I've noticed that there has been quite a different approach by students in the last 10 years to what I've been accustomed to previously. And I'm not sure that it's necessarily to do with how they learn, well, maybe it's how they learn. Not the learning process itself in terms of the cognitive and behavioural change, necessarily. But in their motivation and focus on learning. There seems to me, that if I think about and reflect upon the last, say, 5–10 years versus the previous 10–15 years prior, there's all of our technology shifts and with the shifts in moving from generations that are now, as they commonly refer to as digital natives in that they've grow up with the YouTube and TVs and Google as being a part of what they do. But that's made for a very different set of processes for acquiring new knowledge and skills than what I've noticed previously. (Interviewee 5)

A comparison is then made between now and 20 years ago in relation to the teaching approaches and learning.

> So if I just take that a little bit further and say 20 years ago, students would come to class and we would craft a learning experience for them. The way we'd craft a learning experience probably isn't all that different ... I don't think that's changed because I think the process in which we try and provide students in order to help them acquire knowledge is sort of the same still in our perspective but not in theirs, in that many of them now don't come to class. They're not that interested in the face-to-face social interactions that we would try and facilitate in order to drive adult learning into a deeper level. They want to be able to acquire things quickly. There's an 'if I haven't got it in five seconds then it's taking too long. If I don't understand a concept, I'll just Google it. I don't need to read and sort through materials' in the way that I, we probably did, and that I know I certainly did. So that's certainly changed. (Interviewee 5)

The final points made by Interviewee 5 relate to the academic staff and how they are responding to the demands of the new approaches to learning adopted by their students.

> ... and then for us as educators, for us to learn how to adapt processes of learning that is more in line with how students today want to consume their learning I think is a real challenge ... They're not coming. They will download the lecture, so all of our lectures are now recorded, so we have a mandatory recording policy at [institution name] so everything gets recorded and uploaded onto our Blackboard learning management system. And I've talked to those students and they'll download those lectures lovingly every week. They won't come but they'll download them and then

> they'll speed consume them. So they don't play them at normal speed, they play them at 8x 16x speed, speeding through what they think they already understand and stopping for where there was something that they didn't quite get or think that they need to review in a deeper way and then speed through the rest. So they speed consume everything. So for us, as educators, trying to figure out how we provide students with an opportunity to participate in the learning experience in the way that they want to participate, but still provide them with the benefit of thinking more deeply about the principles that underpin some of the concepts that we're trying to share, is a real challenge. (Interviewee 5)

> I've even heard employees say, and even students say, 'Well I'll learn that when I need it. I don't want to have all this stuff in my head just in case. But if I do want it or need it, I need to know how I can find it' ... So whilst Dr Google is wonderful, is Dr Google providing the right information and the appropriate learning? I think that's just something we have to accept and help direct. And that's what comes from the learning education. There is a real shift around building learning to curating learning. And this where it gets back to the educating of the people that build learning and deliver learning ... you've got to start investing in people that actually build the learning and that capability. So my thing is how do we continually build outstanding instructional designers and the curating of learning? Because there is so much information now available to us. How do we make sure we get the right learning at the right time and it's meaningful? So there's as much challenge now where I see learning is to curate or pull together, rather than go to a series of textbooks or trying to actually start something from scratch … Then the potential to learn from each other is massive but that needs to be facilitated extremely well and you still do need to have really strong methodology, systems, etc. that underpin that learning that you're doing. So theory still remains extremely critical because we still need, or I believe that we still need, to have clarity of why: 'So why are we following that action? Why are we taking that leadership framework?' Without that theory, or whatever, often there'd be a disconnect ... And then like I said the technologies will continue to disrupt and change the way that we engage in learning. (Interviewee 7)

5.1.1.3 Self-constructed

The focus of this category is on the importance of the role of individual differences, of variable and unique meanings formed by different learners from what might seem to be identical events and experiences. These variations may be influenced by unseen differences, such as variations in prior experiences of formal tertiary education, or from differences in current demands on the learners both within and beyond the learning environment. Because meanings are self-constructed, material needs to be personally relevant, questioned, critiqued, and applied to their lives rather than simply believed and regurgitated. It is the educator who teaches in a way that connects the learners with the material being covered.

> I think learning is really dependent on the people who undertake it. So I find that learning is not just one kind of construct but I think that my

> students take the content that I teach and accommodate it in their own minds and make meaning for themselves. That's something that I've definitely noticed over the past couple of years ... what I mean is not necessarily what my students perceive it or understand it as. So just being really mindful of the different perceptions or different constructs that students can make ... also what I've learned is that students come with a lot of past experience that we need to really value as well. And really having that in the back of your mind and being sensitive about that. I feel as though learning is inherently connected to your past experience and your past experience as a student as well. So, for example, I have a student that I teach. He hasn't had a qualification over year 10 certificate and now he's doing a Diploma ... so quite a big step ... I struggled with him for quite a like number of weeks because he was really hesitant about having that student identity, of being a student again, because his past experience of being a student was quite negative, quite difficult for him. So I feel your identity, your past experience and learning are all inherently connected and part of the same thing. (Interviewee 2)

> ... I understand teaching adults is a very different animal than to teaching children. In regards to, specifically adults, including myself, like what I'm learning to be immediately applicable to my living. I can't just learn it for the sake of, without hanging it on something in my brain already. It needs to be relevant. And I understand that with my students as well. So I always try and make what they're learning relevant to their other learning, or to their life. Just to hang it onto something, so it means something to them. Also learning for adults, particularly at the level I teach, needs to be more than just descriptive, like parroting back to me what they know. They need to be able to apply it, and critique it, and all that sort of stuff. So whatever they're learning, I don't like them to just accept on face value. I want them to question it, and I want them to critique it, and that's how they learn more I suppose ... I know they're going to be very selective, so I make sure that what I give them is what I would select if I was them anyway and that it answers the learning outcomes and addresses the assessments ... So in a summary aspect, adult learning has to be very directed, concise, succinct, to the point, and no wishy washy riff raff, I haven't got time to do any more reading other than what's necessary. But, at the same time it needs to be higher order. So critiquing and applying, rather than just regurgitating what they've just learned, what they've been reading about. (Interviewee 6)

5.1.1.4 Co-constructed

The focus in this category is on the importance of both the educator and the learner dialogically coming together for the learning experience in the context of formal tertiary education. The relationship between them allows a collaborative approach to learning that includes exploration resulting in the emergence of new insights for all involved. Knowledge is seen as co-constructed, facilitated, and shared.

> When I'm in a classroom, the goal that I have is I want the students to be learning as well as myself. I want to actually have that relationship with them where I can see that they are learning, that they are understanding.

> So I find I need the feedback from them. I'm looking for the eye contact. I'm looking for them asking questions. I'm looking for the body language, that sort of thing, so that you can try and anticipate when a student has a question. Because you do often find that students are a little bit reluctant sometimes to ask questions. And I think really learning needs to be that exploration. So that they feel free both to respond to a question and to ask a question too ... It's always for me been about that relationship and the communication within a relationship so that you are actually helping to guide them, but that they are making steps themselves towards their own learning. (Interviewee 12)

> So I think that's one of the basic things I think I've felt about being an educator, that in fact it's a dialogue as opposed to that kind of imposition, or that mastery upon someone. (Interviewee 18)

5.1.2 Learning from the educator as learner perspective

Interview question 2: From your experiences as a learner, what have you noticed about learning?

Figure 5.2 (Learning from the educator as learner perspective) offers qualitative variations arising from the second interview question.

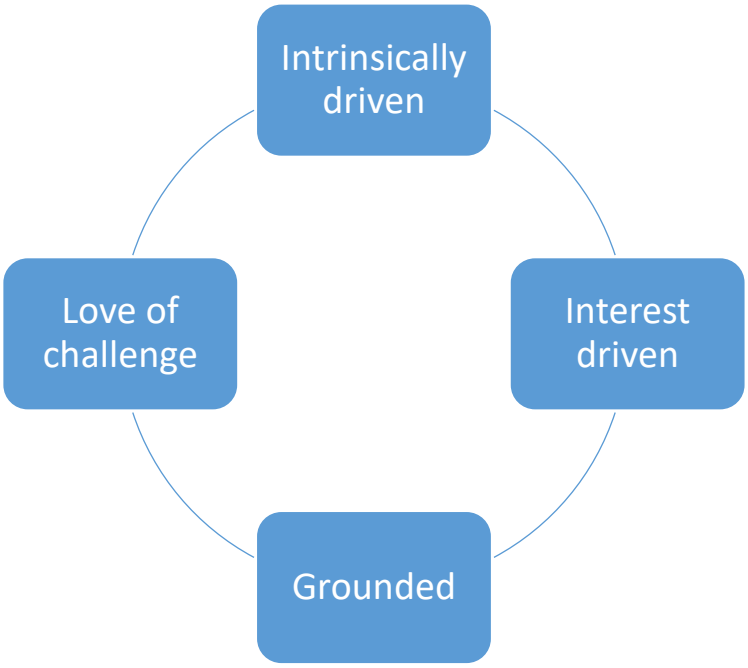

Figure 5.2: Learning from the educator as learner perspective

5.1.2.1 Intrinsically driven

The focus of this category is on learning that is intrinsically driven and begins with prior knowledge and experience. Learning is seen as ongoing, progressive, and incremental

development which starts with an interest in an area. Learning occurs through linking to prior knowledge, often in an organic and unexpected manner. Intrinsic learning is driven by innate curiosity, the satisfaction of learning for its own sake, rather than necessarily connected to any particular extrinsic purpose.

> I learn better when the material I have to learn builds on from what I've already learned. It's a building process. If I'm learning something brand new without any scaffolding, it doesn't make sense. And ... there's nowhere to hang it in my brain, and it won't stay there. However, if it's related to something I've learned before, and it expands on what I've learned before, and it's relevant to what I'm trying to learn, or what I'm doing now, it'll stick better. The glue needs to be there first for it to stick there, so to speak. It won't just hang in space, it'll just get lost. It needs to be relevant. (Interviewee 6)

> So learning is for me. I go with what interests me but it's always something connected to the basic idea I had to begin with. So I'm always interested in one particular thing, whether it be a very broad thing like history, or it could be something as focused as who is this particular person and what kind of person were they in the context of their historical life and times. That kind of thing is the starting point, but then the learning is about all the things that surround it. And sometimes it does lead me to places that I wouldn't expect to journey to ... And so learning is something that allows me to engage with all sorts of information that gets me to the path eventually. (Interviewee 18)

5.1.2.2 Interest driven

The focus of this category is on learning that is driven by the interests of the learner. It emphasises that learning occurs beyond formal educational institutions and draws attention to the ready availability of knowledge and information from a variety of sources. The learning is driven by an interest in understanding something more deeply.

> I like to continually learn. I'm currently studying in a vet science degree as well myself because it's another area of interest I have myself because I have a farm. So I'm doing a bit more deeper understanding of the animals that inhabit my space ... I understand where our students are coming from, in that it's very easy to acquire this information now ... So for me, if you have a ravenous thirst for new knowledge, and to challenge your current thinking patterns, there is so much that is available so easily and so readily. (Interviewee 5)

> As I've grown older, I'm more interested in hearing the expertise of whoever it might be that I'm learning from or with. At the moment, for example, there are incredibly good documentaries that provide you with a lot of information about a lot of things, or specific things ... But I'm constantly checking it against my own experience. I know I can't do certain things so I need an expert whose skills and knowledge and experience have been refined and honed, in order to be able to do ... renovating a house or

> putting up a door or fixing a T.V. or whatever it is, or a computer. So I want to know more about it, but just enough to understand what the expert's doing. (Interviewee 15)

5.1.2.3 Grounded

The focus in this category is on learning grounded in experiences of the learner. These experiences may occur within educational institutions and/or beyond them. A clear distinction is drawn between formal and informal learning. Formal or educational learning may be powerful yet limited by its focus on satisfying assessable credentialing requirements. Informal learning may be less bounded and sometimes more innovative resulting in adaptive learning. Self-awareness, reflection, and connection with others play a role in both types of learning.

> ... I think learning relates to you understanding key aspects of foundational aspects. Learning within an institution I think means satisfying requirements which means that learning is sometimes limited. It's about how do I best answer this question and learning becomes more about technique in terms of how to write an academic essay which some people never really acquire except by accident I think. And I think learning, really the best learning I think, often doesn't take place here. It will actually take place after people graduate. I mean if you go to education ... what you learn when you are doing the degree is really nothing compared to your first couple of weeks on the job ... I think self-awareness is a really big thing. I think I'm constantly questioning myself over a career anyway about how to do the teaching better. (Interviewee 1)

> So if I look at say, my learning experience, a large contribution to my learning has been through experience and exposure. So being given the opportunity of doing this, and stick up my hand and say 'I'll have a go at that'. And that leads around to a personal preference. So happy to roll up my sleeves, look at problems, try to get control and learn along the way, and learn from people that have got that knowledge. So that type of opportunity, and then you build up capability with that. But then there's aspects where you do need more formal type of knowledge and understanding. I might go to formal education programs, or I might just go to seminars, sessions, or whatever, that fills that particular gap. Or as I said previously, I might search online, listen to a TED talk, or read a white paper, and get some knowledge that way ... So if I go back to my own personal learning, I will general look to learn informally. And as you get older you build networks and you have connections and you reach out to those networks or whatever and you go 'I need an answer to this, can anyone help me?' ... When I joined the corporate world, nearly 40 years ago, you stood out from the crowd for completing your secondary schooling and getting to matriculate. Now, 'have you got a degree? Have you got a double degree? Did you get honours?' The bar continues to lift ... So this education level makes us smarter and we're able to provide all that knowledge back into the community in that particular industry or whatever. And enables us to be more agile and advance and all that type of thing. (Interviewee 7)

5.1.2.4 Love of challenge

The focus of this category is the emphasis on learning based on self-driven challenge. This form of learning elicits a different affective relationship to the learning process and outcomes compared to learning that is required by others. Engagement of the learner occurs when they develop a personal relationship with the learning that is based on their own life situation, including their motivation and ambition.

> As an educator I have a really deep sense of gratitude to learning ... a significant amount of respect and love for learning when it's self-chosen and when it's self-directed. And by that I mean that I've had no pressure on me whatsoever to do this course. I found it myself and I went and completed the course. So I feel that learning for me, being a learner ... the way that you approach the learning really depends on what your life situation is at that time, what your motivations are, what your ambitions are, and the way that you relate to that learning. If you've been pushed into something you don't have that. I find that you don't have that same connection as if you're passionate about something and you find a course from your own accord. (Interviewee 2)

> If it's not rigorous, if there's not some challenge to it, I don't think that we place enough value to it. One of the classic images that was used during this learning to learn project was a butterfly coming out of its cocoon ... Part of the butterfly's struggle is breaking out of that and that helps pump blood into the wings and allows the wings to fully form. So they showed this example where they actually cut the chrysalis, and the butterfly that came out of that one didn't have to work as hard and as it came out the wings were underdeveloped and it couldn't fly. Yet the one that had to struggle pumped lots of blood into its wings and broke out of the chrysalis all by itself and then obviously flew off. And that metaphor was used with kids to talk about 'awww this is too hard' ... The learning doesn't work unless there's some form of rigour to it and you often see that with people that stuff has come easy for them through school or their learning career and they suddenly hit something that is challenging. I often see that. Tales that are told of first year uni and kids that have breezed through and they've been spoon fed the entire way and then they get to a uni environment and go 'Shit, I'm responsible for this' ... But you know when they hit one of those challenges, if they haven't been a person that has some of that challenging learning that they've had to get through, it is very difficult to persevere and have all of those really constructive learning experiences that promote good learning. (Interviewee 4)

This section focused on learning from the perspectives of the professional educator and the educator as learner. In this next section, both perspectives combine to identify facilitating and inhibiting factors in learning.

5.2 Facilitating and inhibiting factors in learning

This section examines the facilitating and inhibiting factors in learning through the lens of interview question 3:

> *Interview question 3: From your experiences as both a professional educator and as a learner, what have you noticed facilitates learning and what inhibits learning?*

These factors are first examined separately and then combined. Section 5.2.1 (Facilitating factors in learning) focuses on the facilitating factors. Inhibiting factors are focused on in section 5.2.2 (Inhibiting factors in learning). Section 5.2.3 (Facilitating and inhibiting factors in learning) provides the overarching categories for facilitating and inhibiting factors combined.

5.2.1 Facilitating factors in learning

> *Interview question 3: From your experiences as both a professional educator and as a learner, what have you noticed **facilitates** learning and what inhibits learning?*

Figure 5.3 (Facilitating factors in learning) offers qualitative variations arising from the third interview question.

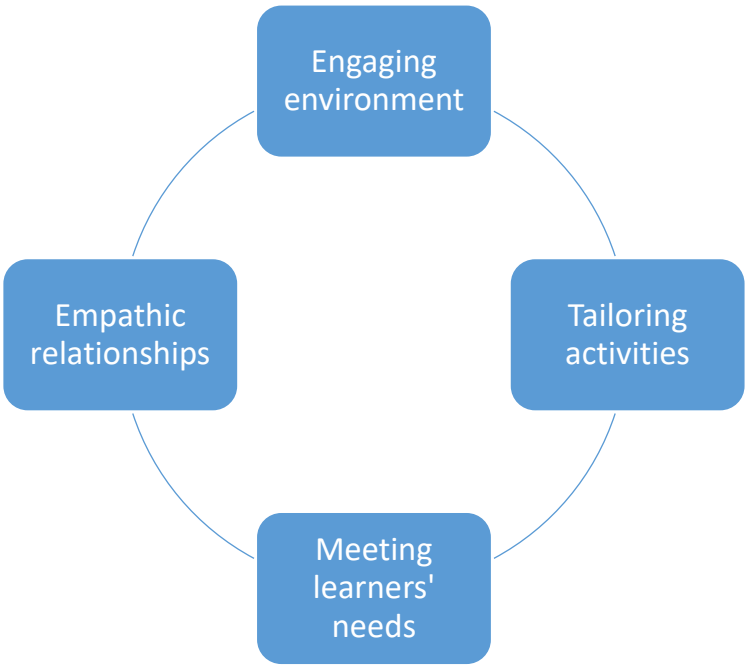

Figure 5.3: Facilitating factors in learning

5.2.1.1 Engaging environment

The focus of this category is on the importance of an engaging environment for learning. The factors that engage are considered universal or separate from individual learner preferences,

differences and approaches to learning. They provide the basis on which the educator can engage learners to build the learning experience.

> I was really engaged. It was not a chore to learn. So, from the teacher's perspective, or teaching, it's really fun to see that when you are as passionate as a teacher as the students are, how interesting it becomes. And there's a lot of discussion, conversation and learning that goes on in that space. (Interviewee 16)

> So my life has been marked by lots of different experiences of learning that engage the affect, the intellect, the physical, the kinaesthetic, the emotional, the lateral, whatever it is. That's, for me, the learning process, and it's ongoing, I'm learning every day ... Immediate engagement, I think, with the learners, and as a learner, being open to that immediate engagement ... So I think immediately it needs to be personal ... And I find the expert speech maker, the one who delivers at a TED conference, and a stand-up comedian, share the same strategies. They're story tellers first off, and they immediately engage, so the most effective ones, either TED or comedian, they engage from the personal, which is affective. (Interviewee 15)

5.2.1.2 Tailoring activities

The focus of this category is on the importance of tailoring activities to meet the various learning preferences, interests and approaches of learners. The educator plans and implements these strategies in their general teaching approach, regardless of the topic or learners involved.

> I suppose everyone learns a little bit differently I think. We've got our own learning styles, and things that we'd prefer in terms of how we work through things and I like to be able to respond to that. So I know how I learn best in terms of being actively engaged in it, if I'm reading, taking notes, that sort of thing, so that I'm actually working with material. Just listening to it won't always do it for me. I find for others it's a more visual learner. I wouldn't necessarily need that but just some basic sort of diagrams can sometimes help ... So I remember in my first year of uni there was a teacher who would use some fairly basic diagrams, just to show where people were in an accident sort of situation in a tort situation. And that was where I started to realise that there are different modes of learning. And that some people will respond to one more than another. And for me it is more the words on a page, or a very basic sort of diagram, sometimes flowcharts. But to get the idea that other people are actually much more visual, and need the colours, and the creativity, that sort of thing, for them to understand and retain information. And encourage students to work with what works for them in term of their learning. If you're going to be able to communicate with them fully, you've got to I think be at least understanding and respectful of the fact that students may, in fact, learn differently. And that's why actually using different tools in the classroom can be helpful. And encourage them to find the one that works for them. (Interviewee 12)

> I actually believe in a more communicative approach, where I can discuss the material with the students, and think of examples, and get them to give examples, and tasks. Give them task based activities and the task needs to be in context as well. It has to be about what they're interested in. (Interviewee 13)

5.2.1.3 Meeting learners' needs

The focus in this category is on meeting learners' needs in the context of their broader world. This includes being aware of and responsive to factors which risk becoming learning barriers.

> ... when you have a teacher that can inspire in the sense of make them feel that they can succeed, and let them know what their frustrations will be, but those frustrations are what you can work around. (Interviewee 9)

> They come into a space where they actually can learn the way we should be teaching, and they come out in confidence, and one student once said to me,' I can't believe who I am now'. Because they had felt they'd transformed personally just by being in a safe environment. But actually starting to unpack some of those barriers to learning. (Interviewee 14)

5.2.1.4 Empathic relationships

The focus in this category is on creating learning environments that support learners to develop and grow in a safe manner, while recognising their individuality. Educators empathise with their learners in an effort to respond to their specific learning needs.

> ... to get that transformational learning to happen, all the participants need to become comfortable and they need to become willing. So it's creating a learning environment with the students that sort of supports their own individual circumstances where they sense trust, curiosity, that's one of my key things. It's a bit like a caterpillar's cocoon, every cocoon is slightly different because it's made from all the things that they've had in their life, and then they emerge from that something else again, it's sort of almost like that, so that reflective process can only ever be made up from the things that are from their life, and hopefully out of that emerges something which is a bit different than what actually went into it. (Interviewee 3)

> What facilitates learning, I think is an atmosphere of encouragement, of realistic expectation, but, an empathy towards the students, that it's all so new to them. It's like a new language. And putting yourself back into their shoes, that's how you were at some point as well. From a learner's point of view, I think the same answer applies ... realising that the words you use might not mean the same to the learner. That they come from vastly different experiences ... Not dumbing it down, but I think that's important as well, and that I think the expectations should be realistic as well. But I think, very important that we don't dumb it down. (Interviewee 11)

5.2.2 Inhibiting factors in learning

*Interview question 3: From your experiences as both a professional educator and as a learner, what have you noticed facilitates learning and what **inhibits** learning?*

Figure 5.4 (Inhibiting factors in learning) offers qualitative variations arising from the third question.

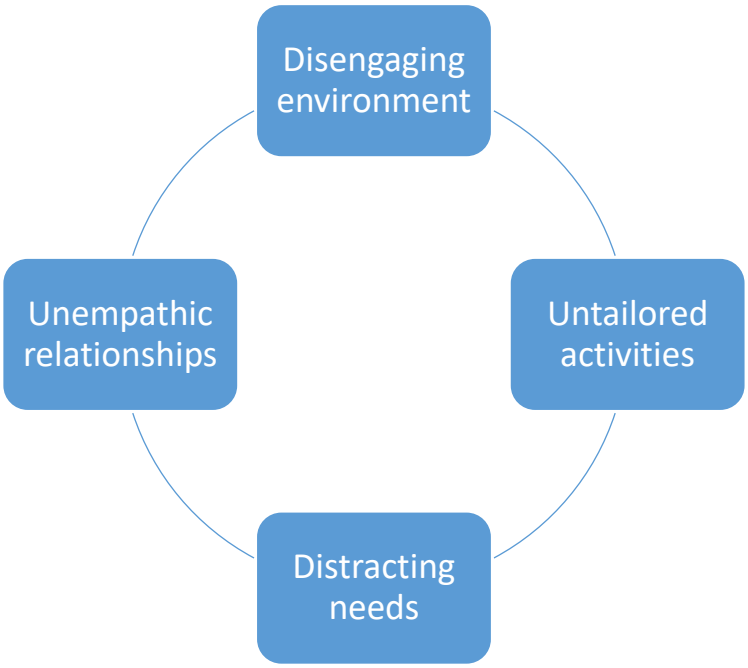

Figure 5.4: Inhibiting factors in learning

5.2.2.1 Disengaging environment

The focus of this category is on factors that disengage the typical learner. These factors are independent of the individuality of learners or their specific needs. Instead, Category 1 focuses on factors identified in the way material is focused and/or presented and how these disengage learners. A central issue in this category is when information provided by the educator does not connect with the learners' needs or prior experience.

> ... sage on the stage will deliver to you [that] they [the educators] are greater than you, that they are actually not interested in your learning. They're interested in the discourse that they are going to give around that subject, and especially people that intimidate those that are learning. So, there's no celebration of learning, it's just a power play, essentially, which would be very hard to get through to students and especially I was talking about those disaffected learners that have come out of high school and presumed they're not that bright, they're not academic. (Interviewee 14)

> I think delivering materials non-stop, without concept checking questions, without engaging the audience is not great for learning, that doesn't work very well with engaging students. Tone of voice, standing still in one spot the whole time, death by PowerPoint. (Interviewee 13)

5.2.2.2 Untailored activities

The focus in this category is on the negative impact of untailored activities. This specifically involves delivery of information by the educator. There emerges a power imbalance between the educator and learners. Educators who do not offer variety or do not match the needs of the learners increase inhibiting factors. While educators have control over learning strategies, their choices do not necessarily match the needs of the learners or learning itself when too focused on concepts alone.

> I think that the inhibitor is where we teach them a series of facts. We don't teach them how to think, we teach them a series of facts ... if you don't have the competency defined quite really tight, and you don't have an assessable outcome, then your learning is just theoretical and waffly. (Interviewee 9)

> ... learning something that hasn't been scaffolded. It's a new concept that relates to nothing I've learned before, and relates to nothing I'm doing, or to the content and I can't see the relevance of it, [then] that inhibits learning for sure. (Interviewee 6)

5.2.2.3 Distracting needs

The focus in this category is on educators responding to needs of the learner that distract from their learning. These distracting needs vary, such as physical needs or confusion about information provided. Whatever form the distracting needs take, they divert attention away from learning. Of particular note is the affective impact of material and activities conducted in the learning environment. If not managed well, learning may be minimised or stopped. The interviewees quoted below came from markedly different disciplines, law and counselling, yet they encountered similar strong affective responses to course content.

> ... with some subject areas that can be even more of a problem. If say, some of their problems have been triggered say by abuse in their childhood or something like that, some of the compulsory subject areas that students have to do in law might include criminal law or evidence law, for instance, where you are going to get cases coming up that might actually really hit a raw nerve for those students, so that really impacts on their learning as well ... In other cases, it's with the assessment. You can have triggers with problem questions that are set ... I have in the past tried to keep problem question scenarios that I set away from certain areas of law where it could be a trigger for a student sitting in a three hour exam ... Because it can actually be quite traumatic for them in some situations ... one of the most common forms of assessment in law is your hypothetical problem, because basically what you're doing is you're creating a situation that the student may encounter in practice. So you've got a client who basically walks in and says this is what happened to me, and tells them their story, basically. And that story may in fact be quite traumatic. (Interviewee 12)

> A specialty in abuse counselling, the first time I'd run it ... I had this girl in the room. Let's say there's six students, maybe 10 at the most. I forget exactly. And we weren't that far into it when one of the students discloses that she had been held captive for a year and mentally abused and probably physically abused. And was probably more forthcoming than you would expect in that context but obviously her filters had been severely affected by her experience. Her boundaries had been all over the shop, so she didn't have good boundaries about what you might say in that context or what you might not say. So that had a huge impact on the rest of the day and for me too. I mean having to manage myself. Part of me is going holy [looking to the sky] what do I do with that? So wanting to give her freedom to speak but be able to stop at an appropriate point so everyone else wasn't lost along the way ... I found there even in some of the role-plays. They give you role-plays to do in counselling as you would probably be aware. And they're representative of what happens but they're not meant to be true cases but they represent the sort of ... The number of people who get triggered on those. You think they're fairly innocuous but the number of people get triggered. (Interviewee 8)

5.2.2.4 Unsupportive relationships

The focus in this category is on the negative impact that unsupportive relationships have on learners and learning. Unsupportive relationships may disaffect the learner or be so influential that the learner removes themselves from the learning environment. They may arise from family expectations, prior educational experiences, or expectations of themselves. Educators may have little control over these experiences as they exist in the world of the learner beyond the present learning environment.

> Oh, people have had a bad experience with learning, if they've been humiliated, if they don't get it, how it's been presented straight away, and they feel silly for not getting it, especially if their peers are understanding it straight away. If learning is not encouraged at home, if they're not from that environment where it's regarded highly. (Interviewee 11)

> We still have communities that don't appreciate education, and will actually exclude people from the opportunities for education. The communities that miss out are lower socioeconomic. And I'll tell you a story, and it just goes go back to a few decades or so. I was doing some work with a school, just on the side, and I was speaking with one of the teachers. And we were talking about the differences between the students, and their level of interest in getting into the workforce, and those types of things. And the secondary school I was talking to was in a lower socioeconomic environment, south of [city name]. And the story that still resonates with me today is he said 'I have a student, a young lad, full of enthusiasm, intellectually bright, potential high, and keen to involve himself in opportunities. But he needed to get the opportunity to get some exposure. And so his background to his family was welfare. And the welfare went back a few generations. It was part of their family culture.' The teacher found him some part-time work to get him used to the work environment, get some expectations of how to seat yourself in a

> workplace, work with managers, work with peers. So some good learnings. The kid was ecstatic. So he went for about three weeks, fully immersed. The teacher was getting good feedback, and then he stopped going. Eventually the employer reached out to the teacher and said 'this guy you put through hasn't turned up for the last week'. So he was obviously disappointed, then obviously reached out to the student, and his father had threatened him never to go to work, because it impacted on his welfare. (Interviewee 7)

5.2.3 Facilitating and inhibiting factors in learning

Figure 5.5 (Facilitating and inhibiting factors in learning) offers qualitative variations arising from the third question.

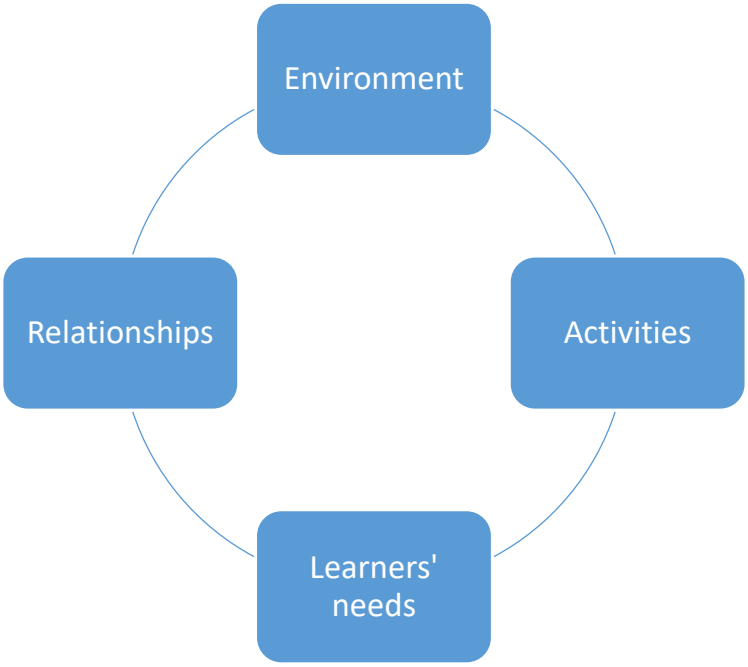

Figure 5.5: Facilitating and inhibiting factors in learning

5.2.3.1 Environment

The focus in this category is on facilitating and inhibiting factors related to the learning environment. In this context, the learning environment contains factors which are seen, inherently and predictably, as either facilitating or inhibiting. The factors could be seen in any learning environment, that is, independent of the purpose or focus of the learning environment and independent of the learners involved. They were likely to be present in most learning environments. An engaging learning environment facilitates learning; a disengaging learning environment inhibits learning.

> If you have all the resources you need readily available then that just makes it smoother. So it takes away some of the potential disruptors or time wasters or whatever. So if you've got them it helps; if you don't have them it can make it a bit harder which therefore impacts the overall impression of the learning. (Interviewee 8)

> There's no racism, there's no discrimination in the classroom. Everybody is treated fair, there's no silly question. No-one gets laughed at ... You can be unlucky enough to get someone in your class that can really affect the culture. (Interviewee 10)

5.2.3.2 Activities

The focus in this category is on facilitating and inhibiting factors related to meeting the diversity of learners. This is achieved by activities which involve a variety of senses, provide simulations of real world situations, and are dependent on the specific circumstances of the learning environment. The impact activities have on the learning process are context-specific and depend on individual learners and educators. The factors are limited to those likely be found in any learning environment. Tailoring activities to the specific needs of the learners is a facilitating factor; untailored activities which do not meet the specific needs of the learners are an inhibiting factor.

> ... we can do some stuff about in terms of comfort and Maslow's hierarchy of needs and that sort of gear ... Facilitating learning for people is having all the stuff they need there and it's at comfort levels. It's the quality of the learning materials. They need to be appropriate for the task and the learning activities that you get people to do, people have got to be aware of what's the purpose of doing this ... Talking about the different structures and strategies that you're going to be using during a particular training session so that people know. Doing that whole mix of reading, and discussion, getting up, being physically active ... Everything that supports learning, if you don't have, that's going to restrain it. (Interviewee 4)

> ... we're using more senses. It's not just about sight and reading, and listening any longer. They can really explore things with more of their senses, because we have multimedia, we have artificial intelligence, we have simulations, we have all these things that I think we can provide a richer and a more meaningful learning experience, if only we could harness it ... So, I think there are some really exciting ways in which we can facilitate some very different approaches to learning, but, staff, they're not skilled in that yet, they're fearful of that, and I think they're some real inhibitors. (Interviewee 5)

5.2.3.3 Learners' needs

This category focuses on the facilitating and inhibiting factors resulting from learners' needs being met or unmet. This category focuses on subtle nuances within the learning experience, rather than being centred on predictable contextual and learner needs. Focus is placed on the

subjective needs of learners. Some factors relate to the learning environment whilst others relate to the learners' worlds beyond the learning environment. Meeting learners' needs is seen as a facilitating factor; the presence of distracting needs is seen as an inhibiting factor.

> Co-operation. So a co-operation of all the students in that place helps to facilitate the learning. If you don't have that, that's where I talk about that intrinsic motivation ... so I think when students excel is when you have that fabulous synergy where they have a wonderful teacher that excites their senses and provides engaging activities, and makes it worthwhile. Students want to know what's in it for me, and if I'm going to invest my time, I want to know how much time, and what am I going to get out of this, and what the value is to me ... [poor] health and well-being of those people definitely inhibits their ability to remember or to settle down and just connect and start thinking. When students are in a constant flight and fight response mechanism, it's very hard for anyone, and you can be quite scatty, so it makes it more difficult. Life issues are inhibitors in that space as well ... there's a whole lot of things that can inhibit learning ... So there's inhibition that comes and goes. And then there's the constants that are there. So there's many types of inhibitors really I guess. (Interviewee 16)

> I also know that adult learners, their primary role isn't just to learn. They're also family members, they're also workers, they're also probably, usually, have medical or psychological conditions. So the learning is only some aspect of their lives. So consequently they're time pressured. So the learning has to be very relevant to the here and now and very succinct and to the point. (Interviewee 6)

5.2.3.4 Relationship

This category focuses on potential facilitating and inhibiting factors being more effectively responded to within a strong relationship between the learners and educator. There is a movement away from traditional fixed relationships built on teacher-student power differential to a more fluid, interchangeable and collaborative mix of educator and learner roles, where all participants are learning-centred. This movement is consistent with a shift in emphasis from beliefs to inquiry in the learning process. The presence of an empathic relationship is seen as a facilitating factor; non-empathic relationships centred on power differentials are seen as an inhibiting factor.

> That the educator and the student both do the learning. I think that's one of the first things that I've noticed more than anything else. Particularly in my discipline in the higher education sector. The students that I encounter often have insights that I don't, primarily because they're coming to the evidence for the first time and are not exposed to the kind of learning that I've been exposed to in terms of the significant background scholarship underlying a particular source or a particular way of reading the source. And they come to it fresh and that actually helps me to learn. And by the same token, by modelling that kind of learning, I think my students begin to

> understand that they can actually contribute to the process of learning themselves. (Interviewee 18)

> I think also having a strong connection with your teacher or your educator and not being frightened by them and wanting to actually engage with them and impress them or do the best that you think that you can do. I think that they need to have a really strong connection with their educators as well ... [Otherwise] I think that students tend to kind of drop out. Not suddenly but I think that they tend to subside, their performance decreases, their interest in the subject—they can really kind of drag behind the others and they'll start to not ... be motivated to come and do the work, not do homework ... just really lose that spark that I think is so important when you are learning. You need to have something that seriously engages you. (Interviewee 2)

This section provided the facilitating and inhibiting factors identified by the tertiary educators. These were analysed and categorised in the order of facilitating factors, then inhibiting factors, and then facilitating and inhibiting factors combined.

The next section focuses on learning from a mentor perspective.

5.3 Learning from a mentor perspective

Interview question 4: Based on your experiences, if you were to explain to a new educator what learning is, what would you say?

5.3.1 Categories

Figure 5.6 (Learning from a mentor perspective) offers qualitative variations arising from the fourth interview question.

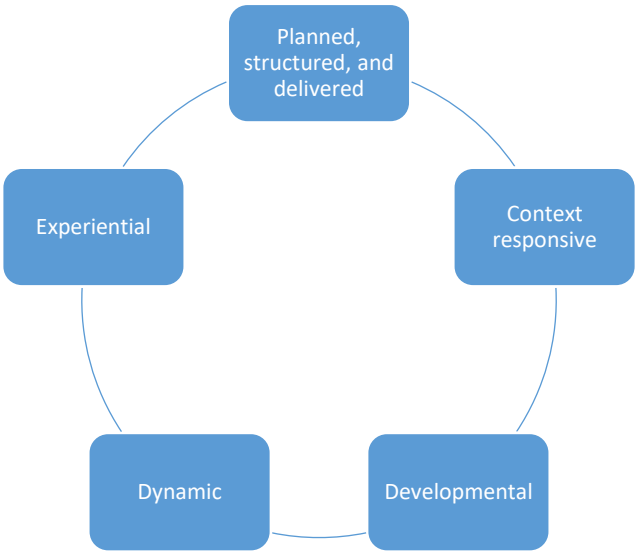

Figure 5.6: Learning from a mentor perspective

5.3.1.1 In an educational institution learning is planned, structured and delivered

The focus of this category is explicitly on meeting predetermined intended learning outcomes (HE) and units of competency (VET) directed by the institution. All activities are tightly controlled, focused on, and restricted to those that meet these measurable objectives. Educators distinguished between formalised learning within educational institutions which fits within this category, and informal learning beyond the educational institutions which sits beyond it. In the formal environment, learning is delivered as a standardised product. This form of learning is focused on structured content, strategies, timeframes, tools such as discussion boards and webinars, and the learning and teaching approach of the educational institution. In this category, the educator helps learners (generally known in this environment as students) become familiar with accepted best practice, as delivered by the educator.

> I'm thinking I would have to do it in a way that respects the fact that we are in a very structured environment. We have units to deliver to these students, within a twelve week program, and each week has their own weekly learning goals. And those 12 weeks we have to demonstrate that we have taught the learning outcomes to these students. So within that structure the way we expect our students to learn is very much like they're these empty vessels that we input this knowledge in that somehow is supposed to stay in there and make sense. And we try and help them make sense of the mess that we're putting in their head because of this structure imposed upon us by the institution [laughs] by encouraging them to collaborate with each other, because we're in a blended and we do it by distance using discussion boards and all that, and webinars. So trying to get them to apply and therefore make sense of their learning. Not only do the content but also do their assessments. I suppose I would tell them yes we are within the confines of this institute and this is how we have to teach and this is how we do it, pragmatically. (Interviewee 6)

> Ok, well within the context of an institution where a particular curriculum needs to be delivered, in some way, I think, as a mentor, I would probably provide the educator with an overview of the curriculum, the literature, time frames, type of student, type of learning that is required, whether it's online, or face-to-face or blended, or whatever. And ask them how they would deliver it—whatever it might be. And depending on what their particular preference might be in terms of communicating within that particular structure, whether it's a class of three hour durations, or online, or so forth, I would engage in the dialogue with them about how effective that would be, knowing, coming from my mentor point of view, knowing what the constraints are. And sharing those with the mentee so they had a better understanding of what could potentially be the most effective way of communicating the content. (Interviewee 15)

5.3.1.2 Context responsive

The focus of this category is on responsiveness to what is happening in the learning environment. Monitoring, adapting, and responding to the learning environment is core to this

category. This responsiveness is of higher priority than the pre-planned learning intentions of the educator and the lesson plan. Rather than being rigidly prescriptive, the emphasis in this category is on the educator being responsive to the unique way in which individual learners form meanings and adjusting their teaching appropriately. The importance of responding to the different approaches to learning (for example, deep, surface, and strategic) that are used is stressed. There is also a focus on learning analytics and the importance of letting learners know the supports that are available for them.

> I'd say all the theories are great, learning theories. Read them, find bits you can take as a facilitator, and implement in the classroom when you're at the front. Go 'okay I know that Kolb's theory', 'people memorise then need to do'. Or whatever the theory may be. Emotional intelligence, multiple intelligence, take it all. And think of a way or a strategy you could use. But don't be prescriptive and think that's your bible. Don't write up a bible and turn to the 'today I'm using page 13 everybody'. And then don't be responsive to what's happening, because you've got your beautiful lesson plan. With beautiful activities, and it's not happening, so you've got to be fluid, you've got to be flexible, you've got to be on your feet, you've got to be adaptive. You might have a longer lesson than you thought, you might have a shorter lesson than you thought. You might have nobody listening, people asleep. Whatever you [prepared], just throw it out the window. Don't not prepare. Don't not plan. Don't not read the theories. But at the end of the day, have the antennas up. Because I believe it's all about having your antennas up, reading your learners and getting a feel. Sometimes I'm like 'okay, I think that I am looking around, it's 9pm, they've got a 9.30pm class finishing', and you can just sense they can't do that last activity. There's no point starting it, so be prepared to cut it. And what I noticed with newer teachers is ... they think they have [emphatic tone] to plough on to page three of the session plan, where they have enough material for two sessions, and they stifle creativity ... The class goes off on some great tangent that's relevant, not talking about something irrelevant. Go with it. Just go there. Forget about the next assignment that they could have looked at. So that's a skill that I think comes with time. So I'd just be like 'Just be responsive. Care about them. Find out about them. Support them'. (Interviewee 10)

> To keep it fun, to provide learning in smaller chunks than larger chunks. So don't overload, read a bit of this, or watch a bit of this, and then we're going to try an activity to see how it goes. And then provide discussion for the students to be able to share what they're picking up in that space of what they're learning. Well learning happens differently for everyone. So it's about making sure that you facilitate all the various styles of learners in your class. So maybe even doing an activity initially to sort of work out what kind of learners you have in your class so that you can make sure you are accommodating them all. And that's a real key to then developing that engagement. And about drawing clear boundaries with your students, what's acceptable behaviour and not acceptable. So sort of setting down the guidelines right from the beginning so that they know where they are, and how you like to be contacted, those sorts of things, and availability. 'If

> you're having an issue, please let me know', but also let them know that you're also watching them and gauging them. So they know that you're aware. I think it's important to let them know that you can see how many times they're connecting with ilearn or their online learning. That there are learning analytics that we can keep an eye on them. And so that we are monitoring them through their progress, and those sorts of things. Because I think that's a care factor. So making sure that students are aware of all the support that's around for them. So it might not just be for what you can offer, but what the institution offers as well. (Interviewee 16)

5.3.1.3 Developmental

The focus of this category is on the developmental aspect of learning. By starting with an overview of what is to be learned, then exploring in more depth, learning may be built over time. Each iteration represents a deepening of learning. Ensuring information and activities are at the appropriate level for the learners are stressed in this category. This category focuses on development of learning over time rather than immediate learning, and emphasises the importance of time and space needed for developing and stabilising cognitive understandings. The process may also involve un-learning in order to create new learning.

> Certainly it is about picking up an understanding or an overview that they can go away with and study to appreciate and then expand. So you need first of all to give people I think a simple overview of what such and such is and then, and if they understand it simplistically, they might then have the ability to gain a lot more from it. So I think learning has to do with you explaining the concept in a way in which your students—they get it. And that goes to curriculums being, or curricula, being written well. The assessments being written well, because that can be very upsetting to students and educators as well. So learning is not going to take place if it's not appropriate to the level of the student. I mean if you have too many research things required of students at undergraduate level or things that are impractical. (Interviewee 1)

> Learning's not instantaneous, it's going to need to have time to become practised at it. And, it's interesting that we're far more prepared sometimes to accept that with certain skills. We accept that when we're learning to walk, well, that takes a long time. Very few babies suddenly stand up on their two feet and walk like they've been walking for years. What's all the pre-cursor that happens to that physical movement? Perhaps with some of the cognitive stuff we haven't given the same sorts of consideration to that trial and error and practice and rehearsal. To try and use those sorts of analogies with people, to actually get them to think about their thinking, and understand what, to a different level, what actually happens in the structure of the brain and how that works. I think that is important, to fully know why something happens, so much that we do what we think is automatic, but it's actually not. It happens so quickly that it seems like its automatic. So it's un-learning all those patterns of behaviour, and, I think we've talked about un-learning before, that there is un-learning. That sometimes need to happen, particularly if you've learned

> something that's incorrect. To actually get that quick response, it's building the understanding and, I mean, that's where the constructionist view around we build on existing knowledge and question things that we don't believe that are right. Yet we do in a learning situation. You do need to structure it up so that people get that opportunity to do all of those sorts of things. To be active participants in the learning process, and not just be treated like an empty vessel. (Interviewee 4)

5.3.1.4 Dynamic

This category focuses on the dynamic nature of learning and focuses on learning rather than the roles of 'educator' and 'student'. While the earlier categories tended to reflect rigid roles where educators 'teach' and students 'learn', in this category, learning itself is centralised. The fixed role distinctions between teacher and student are de-emphasised, more interchangeable, and blurred. The learning influence pathway can be educator to learner, learner to educator, learner to learner, and learner to those beyond the learning environment. The learning stance changes from passive receipt of known information to joint active exploration of the unknown. Learners may effectively become educators of others within and beyond the learning environment. Any focus on course-defined content is extended to increasing adaptable capabilities. Supporting learners' independence, initiative, and ownership of the learning process is emphasised.

> The first thing I'd say would be making a positive contribution to an individual. Nothing more complex than that. And that contribution can be through building that person's knowledge. It may be that when you come into this field you may build that person's sense of self-awareness. It may be that you open some doors for them that they've previously never realised they were there or that they couldn't open. And the other thing that links to that as well is that domino effect. That if you are engaging and building capability, or self-awareness, within that individual, the chances are that then they may go on and pass that on and create a flow-on effect. (Interviewee 7)

> The very first thing I'd say is be open to learning yourself. Be willing to learn. Be open to learning and be open to learning in ways you're probably not going to expect. And remember that your students will teach you as much if not more than what your formal learning will. (Interviewee 8)

5.3.1.5 Experiential

The focus of this category is on the central importance of experience in learning. This focus emphasises that effective, insightful, adaptive and resilient learning cannot be conceptually forced upon, or mechanically transferred to, learners. Deep learning is instead developed through experiential insight, with this insight based on personal inquiry rather than acceptance of others' beliefs. The view in this category is that insight can only arise from the base of the

experience of the learner, rather than the experience of the educator. This requires educators to consistently step into the viewing lens of the learner. From the viewing lens of the learner, the educator checks whether the intended activities, information, presentation methods, etc. work to effectively facilitate learning. There is also recognition that in tertiary education, learners most often have a breadth of relevant experience that can be drawn upon. This focus on the experience of learners as central to their scaffolded understanding helps synthesize the perceptual and conceptual realms, and grounds and deepens learning. Ultimately, the educator focus emphasised in this category is on establishing and maintaining empathy with the learners as they go through the learning process.

> Always putting it back to the student experience. So I would get them to sort of think about what kind of learner cohort they have and what is going to bring out the best in them. So one of the biggest elements that I've learned to having a successful response from the whole class is the fact that everybody gets a go at tackling theory. I never deliver theory, ever. I frame it as a question and somebody always comes up with the answer. I may expand on it or I may fill in the gaps. But quite often these guys have a breadth of experience, they have a breadth of life experience that means that they probably actually do know, and we're just going to frame it so that we're answering a particular question. (Interviewee 14)

> I think I'd probably ask them to put themselves in the position of the people that they're teaching or educating. I think that's probably the thing. That's usually the way that I can instantly tell whether a lesson is going to work or not if I immediately sit in the seat opposite me and imagine myself talking this particular way, or providing them with this information or that information, would they be interested? Would they find anything to connect with? Would it be relevant to their particular age group, or their social standing? It just depends what the topic is. And so I have with a couple of my mentee's tried to ensure that they always put themselves in the position of the learner and be the learner themselves. So that's opened up, I think for those particular colleagues, a sense of the fact that it's a very open space, the learning space, as opposed to a very closed circuit. And that allows them then to play with the information that they're delivering and make what they're delivering their own. As much as anything else, because immediately they do that they actually become their former student self and immediately they begin to understand, 'oh yes, well that's what attracted me to what I'm doing precisely at the moment, or not.' (Interviewee 18)

5.4 Learning from the perspective of grounded concepts

This research sought to gather and examine the various aspects of learning that has been noticed by interviewees. The final question builds on this framework, and seeks to leverage these specific and detailed observations, through reflective conversion into grounded concepts of learning.

Section 5.4.2 (Referential and structural aspects of grounded concepts of learning) focuses on the referential (meaning) and structural (internal and external horizons) aspects of educators' grounded concepts of learning.

> *Interview question 5: We have discussed learning at some depth. So what do you actually mean by learning?*

5.4.1 Categories

Figure 5.7 (Learning from the perspective of grounded concepts) offers qualitative variations arising from the fifth interview question.

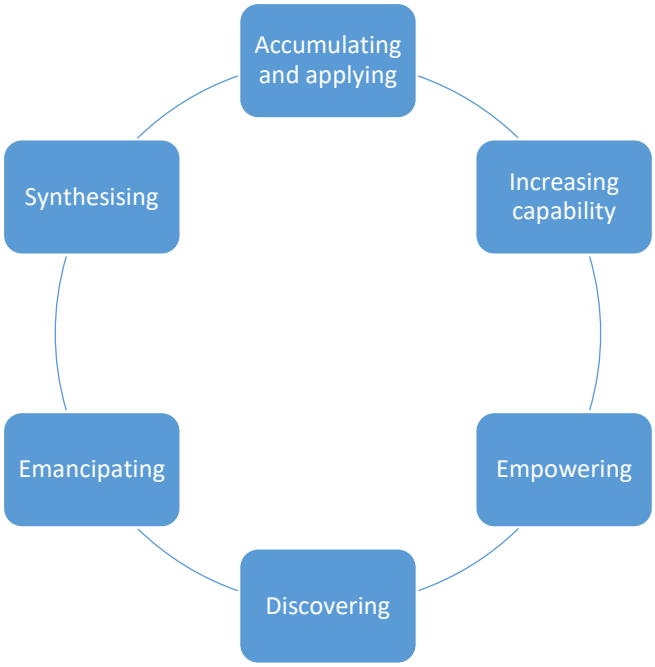

Figure 5.7: Learning from the perspective of grounded concepts

5.4.1.1 Accumulating and applying

The focus of this category is on the accumulation aspect of learning with specific reference to new knowledge, skills and/or attitudes. Equally, it emphasises the application of the new knowledge, skills and/or attitudes. These are all outcomes of learning. This category is focused on the 'what' of learning.

> [Learning is] more than just remembering the knowledge, it's in the doing as well ... it's actually about taking that knowledge and applying it ... and we have a lot of academics who have never practised it. They're just purely academics and they're specialists in this subject but they have not had the experience of applying ... learning is sharing experiences and that's a really powerful part of doing that because that's the conceptualisation of examples of how they are learning has been used ... Learning is knowledge, skills and application ... and it never stops ... Sometimes we need to

> relearn, sometimes we need to unlearn and relearn new ways. (Interviewee 16)

> Learning is the ability to absorb, gain new skills and knowledge that you didn't have before, and put that into practice and become adept and competent at. (Interviewee 10)

5.4.1.2 Increasing capability

The focus of this category is on two parts to learning: the first being the learning goal; the second the process to assist that goal being reached. These learning goals are aimed at increasing learner capability and learner awareness of the ongoing need for learning. While the individual learner chooses their learning goals and self-directs their learning efforts, they may also engage with others' perspectives and information from a variety of sources. Learning can, therefore, be formal and involve qualifications, or it can be informal. The learning process allows the individual to achieve the learning goal as well as the develop attributes that will assist their future learning. Temporally, the focus is on current understandings as well as on future development. This category shifts focus towards the 'why' of learning.

> Learning is a process by which you find something interesting, and you apply focus, and then you incorporate it into yourself as a way of moving forward in any way. I think that's probably the way I would say it ... because learning's always changing all the time, you have to keep up with it ... There's always a new book, there's always a new aspect, there's always a new way of seeing it or teaching it or looking at it, and you have to constantly read, watch TV which is informative, and keep up with everything ... and so that also can facilitate learning. But also it can get in the way of learning—if you don't keep up on the research, and what's current you'll lose out. (Interviewee 17)

> It's a process of coming to know and understand something that you haven't really thought about before. And part of that process involves what you bring to that, what existing learning and understanding other people have brought to it, because students are reading materials written by others. So it's their own perspectives. It's trying to understand the perspectives of others who have had that knowledge in the past ... It's a process where you get probably more from the journey itself than you do the end-product. And I think that's where you've got to get the focus off the ultimate goal. And some students will put it in terms of passing the subject, whereas that's not really the purpose of learning. It's really what you're actually doing on the way, and what you learn about yourself, what you learn about others, and how that influences your thinking and who you are. And how you apply that in situations in the rest of your life. You've got to keep learning. If you don't, if you're not learning something every day, you might as well be dead, or you are dead because you're not actually exploring those things. I want students to understand that learning really is a process and it's something that we do day in day out no matter what we're doing. (Interviewee 12)

5.4.1.3 Empowering

The focus of this category is on a direct link between individual learning and how that learning can empower the learner and the learner's community. It highlights that individual learning is not the desired endpoint; it can also be transformed into empowerment for the community. Thus, individual learning is seen as a social endeavour. This category shifts focus towards an expansion of 'who' is the beneficiary of learning.

> One of the biggest goals for me in education is education that makes a difference. So this shift from creative media, now to the area of community services and counselling is starting to really understand the power of education, through transforming the student, and also their communities. (Interviewee 14)

> It's got more to do with teaching students that confidence to go out and take initiative. So for me, it is that learning empowers someone else to do something that they normally wouldn't do, and achieve a better outcome, a better result for themselves and their social group, however big that social group. (Interviewee 9)

5.4.1.4 Discovering

The focus of this category is on extending learning to discovery of the new. This includes challenging the accepted. This is a fundamental shift from belief-based learning to inquiry or discovery-based learning. It is a shift in primary focus from the known to the unknown, and from replication of accepted best practice to the improvement, challenge of, adaption, and replacement of accepted best practices to best fit the context and purpose. The focus includes both the individual and their world. Insights are gained through engaging with both the known and the unknown. In this way, learning is represented as not simply remembering and applying knowledge content. It also involves examining how we gained that knowledge, challenging it, and correcting or adding to it. There is also a move towards metacognition. The unexpected drives the learning. Learning is seen as the start of a process rather than an end. This category focuses on the 'how' of learning.

> Learning is coming to know about myself in the world and that can be in any number of ways ... it is the whole, it is a space literally in which a number of things are happening, it is not just simply knowledge, it is not just simply content ... it is also how we came by that content or knowledge and questioning that and sometimes finding that in fact the knowledge you thought was learning is in fact incorrect or there is more to it than just simply what you've been told when you were younger ... learning is never static ... it is just the start of a process as opposed to the endpoint. (Interviewee 18)

> Being open to new insights and discovering things about yourself and the world you're in that you might not have expected. (Interviewee 8)

5.4.1.5 Emancipating

The focus of this category is on learning that is emancipating for the learner as a person beyond the learning environment. This is learning that takes place beyond formal scenarios and is not focused on vocational needs, or indeed on any specific shorter-term objective. Its focus is on learning for life and living. It may involve deep challenge to core assumptions, and results in qualitatively different ways of seeing the world. The outcome is to enhance the learner's appreciation of their own capacity to learn in any situation. Emphasis is placed on the 'how', 'where', and 'why' of learning.

> Well I mean learning I think is about so many other things isn't it? It's about self-esteem. It's socially constructed. That learning is important in maybe an academic way these days certainly in institutions like this but there's another aspect to learning that's about living a joyful life and living happily as opposed to living in that kind of socially constructed way. So I think people will often make that U-turn, and learn how to ride a surfboard and still be surfing when they're in their 60s or 50s or whatever it might be and learning how to be creative given their sense of self rather than being once again driven by the professions or the apprenticeships or whatever it may be. (Interviewee 1)

> [Learning is] emancipation ... freeing people from the current situation, whether that's physical or mental, and getting them to understand the opportunities that sit in them. (Interviewee 3)

5.4.1.6 Synthesising

The focus of this category is on the importance of the synthesis of all aspects of learning. This involves the whole person—including biological, psychological, social—and their prior experiences, current engagement, and future development. It can occur anywhere, at any time, with anyone. It involves the integration and alignment of the affective and cognitive realms. It connects concepts to felt importance, and to intuitive experiential understandings, and vice versa. This category synthesises all aspects discussed in the other categories, and reveals the complex network of connections which might be formed during learning. The forming of these new connections requires affective stillness, and undistracted alert attention, so does not normally suit situations of perceived urgent need. The learning focus is organic, spacious, and unconstrained by questions of who, what or why.

> Learning is a continual process ... an all-encompassing process of development and changing mindsets and opening up new ideas and using your past experience to inform or digest new information and make schemata ... not a singular process ... no formula ... does not exist simply in the classroom ... process that pervades human life ... [you] don't just learn in education ... [it is a] continual process throughout our lives—social learning, learning to drive, learning to walk ... holistic ... biopsychosocial ...

> all of your full body, your mind, your physicality, the emotions that you feel ... development and being able to relate better with your environment ... subjects, thoughts, content that you haven't been able to relate to before, or that you haven't been able to relate to in the depth that you're learning about ... embodied cognition—what you interpret in the world is inherently connected to your body and the way that you walk around in the world is connected to your past experience ... tied to who you are as a person and where you come from, what experiences you've had, what your relationships have been like, nitty-gritty personality, psychological factors, physical factors ... learning doesn't really happen in a small room somewhere ... it's all part of the person. (Interviewee 2)

> Learning is opening your eyes, your ears, your senses, to experience, a knowledge, skill, or its application ... so engaging learning really is engaging the whole person in the learning process and the learning process involves the whole body and mind and being present and engaged in that process. So any form of distraction, even though it could be learning, that disengages you in some way, whether it's hearing, sight, or smell, or whatever the sense might need to be called into question, checked. Yeah, so it's a whole of person process that should embrace the whole person, but the whole world of the person as well. (Interviewee 15)

The referential aspects, already discussed in this section, are summarised alongside the structural aspects in the next section, in tabular form. These structural aspects are segregated into internal and external horizons.

5.4.2 Referential and structural aspects of grounded concepts of learning

Interview question 5 (*We have discussed learning at some depth. So what do you actually mean by learning?*) is the only question that has appeared in other phenomenographic studies (see Table 3.4: A sample of phenomenographic studies focused on learning as a phenomenon). For comparability of results, this question is analysed in terms of referential and structural aspects within each category. Meanings in each category within the outcome space are the referential aspects. Internal relationships between the categories, the attributes of the categories, and external relationships within the context, are the structural aspects. Many writers, including Marton and Booth (1997), argued that these aspects are intertwined. So too are the internal and external horizons which form the structural aspects. The aspects of the phenomenon that can be seen to constitute each category, together with the relationships between these aspects, are referred to as the internal horizon. The external horizon is how the category relates to the context in which it is situated. These horizons show the connection between the category and its aspects (Woollacott et al., 2014). Table 5.1 (Referential and structural aspects of grounded concepts of learning) offers the qualitative variations arising from the fifth question.

Table 5.1: Referential and structural aspects of grounded concepts of learning

Referential aspects	Key structural aspects	
Meaning	Internal horizon	External horizon
Learning is both taking on and applying new knowledge, skills and/or attitudes (accumulating/applying)	Compliance learning is associated with passive acceptance and conditioned replication of accepted interpretations and accepted best practice. Compliance is based on efficient automation of memory imprinting and extraction.	Belief-based conditioning through accumulation and application of the known can lead to improved compliance with accepted interpretations and accepted best practice. This can be especially productive in situations where contextual and variable purposive factors do not impinge. The learner is dependent on others for direction.
Learning is increasing the capability of an individual (increasing capability)	A shift to capability-focused learning is a shift from content focus to purpose focus.	A focus on the goal of increased learner capability fundamentally impacts on the direction of education efforts and outcomes. This is a movement towards learner independence.
Learning is a process of individuals empowering themselves and their community (empowering)	Working in groups, teams or communities of practice is associated with access to benefits not available to individuals working alone.	Working with a group, team or community of practice focus increases empowerment and adaptability, both individually and collectively. This is a movement towards learner inter-dependence
Learning is a critical inquiry and creative process of individuals gaining insights about themselves and their world (discovering)	Critical inquiry is associated with active learning and is awareness-driven, often leading to creative adaptations. It requires a willingness to back personal judgement, and to respond variably to different contexts.	Discovery-based critical inquiry leads to increased adaptability. This inquiry helps improve best practice and adaptation to situations where contextual factors impinge.
Learning is a felt change in subjective experience that results in a shift in relations with self and the world (emancipating)	Affect is a core element, impactor and amplifier of all learning experience. Affect includes interest, emotions and motivations, and these are associated with distinct subjective sensory experiences.	The affective element of learning drives experience and conditioning. This affect-driven conditioning impacts on the propensity for various future behaviours, perceptions, conceptions, motivations, emotions, interest, learning and life satisfaction.
Learning is holistic change which embeds change and synthesises the whole person within their world (synthesising)	Synthesised holistic change surpasses pre-determined formulations of learning. It focuses on the uniqueness of each learner and their world. Aspects that assist the change are the focus of the learning process.	Synthesising all aspects of the learner and their world allows for more durable, deeper, and integrated learning. It increases the likely impact of learning as it moves beyond compliance, or any singular aspect of learning.

5.5 Chapter summary

This chapter reported on the findings from the phenomenographic iterative analysis of eighteen interviews undertaken for this study. The tertiary educators made a significant contribution to understanding the phenomenon of learning. Their lived experiences, as seen through their narratives, provide a solid base for further discussion of learning. This discussion commences in Chapter 6 (Linking tertiary educators' experiences of learning to theory and context), and continues in Chapter 7 (Applying study outcomes to learning in tertiary education).

6 Linking tertiary educators' experiences of learning to theory and context

Throughout the interviews and iterative phenomenographic data analysis it was clear that the interviewees dominantly talked about teaching activities, methods, and strategies when asked for their observations of learning as a professional educator. This is referred to as "teaching centred" in this chapter. In sharp contrast, when educators were asked for their observations of learning as a learner, the answers focused exclusively on learning itself, whilst teaching activities, methods and strategies were not mentioned. This is referred to as "learning centred" in this chapter. This is perhaps the most significant outcome of this research as it points to the contextual nature of the relationship tertiary educators have with learning itself. On a personal level, learning for the educators was passionately characterised by self-initiated and self-directed love of open inquiry. On a professional level learning was mostly characterised as an externally-impelled and directed activity that tertiary educators performed on learners through teaching activities. This is consistent with their common views that tertiary education is a system that is focused on units of competency and intended learning outcomes that lead to compliance learning.

Teaching targets direct objects of learning, the coverage of prescribed content (Marton & Booth, 1997). When the learner hears, sees or otherwise senses this content they receive data as inputs in a potential learning cycle. Learning, rather than being defined by these data inputs, is defined by indirect objects (Marton & Booth, 1997). These indirect objects are the meanings embedded after processing the data received. When an educator communicates their insights about relationships, methods, and best practice, no matter how worthwhile and powerful these may seem to the educator, the learner first receives these insights as data or what could be termed 'outsights'. The learning first arises through the indirect object, the learner's internal meaning-making or 'insights'.

The implications of this distinction between direct and indirect objects of learning are profound. Tertiary education that is centrally focused on these direct objects can be described as teaching-centred. Tertiary education that is centrally focused on these indirect objects can be described as learning-centred. The educator's attention in the former is centrally focused on the 'how' of education: content coverage; the activity and processes of the educator and/or learner; assessment, and on the roles and attributes of the educator or learner. Whilst each of these may have importance, and may indeed need attention at various times, the most crucial question is the 'why' of tertiary education. We learn in order to have agency in our lives. This

agency may be narrow, for example in answering examination questions, or wide, for example in succeeding with difficult and unexpected challenges (Su, 2011). Tertiary education tightly focused on increasing the agency of learners is learning-centred. Very distinct patterns similarly emerged in response to my inquiry into their observations of facilitating and inhibiting factors in learning, compared to response to my inquiry of what the interviewees would explain to new educators about learning. These patterns all point to two quite distinct views, that learning is a teaching-centred activity, focused on delivery of the known, versus learning being an activity centred on learning itself, focused on inquiry into the unknown. This distinction points to two very different learning phenomena, both of vital importance and value, yet unhelpfully conflated into a single concept as if they were a single, undifferentiated object. These first four interview questions break significant new ground and as such lack prior phenomenographic studies against which results can be compared.

The significance of this teaching-centred focus is twofold. First, what the educators know to be the most powerful impactors on learning and learning outcomes observed in their own learning were not being leveraged within their professional practice. Second, the focus on the goal (learning) has become subservient to the means (teaching) within the professional education context. Both of these characteristics point to significant missed opportunities for improvements in what we do in tertiary education. The reasons for this failure are proposed within this chapter.

The fifth and final interview question sought the tertiary educators' personal conceptual meanings of learning, grounded in these experiential reflections. These grounded concepts were grouped into two types: learning for compliance; and adaptive learning. Compliance and adaptive learning are characterised by different purposes, nature, interrelationships and outcomes. The findings from this final question are compared and contrasted with the results of other phenomenographic studies asking the equivalent question: 'What is learning?' This chapter examines the patterns from all five interview questions in their detailed form, question by question, and then suggests how the divergences can be connected and explained as a coherent whole.

As noted in section 4.4 (Integrating findings with theory and context) findings in this study extend beyond the categories described in the outcome spaces of individual interview question responses. Firstly, fundamental and revealing differences in interviewee descriptions of learning arose depending on whether the context was professional, personal, or definitional. These differences point to the heart of what a number of interviewees expressed

as frustrations with, and limitations in, the efficacy of tertiary education. Interviewees' frustrations centred on the inability to apply what they found most valuable in their own learning to the professional sphere. Secondly, factors viewed as central to success in learning varied substantially between interviewees as well as from the focus of relevant learning literature. These results for observation so learning from the professional educator and educator as learning are critically analysed (section 6.1—Observations of learning) and followed by a critical examination of facilitating and inhibiting factors in learning from the perspective of both the professional educator and the educator as learner (section 6.2—Facilitating and inhibiting factors). What mentors would tell new educators about learning is then explored (section 6.3—Mentor perspective). A comparison is then offered on the findings from this study against those from previous studies that asked the question: What is learning? (section 6.4—What is learning?). The findings, theory, and context are then integrated (section 6.5—Integrating findings, theory and context). The importance of tertiary educators developing a sophisticated understanding of learning is shown in the final topic in this chapter (section 6.6—Cultivating learning). This chapter is then concluded (section 6.7—Chapter summary) and connected to Chapter 7 (Applying study outcomes to learning in tertiary education).

6.1 Observations of learning

This section discusses the findings for Questions 1 and 2 in the study. It commences with Question 1 findings.

> *Interview question 1: From your experiences as a professional educator, what have you noticed about learning?*

Figure 6.1 (Analysis—Learning from the professional educator perspective) takes the categories shown in Figure 5.1 (Learning from the professional educator perspective) and extends them by highlighting which categories are dominantly associated with a teaching-centred versus a learning-centred perspective of learning.

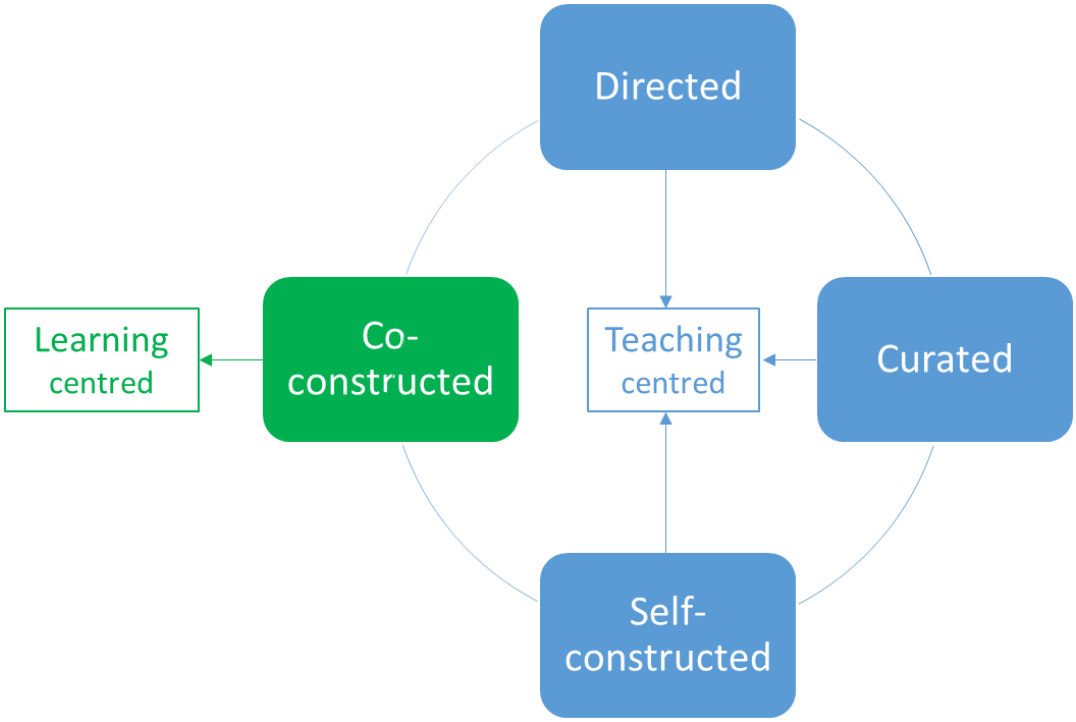

Figure 6.1: Analysis—Learning from the professional educator perspective

The views of learning reflected in the first three categories of directed, curated, and self-constructed, were dominantly oriented to a teaching-centred perspective. The educator: directs learners to make connections between what is known and what learners believe or do not believe; curates artifacts they consider appropriate; and provides time for self-construction of meaning which may include practice and rehearsal. The dominant focus in these perspectives was on what the teacher does (Biggs & Tang, 2011). In contrast, co-constructing learning was seen as occurring through dialogue and a relationship in which the educator and learner connect, with both forming new meanings. The active involvement of the educator in forming new personal meanings likely influences the shift to a learning-centred focus for this category (Weimer, 2003).

The focus on teaching in these first three categories may be seen as a consequence of the primary focus on covering the curricula (Lamb, Maire, & Doecke, 2017; Treadwell, 2017). This is in order to meet the narrowly targeted intended learning outcomes (HE) and units of competency (VET) (Murtonen, Gruber, & Lehtinen, 2017). Interviewee commentary in section 5.1.1 (Learning from the professional educator perspective) supported this view. When educator and learner success is measured in terms of learner ability to accurately repeat known and accepted facts, theories, and methods in standardised contexts, then strategic learning and strategic teaching tightly focused on these assessments is a likely outcome (Tijani

et al., 2016). This is especially likely when educators and learners feel they are under time and other pressures.

The benefit of this compliance focus, implicit in a teaching-centred approach to learning, is the ability of learners to repeat and apply accepted meanings, and repeat accepted best practice in standardised contexts. The key risks relate firstly to the durability and adaptability of this knowledge to non-standard or changing contexts, and secondly to the fostering of a passive and dependent ongoing stance towards learning, by learners, through teaching control (Weimer, 2003). Educational institutions commonly focus on the scholarship of teaching, or (at best) of teaching and learning or of learning and teaching (Boyer, 1990)—rather than the scholarship of learning. This endemic cultural focus on teaching—of implicitly treating the means (teaching) as equivalent to the ends (learning) (Barr & Tagg, 1995)—was confirmed in this study. When asked specifically for observations of learning in their professional roles, interviewees most often talked instead about their teaching practices, something that Interviewee 5 commented upon when discussing interviewing potential new educators:

> … my first approach is to ask them how they see the learning experience, and their role in the student learning experience. And so it's always very interesting because a lot of people want to tell me how they teach. So they're very good at telling me how they teach, and the sorts of teaching qualifications that they've had, and the sorts of teaching levels of expertise that they've developed over time. It's always really interesting when you first start with that, and the first thing you're getting is this is how I teach, not this is how the students learn.

In contrast, this equation of teaching with learning was absent when interviewees were asked for their observations of learning outside of their professional role. The shift from focus on content to a focus on learning or learning design, as proposed in the educational literature (Hairon & Chai, 2017; Magolda, 2014), was evidenced to not yet be widely adopted by these interviewees within their institutions.

This section now discusses the findings for Question 2.

> *Interview question 2: From your experiences as a learner, what have you noticed about learning?*

Figure 6.2 (Analysis—Learning from the educator as learner perspective) takes the categories shown in Figure 5.2 (Learning from the educator as learner perspective) and extends them by highlighting how the categories are connected to a teacher-centred versus a learning-centred perspective of learning.

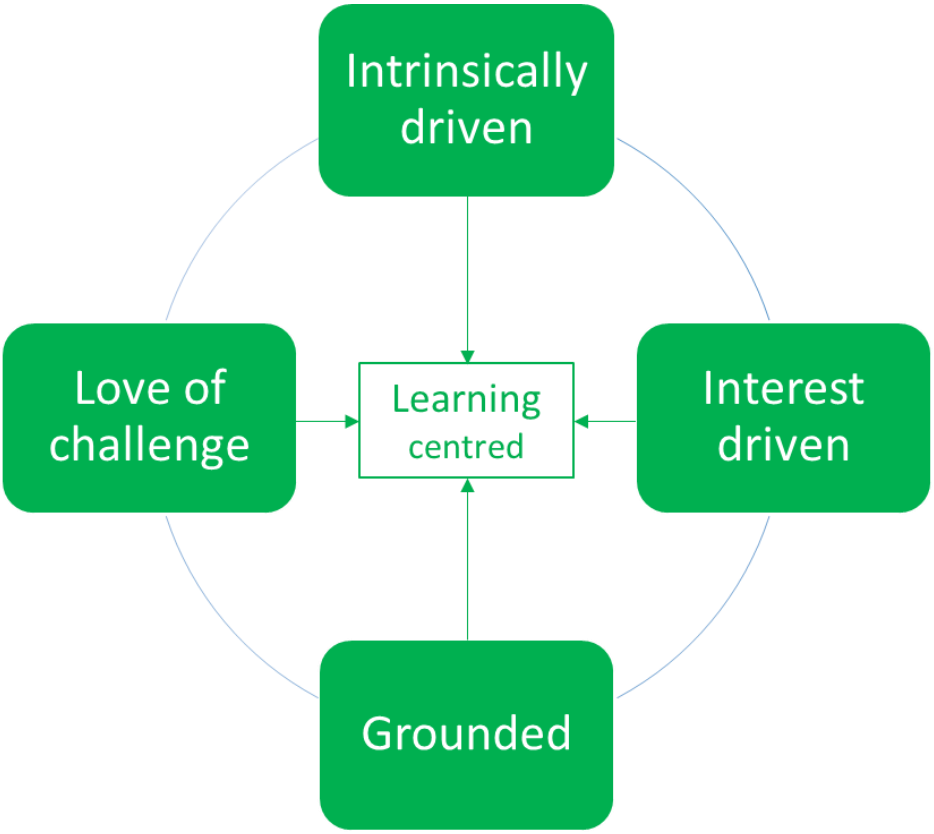

Figure 6.2: Analysis—Learning from the educator as learner perspective

It is clear that all four categories of description are learning-centred. The responses in all categories reflected a very strong emphasis on affect, which drives internal or intrinsic motivation, directs attention to personal interest, and is overtly expressed as 'love' of a challenge. The personal nature of being a learner invigorated the interviewees as they responded to this question. They talked very specifically about what assisted them to learn and emphasised the non-linear nature of their learning. That is, learning did not focus on a specific target or progress in a linear fashion. Instead, a general area for learning was identified and explored resulting in wider connections and networks of learning. The interviewees utilised a diversity of resources in order to bring about their learning including technology, which assisted in easy accessing of information. Engagement with challenging learning that stretched the interviewees in some way was spoken of in excited terms (see section 5.1.2—Learning from the educator as learner perspective).

The passion expressed by educators in their role as learners was not evident in their equivalent responses in their role as tertiary educators. As professional educators, the focus was on satisfying requirements in educational institutions (see interview question 1 in section 5.1.1—Learning from the professional educator perspective).

> Learning within an institution I think means satisfying requirements which means that learning is sometimes limited. (Interviewee 1)

> We have units to deliver to these students, within a twelve week program, and each week has their own weekly learning goals. And those 12 weeks we have to demonstrate that we have taught the learning outcomes to these students. (Interviewee 6)

The literature suggests this emphasis may potentially reduce the effectiveness of learning as well as its breadth (Devlin & Samarawickrema, 2010). There appeared to be frustration within the interviewees as they were unable to instigate the joy of learning they experienced in their personal learning within the educational institutions in which they worked. The primary reason for this was time pressures to cover curricula in order to meet the accreditation requirements for the institution. The agitation that accompanies time pressures in learning is counter to the extended focus needed for explorative and adaptive learning. That is, a learner feeling in charge of their own learning, feeling competent and confident, unpressured by time or outcomes and others' evaluations, is likely best placed to construct high quality, adaptive meanings. This view was supported by the responses of the educators as learners. Adkins (2017) argued that 'homogenous education' arises in tertiary institutions due to the emphasis on accreditation requirements overtaking inspired and inspiring learning. This convergent approach results in instrumental learning—learning that aims to achieve an extrinsic goal (Beutel, 2010). As Interviewee 1 noted:

> … it's about how do I best answer this question and learning becomes more about technique in terms of how to write an essay question … The best learning I think, often doesn't take place here.

Tijani et al. (2016) reinforces the causal connection between the learning environment and the surface versus deep approach to learning. In particular, the emphasis placed on coverage of curricula, on dependency on educators, and on assessments, detracted from a focus on deep learning:

> A deep approach is encouraged by giving students autonomy in learning and by experiencing good teaching, with good pace, ground, real-life illustrations, tutors being enthusiastic and offering lively and striking explanations to students. A surface approach however is reinforced by the type of summative assessment required in the course, a heavy workload and lecturers who foster dependency by 'spoon-feeding'. A surface approach relies on identifying those elements within a task that are likely to be assessed and then memorising the details (p. 272).

The interviewees highlighted that even if they wish to create deep learning, and believe that surface learning is not durable, and that teaching approaches need to be fluid and responsive

to learner needs and not transmission in nature, often they feel compelled to revert to the transmission approach because of regulatory and assessment expectations (for examples see quotes above, section 5.1.1—Learning from the professional educator perspective, section 5.1.2—Learning from the educator as learner perspective, and section 5.3—Learning from a mentor perspective).

6.2 Facilitating and inhibiting factors

This section discusses the findings for Question 3.

> *Interview question 3: From your experiences as both a professional educator and as a learner, what have you noticed facilitates learning and what inhibits learning?*

Figure 6.3 (Analysis—Facilitating and inhibiting factors in learning) takes the categories shown in Figure 5.5 (Facilitating and inhibiting factors in learning) and extends them by highlighting how the categories are connected to a teacher-centred versus a learning-centred perspective of learning.

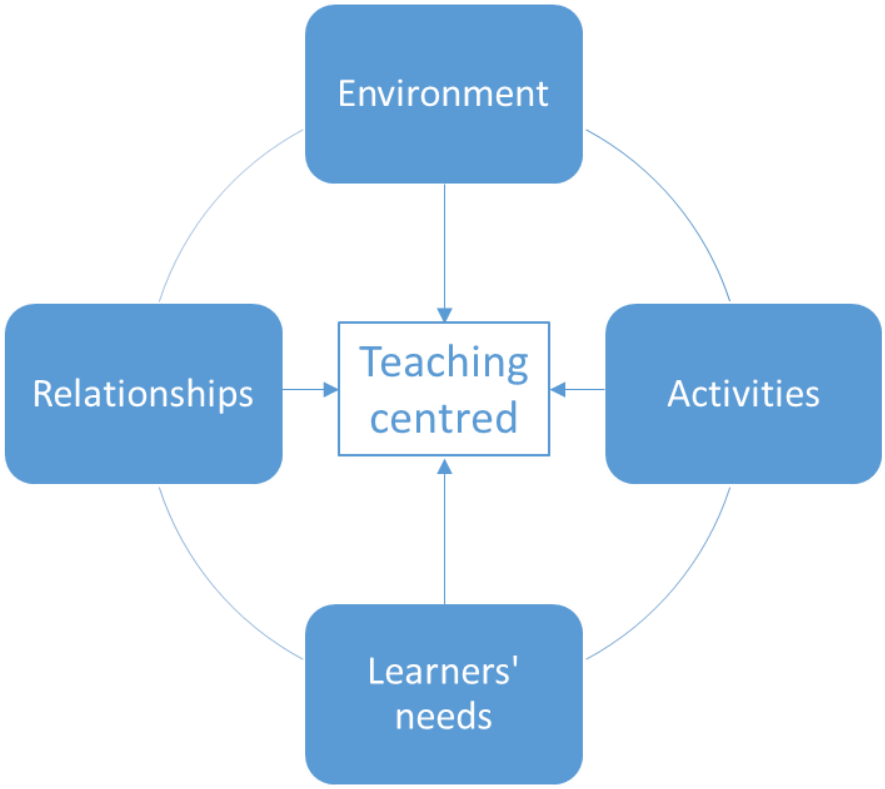

Figure 6.3: Analysis—Facilitating and inhibiting factors in learning

Interestingly, the interviewees' responses to this question detailed these facilitating and inhibiting factors as observed, virtually exclusively, in their role of professional educators, and

mostly related to typical learners. This was despite being overtly asked in this question to consider what they had observed both as a professional educator and as a learner. This attentional bias seems to imply that their default viewing lens on learning issues is through their role as profession educators, rather than through direct personal experience of their own learning. This might be consistent with their markedly different, and apparently disconnected, perspectives of learning in these two different roles, as reflected in their responses to the first two interview questions (see section 5.1.1—Learning from the professional educator perspective and section 5.1.2—Learning from the educator as learner perspective).

Looking through this professional role, the perspective taken in identifying facilitators and inhibitors of learning was teaching-centred rather than learning-centred. While the interviewees recognised that some of these factors existed beyond the learning environment, when detailing these observations they primarily focused on their specific teaching responses to these issues. For example, category 2 highlighted that teaching activities facilitated learning when they were tailored to the specific needs of the learners; and teaching activities inhibited learning when they were untailored.

The interviewees seemed to have positioned teaching as the cause of learning in their professional role, but not a relevant cause when discussing their own learning. Barr and Tagg (1995) argued that the centralisation of focus on teaching "mistakes a means for an end" (p. 13) by taking the means of teaching and making it the purpose of the institution. They expounded that this confusion of teaching as the purpose "… is like saying that General Motors' business is to operate assembly lines or that the purpose of medical care is to fill hospital beds" (p. 13).

It is interesting that the key factors educators had earlier cited as associated with their own learning were intrinsic and driven by interest and grounded in experiences that incorporated challenge. None of these factors inherently depend on teaching. Instead, they reflected Jarvis' (2004) idea that "… while the learner is an essential element in the learning process, the teacher is not" (p. 42). This focus on teaching might reflect their traditional professional identity of being content experts whose main job is to transfer knowledge to others (Magolda, 2014).

6.3 Mentor perspective

This section discusses the findings for Question 4.

> *Interview question 4: Based on your experiences, if you were to explain to a new educator what learning is, what would you say?*

Figure 6.4 (Analysis—Learning from the mentor perspective) takes the categories shown in Figure 5.6 (Learning from a mentor perspective) and extends them by highlighting how the categories are connected to a teacher-centred versus a learning-centred perspective of learning.

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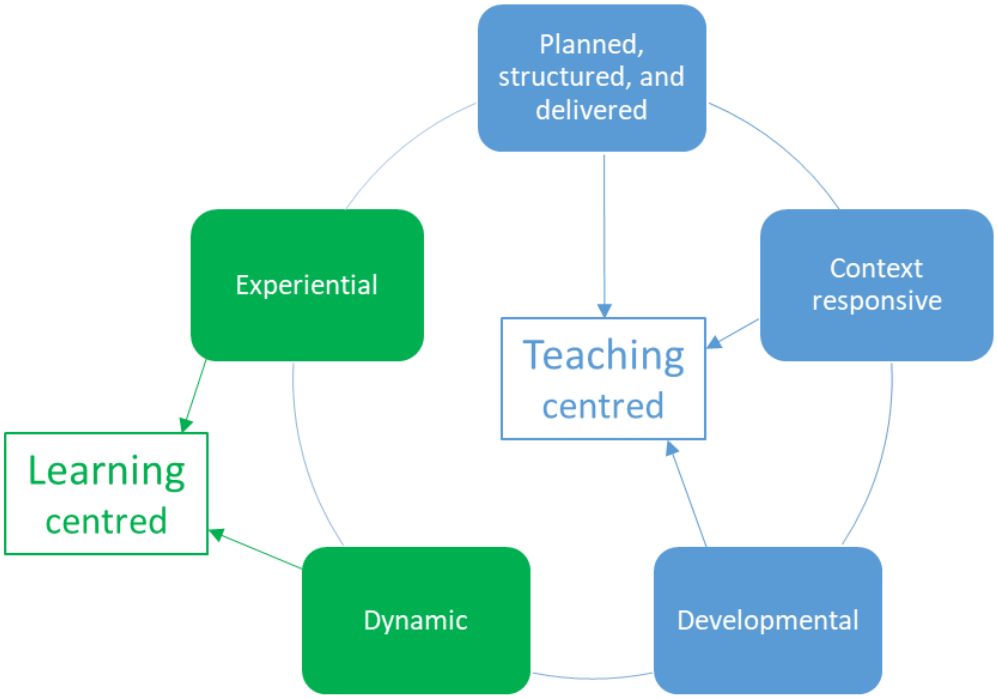

Figure 6.4: Analysis—Learning from the mentor perspective

The analysis of learning from a mentor perspective revealed three teaching-centred and two learning-centred categories. The first category focused on what teaching activities were required in order to plan, structure and deliver the required curriculum. The commentary provided in this category was very similar to category one in learning from the professional educator perspective. Educators perceived that time pressures to cover curricula in order to meet the accreditation requirements for the institution, and assessment requirements for students, took precedence over ways to create effective learning. The dilemma for educators is captured well by Interviewee 6:

> … we try and help [the learners] make sense of the mess that we're putting in their head because of this structure imposed upon us by the institution.

In both of the learning-centred categories there is a recognition that learners are actively engaged in constructing their learning. This reflects the literature that consistently has argued for active learners (Biggs, 2012; Dewey, 1933; Knowles, 1980; D. A. Kolb, 2015). Interviewees overtly expressed appreciation that learning takes place through experiential insight, not by being taught theory. Yet they felt compelled to teach in a way that they perceived would not promote durable learning as they needed to cover the curriculum.

An interesting contradiction emerged in the discussion of mentoring. When looking across all of the categories, the majority of comments were aimed at 'teaching' or 'instructing' the mentorees about the learning environment. This applied even when the interviewees were identifying the need for a stance focused on learning rather than teaching. This perhaps repeats the earlier finding that they had confused the means—teaching and instructing—with the aim of bringing awareness to the importance of learning in tertiary education. It appeared from this that there was perhaps greater awareness of the conceptual need for learning-centred approaches than was evident in embedded practice. Similar apparent divergence between espoused theory and theory-in-use regarding this stance of teaching was also evident in responses to earlier questions. Only three of the eighteen interviewees suggested that they would not tell mentorees about learning. Instead, they suggested asking the mentorees what they knew about learning so they could have a discussion based on their understanding, and develop insights in a collaborative manner. Perhaps the other fifteen interviewees responded to the question, "explain to a new educator what learning is", more literally or perhaps their default theory-in-use was to instruct rather than engage in collaborative learning.

This chapter now turns its attention to responses provided to the question: '*What is learning?*' Unlike the preceding four questions, which had no phenomenographic studies against which the results could be compared, a number of phenomenographic studies have posed this question (see section 3.5.1—Relevant phenomenographic studies). The results from this study and those from two well-known and often quoted previous phenomenographic studies on learning are compared.

6.4 What is learning?

This section discusses the findings from Question 5.

> *Interview question 5: We have discussed learning at some depth. So what do you actually mean by learning?*

Figure 6.5 (Analysis—Learning from the perspective of grounded concepts) takes the categories shown in Figure 5.7 (Learning from the perspective of grounded concepts) and extends them by highlighting which categories are dominantly associated with a compliance learning or an adaptive learning orientation.

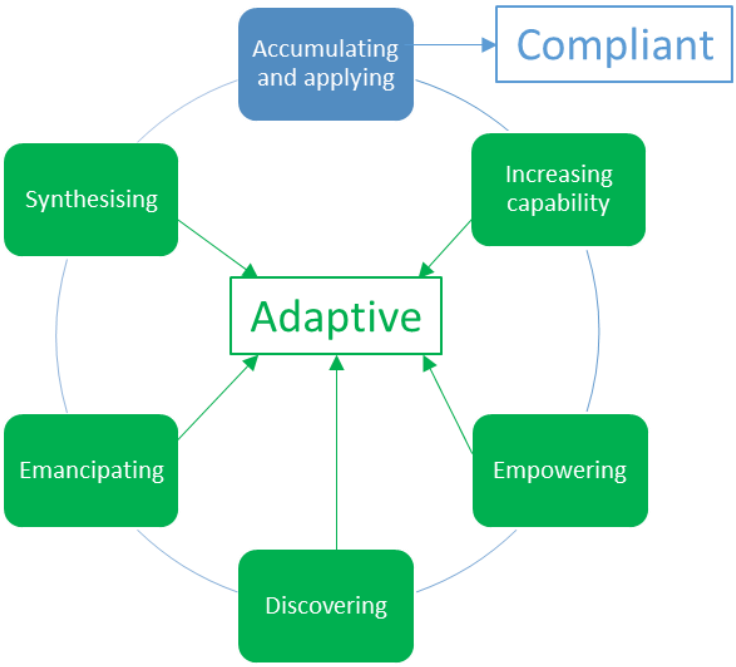

Figure 6.5: Analysis—Learning from the perspective of grounded concepts

This interview question is the only one that is directly comparable to that used in prior phenomenographic studies. Therefore, a comparison is now made between the findings of this study and those of two relevant prior studies. Two previous and significant phenomenographic studies were conducted by (Säljö, 1979a) and (Marton et al., 1993). Säljö (1979a) explored the question with a cross-sectional sample of 15-73 year old Swedes, and found five categories:

1. Increase of knowledge
2. Memorising
3. Acquisition of facts, procedures, etc., which can retained and/or utilised in practice
4. Abstraction of meaning
5. An interpretive process aimed at the understanding of reality

Subsequent studies by phenomenographic researchers replicated the approach used by Säljö and reinforced his categories, leading Marton et al. (1993) to comment that "Säljö's results can accordingly be considered well-established" (p. 278). This comment is supported by the analysis of studies utilising this question that was undertaken in section 3.5.1 (Relevant phenomenographic studies). Nonetheless, Marton et al. (1993) conducted their own longitudinal study with 29 social science students over a six year period. This was in an effort to "give a more precise characterization of the differing conceptions of learning and ... to identify relationships between the conceptions" (p. 279). They aligned their categories with Säljö's five categories (shown in *red italics*), with some adjustment/rewording, and added an extra category (additions/alterations shown in green):

1. Increasing one's knowledge
2. Memorising and reproducing
3. Acquisition of facts, procedures, etc., which can retained and/or utilised in practice/Applying
4. Abstraction of meaning/Understanding
5. An interpretive process aimed at the understanding of reality/Seeing something in a different way
6. Changing as a person

Table 6.1 (Comparison of categories with Säljö (1979a) and Marton et al. (1993)) compares the categories from these two studies with my study.

Table 6.1: Comparison of categories with Säljö (1979a) and Marton et al. (1993)

	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Säljö/ **Marton**	*Increasing one's knowledge*	*Memorising* and reproducing	*Acquisition of facts, procedures, etc., which can retained and/or utilised in practice/* Applying	*Abstraction of meaning/* Understanding	*An interpretive process aimed at the understanding of reality/* Seeing something in a different way	Changing as a person
Chinchen	Accumulating and applying	Increasing capability	Empowering	Discovering	Emancipating	Synthesising

There is a fundamental difference in the approach to categorisation within these prior phenomenographic studies to that used within this study. Phenomenographic studies, including those now being compared, have traditionally created a hierarchy of subsuming categories to explain a perceived evolution of complexity of meanings, from simple to complex, from the less developed to the more developed, and implicitly "authorised conception"—with those conceptions placed at the apex of the socially-accepted hierarchy which are seen as superior to the other conceptions (P. Ashworth & Lucas, 1998, p. 425). This

rigidity is not the stance taken within this study towards categorisation. Instead of seeing the categories as developmental stages in learning, in this study the categories are viewed in terms of context-specific needs. For example, at times the context and purpose demands a need to accumulate and apply known methods and understandings. In this context, category 1 is the best fit. Category 1 is neither universally better nor worse than any other category, nor is it subsuming of nor subsumed by any other category. Each of the categories independently stands alone. The categories have been ordered however in a rough approximation of increasing adaptability. Section 5.4 (Learning from the perspective of grounded concepts) describes these categories for this interview question in my study in detail.

The 'increasing one's knowledge' category in prior studies was characterised by Säljö (1979b) as a vague category emphasising the 'taken-for-granted' nature of learning. Due to its vagueness, there is no distinction between learning and the life of the learner (Marton et al., 1993). Marton et al. (1993) argued that this category has a strong quantitative aspect to it with the focus on collecting, consuming, and storing more knowledge or pieces of knowledge. More knowledge or pieces of knowledge are *what* is learned and *how* they are learned is by "the learner ... filling the head ... [with] pieces of knowledge" (p. 285). Knowledge in this context is information and is comparable to unistructural or multistructural descriptions in the SOLO taxonomy (Biggs & Collis, 1982).

In the memorising and reproducing category within these prior studies *what* is learned (something memorised) and *how* it is learned (through memorisation) are again vague (Marton et al., 1993). Memorising allows the learner to subsequently reproduce the 'something'. Memorising and reproducing are seen as valuable in the context of exams or other forms of performance within the educational setting.

Säljö's third category, 'Acquisition of facts, procedures, etc., which can retained and/or utilised in practice', which Marton renamed 'Applying', moves away from the emphasis on knowledge in the preceding two categories. In this category the '*what'* relates to the ability to apply knowledge or procedures that have been memorised. Marton et al. (1993) suggested that this ability evolves through the retrieval and use of previously stored information. This process represents the '*how'* of this category. As opposed to the preceding category, where the context of memorising and reproducing is within educational settings, this category moves beyond these settings into the learner's life. Both Säljö (1979b) and Marton et al. (1993) identified a lack of clarity around what applying or using means in the context of the learner's life.

It was interesting to note that in my research, unlike prior phenomenographic studies, none of the interviewees separated accumulation from application of knowledge. All interviewees stressed that learning was more than just accumulating or remembering and required the application of new skills and knowledge in order to gain acceptance. This aligned with a movement in educational stance in the literature from knowledge hoarding to knowledge sharing (Evans-Greenwood et al., 2015), where acquisition/hoarding has been downplayed in favour of application.

The first three categories in the Säljö (1979b) and Marton et al. (1993) studies are fully contained within the first category in my study. The more expanded nature of this first category in my study may reflect shared tertiary educator perspectives of learning, and/or it may be a consequence of the grounded nature of the interview questions causing a shared expansion of awareness of core learning attributes. This first category in my study, like the first three in the prior studies, aligns with a more quantitative view of learning, whereas subsequent categories in both prior studies and in my study focused on more qualitative differences. There was, however, indicators of Marton et al. (1993) and Säljö (1979b) throughout the other categories in my study but there was no direct alignment between the categories in all three studies. Beyond this comparison of quantitative/qualitative focus, there is little to be gain by comparing these categories between my studies and prior studies due to the fundamental differences in approach to categorisation discussed earlier.

This section highlighted that the interviewees had a very different view of learning from the general population in the study by Säljö (1979b) or the students in the study by Marton et al. (1993). Although the question that was asked in the three studies was basically the same, the insights gained from the interviewees in my study showed a higher level of critical engagement with both the process and purpose of learning. This difference may be population-specific as my study drew from the learning profession, and/or the increased depth may have resulted from the grounded nature of the interview questions. Although caught in the tension of the accreditation and regulatory requirements of tertiary institutions, the interviewees saw beyond those restrictions when responding to this final question.

6.5 Integrating findings, theory and context

As indicated in section 4.4 (Integrating findings with theory and context) and in the introduction to this chapter (Chapter 6—Linking tertiary educators' experiences of learning to theory and context), the findings detailed so far in this study can be seen as the starting point and support for a deeper critical analysis. The analysis of findings presented so far related to

the questions asked in the semi-structured interviews. These were shown in the outcome space format common to phenomenographic research. The analysis of findings in this section extends beyond this strict phenomenographic format and offers additional insights aimed at extending the understanding of learning from the tertiary educators' perspectives.

This section analyses major differences in the nature of learning in different contexts, as described by interviewees. These differences arose depending on whether the interviewees' context for description was professional (Figure 6.1) or personal (Figure 6.2):

- *Professional Context*: the nature of learning reported by interviewees in a professional context was dominantly teaching-centred (see interview questions 1, 3 and 4 in sections 5.1.1—Learning from the professional educator perspective, 5.2.3—Facilitating and inhibiting factors in learning,[13] and 5.3—Learning from a mentor perspective, respectively).

- *Personal Context*: the nature of learning reported by interviewees in a personal context was dominantly learning-centred (see interview question 2 in section 5.1.2—Learning from the educator as learner perspective).

The section analyses possible causes, implications and potential responses to these variations. This analysis is important for two reasons. Firstly, the interviewees' dominant view of learning was seen as a teaching-centred activity in a professional context. This is contrary to best practice identified in the literature, contrary to the intention of regulations in tertiary education, and contrary to the educators' personal views of what contributes most powerfully to their own learning. Secondly, both the literature and educators interviewed point to ways in which this discrepancy can be reduced in order to improve learning in tertiary education.

This critical review begins with an analysis of key drivers of the differences in learning approaches, and key concepts which may address these differences. These key drivers and concepts are exposed through a review of relevant educators' responses, relevant learning literature, and relevant extended literature. This approach facilitates leveraging of key drivers and concepts within tertiary education with the aim of contributing to the ongoing task of improving tertiary education. Based on this evidence and analysis, this section seeks and proposes integrated approaches that provide cogent ways forward to address the need to shift educational practices further towards a learning-centred, rather than teaching-centred, stance.

[13] Note: Despite the context of the question on facilitating and inhibiting factors (interview question 3) being open, interviewees responded overwhelmingly from the perspective of their professional role

6.5.1 Learning is a human change process

Critical analysis in this section begins with an examination of the core nature of learning. This analysis, based on a critical review of relevant educator feedback, educational literature, and wider literature, reveals the widespread implicit acceptance that learning is, at its core, a human change process. This notion is implicit in some of the definitions of learning within the literature and in the responses of interviewees within this study. The notion of change in learning is also explicated in some cases. Illeris (2007, p. 3) referred to learning as "any process that in living organisms leads to permanent capacity change and which is not solely due to biological maturation or ageing" while Ormrod (2016) argued learning was "a long-term change in mental representations and associations as a result of experience" (p. 20). While the Australian Qualifications Framework Council (2013b) did not specifically use the word 'change', it implied it in its definition that "learning is a process by which a person assimilates information, ideas, actions and values and thus acquires knowledge, skills and/or the application of the knowledge and skills" (p. 97). Jarvis (2009) talked of the change aspect in the present tense by emphasising that learning led to "a continually changing person" (p. 25). Alexander et al. (2009) identified "learning is change" as a principle on which they developed their definition and emphasised "a relatively enduring change" as a result of learning. Interviewee 6 was more specific and stated that counselling and learning are "both change enterprises". Interviewee 2 was direct about learning and change:

> … if you took the psychological point of view, learning is a change, a meaningful persistent change in behaviour, attitudes. I don't think that that's quite broad enough to encompass the whole learning throughout the lifespan.

This interviewee went further when defining learning:

> Learning is a continual process … an all-encompassing process of development and changing mindsets and opening up new ideas and using your past experience to inform or digest new information and make schemata. (Interviewee 2)

Other interviewees identified the change that results from learning:

> Learning is the ability to absorb, gain new skills and knowledge that you didn't have before, and put that into practice and become adept and competent. (Interviewee 10)

> Being open to new insights and discovering things about yourself and the world you're in that you might not have expected. (Interviewee 8)

This interviewee adoption of an "I am a change agent" mindframe, as described by Hattie and Zierer (2018, p. 39), aligns with the notion that a central role for tertiary educators is to bring

about change through learning. The changes may be evidenced in both quantitative and qualitative ways (Biggs, 2014; Biggs & Tang, 2011; Marton et al., 1993; Säljö, 1981). As noted from the interviewee excerpts in this section, change can be in the areas of knowledge, skills, behaviour, attitudes, mindsets, or ideas. Learning, therefore, involves more than remembering other people's information. It is an active process involving focus, affective engagement, and meaning making which is then synthesised. Synthesis involves the whole learner which involves, as Jarvis (2015) identified, the "three domains of the mental, the emotional and the behavioural" (p. 90). The changes in these areas then create changes in practice through the application of the learning. The literature which preceded the interviewees' comments in this section added capacity, mental representations, associations, and values. Ultimately, these lead to a change in the person. Ormrod (2016) argued that "the ability to acquire a large body of knowledge and a wide variety of behaviors allows the human race a greater degree of flexibility and adaptability than is true for any other species on the planet" (p. 18). This reflects the three areas in ontological learning advocated by Dall'Alba and Barnacle (2007) and (Barnett, 2012, 2017). These are knowing or thinking, acting, and being (Su, 2011). This focus moves beyond knowledge, skills and teaching. The inclusion of 'being' focuses on developing dispositions such as "carefulness, thoughtfulness, humility, criticality, receptiveness, resilience, courage and stillness" (Barnett, 2012, p. 75). UNESCO and MGIEP (2019) refer to the different forms of human learning as the four pillars: learning to know; learning to do; learning to be; and learning to live together. Each pillar is an important focus area for 21st century learning. (See section 2.3.2 The purposes of tertiary education—*Returning to the purposes of tertiary education* for further information on the four pillars.) These are human change processes fundamentally built on learning to learn, learning competence, learning to be fully human, and learning to interconnect respectively.

In order to understand the human side of learning it is helpful to appreciate the features of human change processes. In learning and teaching what has been given privileged attention is the content of intended change in learners rather than the change process itself (Su, 2011). This bias towards content over process is evidenced, for example, by the overwhelming demand for tertiary educators to have cognate qualifications in their content specialty area, without any equivalent requirement for educators to have qualifications in human learning and human change processes (see section 2.2.3.4—The 21st century—*Regulatory expectations for tertiary educators*). This point is reinforced by Norton, Sonnemann, and Cherastidtham (2013) who argued that in HE "academics are typically appointed for their subject expertise, with much less attention given to their teaching skills. Most academics have no training in

teaching or have taken only short courses" (p. 1). These statements are reinforced by a comprehensive study of Australian academics in the HE sector by Bexley et al. (2011, p. 26). In their sample of 4,914 academics:

- 35.4% had undertaken a university teaching course within the last two years
- 30.1% had undertaken a university teaching course more than two years ago
- 37.3% had not undertaken any training.

However, on closer investigation of those who had completed a university teaching course in this sample, the majority had completed only short courses:

- 17.9% had undertaken a general qualification in teaching (Dip Ed, etc)
- 51.5% had undertaken a short course covering a number of aspects of teaching
- 58.2% had undertaken a short course on a single facet of teaching (assessment, etc)
- 23.7% had undertaken a course specifically in university teaching (Grad Cert in Higher Ed, etc).

The majority of the academics in this sample found their courses useful: general qualification (70.6%); short course on a number of aspects (70.6%); short course on a single facet (63.1%); and course in university teaching (59.6%). The fact that the lowest percentage of usefulness was for a course in university teaching raises the question about how these courses could be better aligned to usefulness and application in learning and teaching.

This focus on content, rather than learning processes, aligns with and may encourage the view that learning is no more than content transmission through direct instruction from experts to passive and non-critical learners (Pratt & Collins, 2000). Zull (2006) argued that this goal "can lead to the assumption that learning is better if courses are crammed with content" (p. 5). Whilst educational theory has moved beyond belief in the efficacy of teacher-centred learning, which focuses on content transmission, the absence of any requirement for educator expertise in human learning processes means that there is no guarantee of any associated movement in their educational practices. This leaves learners in the potentially vulnerable space of the tertiary educator relying on historically established practices rather than practices which are endorsed through research. Weinstein et al. (2019), in their efforts to connect this lack of research to the impact on learning, make the following points:

> Unfortunately, educational practice does not, for the most part, rely on research findings. Instead, we tend to rely on our intuitions about how to teach and learn—with detrimental consequences (p. 3).

> Alarmingly, our feelings about how we learn can often be more compelling than reality (p. 4).

The issue of using historically established practices is also addressed by Weinstein et al. (2019):

> If evidence supports the effectiveness of a strategy, then we should by all means adopt it, but continue to be flexible as the science evolves (p. 4).

This raises the issue of tertiary educators having ongoing engagement with the research literature on learning. Tertiary Education Quality and Standards Agency (2014) identifies the need for currency and connects it to contemporary aspects of learning and teaching. In the *Guidance note on teaching and learning*, for example, it is stated that educators must be "informed by current ideas for teaching the subject/discipline, such as improved pedagogies, learning processes, curricula, academic policies and learning materials" (p. 4).

It is currently seen as appropriate that tertiary educators have cognate qualifications so as to avoid misleading students in technical or content matters. This is an important aspect of expertise for tertiary educators, but not the only one. It seems as important that educators do not create 'detrimental consequences' through misinformed and misguided views about the nature of human learning. Norton, Sonnemann, and Cherastidtham (2013) argued that while HE institutions have standards for researchers, these do not apply to teachers. They further argued that there is no entry requirements, clearly-defined practice standards, ongoing professional development obligations, or procedures for expelling people who breach the rules. Although some standards have now been set in place by TEQSA and the Australian University Teaching Criteria and Standards Framework, since this report 2013 by Norton et al., there remains no particular enforceable qualification demand in understanding the processes of learning or human change amongst these requirements. Instead, trial and error (Hativa, 1997) and learning in practice seem to be the key ways educators are expected to understand these processes (Norton, Sonnemann, & Cherastidtham, 2013). The same applies to the required VET qualification—TAE40110 Certificate IV in Training and Assessment—as discussed in section 2.2.3.4 (The 21st century—*Regulatory expectations for tertiary educators*).

The argument proposed in this study is that without an understanding of human learning processes, educators are not well placed to implement best practice, respond to the affective realm of learning, or respond effectively to heterogeneous learners. This focus on learning or being learning-centred has been discussed throughout this thesis (see section 2.2.3.5—The 21st century—*Professional identity and role*). Hattie and Zierer (2018) suggest a mindframe "I focus on learning and its language" which supports this shift in focus. They explain that learners played a passive role in behavioural approaches and no attention was given to the cognitive

processes involved in learning. Cognitivism focused directly on the cognitive processes involved in learning. Rather than being passive, the learner was actively engaged in the learning process and their prior knowledge was central to the learning. Constructivism reinforced the importance of the learner being active in the learning process. A significant difference between these three learning theories relates to mistakes: behaviourism aims to avoid mistakes, cognitivism and constructivism recognise that "learning means making mistakes, and mistakes make learning visible" (Hattie & Zierer, 2018). In order to promote the value of mistakes, another mindframe is of use: "I build relationships and trust so that learning can occur in a place where it is safe to make mistakes and learn from others" (Hattie & Zierer, 2018).

Connected to the issue of relationships, safety, and trust is the broader aspect of the affective realm of learning. The OECD identified attunement to the affective realm as a central requirement for learning professionals:

> Learning principle three:
> The learning professionals within the learning environment are highly attuned to the learners' motivations and the key role of emotions in achievement (Organisation for Economic Co-Operation and Development, 2017, p. 23).

If tertiary educators are not familiar with some of the barriers to learning that may exist in heterogeneous learners, they may engage in blaming the student (Biggs & Tang, 2011). For example, significant and long-term damage to students' beliefs in self-efficacy in learning may be inflicted via misguided and uninformed educator assumptions such as misinterpreting a learner's behaviour, learning approach, or learning difficulty, as an indicator of them being unmotivated or 'lazy':

> When we call someone lazy, we condemn a human being … laziness is nothing more than a myth (Levine, 2004, p. 9).

Perhaps the most important mindframe that Hattie and Zierer (2018) offer is: "I am an evaluator of my impact on learning" (p. 1). Rather than blaming the learners when they make mistakes or do not learn what we expect them to, we can see these as indicators of our impact or lack thereof. Having multiple interventions to meet the needs of learners is critical. Quality implementation of these interventions also matters. In order for interventions to work effectively, we need to understand their impact on the learning process itself (Hattie & Zierer, 2018).

A further challenge for tertiary education is the potential misunderstanding of how learning actually occurs (Dekker, Lee, Howard-Jones, & Jolles, 2012; Howard-Jones, 2014; Weinstein et al., 2019). Take, for example, the issue of learning styles. There are two parts to this concept. The first is that different learners will learn information in different ways. The second is that learning is more efficacious if the learner and the mode of instruction match (Pashler, McDaniel, Rohrer, & Bjork, 2008). In their extensive review of learning styles, Pashler et al. (2008) found no evidence for the second part of the learning styles concept. They did find that people will express a preference for a particular approach if asked. But this preference does not mean that learning design that matches specific preferences enhances the learning process or outcome. Yet it is commonplace in the literature for tertiary education to continue this myth through "a thriving industry devoted to publishing learning style tests and guidebooks…and many professional development workshops" (Pashler et al., 2008). Misunderstandings, however, extend beyond learning styles. Weinstein et al. (2019) reported on ten misunderstandings or neuromyths based on 12 empirical papers, involving 14,737 participants who were teachers, in 15 countries. These misunderstandings and the percentage of participants who believe them is shown in Table 6.2 (Pervasive misunderstandings about learning).

Table 6.2 Pervasive misunderstandings about learning

Rank	Misunderstanding	% who believe it
1	Individuals learn better when they receive information in their preferred learning style (e.g., auditory, visual, kinesthetic)	93%
2	Environments that are rich in stimuli improve the brains of pre-school children	89%
3	Short bouts of coordination exercises can improve integration of left and right hemisphere brain function	76%
4	Exercises that rehearse coordination of motor-perception skills can improve literacy skills	74%
5	Differences in hemispheric dominance (left brain, right brain) can help explain individual differences among learners	74%
6	It has been scientifically proven that fatty acid supplements (omega-3 and omega-6) have a positive effect on academic achievement	61%
7	Emotional brain processes interrupt those brain processes involved with reasoning	60%
8	We only use 10% of our brain	49%
9	Memory is stored in the brain much like as in a computer: each memory goes into a tiny piece of the brain	48%
10	Children are less attentive after consuming sugary drinks and/or snacks	47%

There has also been an assumption that the application of techniques of teaching automatically leads to intended learning (Mathieson, 2015). This is now contested in the literature due to a growing awareness that we cannot simply transfer knowledge to another person; the learner needs to be actively engaged in a process of organising information into their own knowledge through meaning making and schema development (Biggs, 2012; Hattie & Yates, 2014; Kember, 2008; D. A. Kolb, 2015). In both forms of teaching which Kember and Kwan (2000) identified, that is teacher-centred and student-centred, the focus is not on learning. Teacher-centred focuses on what the teacher does and who the teacher is; student-centred focuses on what the teacher does and who the student is. This is in contrast to learning-centred which focuses on the development of agency through the learning process. This development of agency involves a reorganisation and integration of prior knowledge with understanding based on new information. Prior knowledge or what the learner already knows affects learning in both positive and negative ways. On the positive side, when learners already possess a large body of existing knowledge, they can more readily engage in meaningful learning and elaboration; those who lack relevant knowledge engage in less effective strategies such as rehearsal and rote learning. Ormrod (2016, p. 220) commented that "the rich (in knowledge) get richer, and the poor stay relatively poor". On the negative side, prior misunderstandings or misconceptions may result in the learner dismissing new information, distorting new information so it fits with preconceived knowledge leading to learning that does not match what the learner saw, heard, or read. The conclusion that Ormrod (2016) drew was that in some instances "having misinformation is more detrimental to learning than having no information about a topic" (p. 222). This reorganisation and integration also involves a complex interplay between cognitive and affective processes (Immordino-Yang & Damasio, 2011; Immordino-Yang & Gotlieb, 2017; Ormrod, 2016). Just as narrow knowledge base and misunderstandings can occur for learners, they can occur for tertiary educators. The misunderstandings identified in relation to educators' understandings noted in Table 6.2 support the idea that tertiary educators need a sophisticated and contemporary understanding of learning in order to enhance their efforts with learners (Parsell & Chinchen, 2019).

6.5.1.1 Learning in tertiary education is focused on intended learning

The prime focus of educators in their professional role, understandably in the current context and regulatory requirements, is on coverage of intended learning, as specified in intended learning outcomes (HE) and competencies (VET). This was clear from the responses of educators in this study when asked to discuss learning in their professional roles. Successful

completion of intended learning is considered the key measure used to grade student results, and assess the academic success of students, educators, and even educational institutions. Successful completion of intended learning may be seen as the foundation on which organisations primarily assess technical readiness of graduates to perform a variety of jobs.

Intentional learning is affected by both systems described by Kahneman (2013). System 1 is automatic, quick, requires little or no effort, and there is no sense of voluntary control. System 2 is consciously controlled and effortful, slow, and connected to the subjective experience of agency, choice, and concentration[14]. For example, for most people, if asked "What is 3 x 7?" System 1 will provide an immediate, automatic, non-effortful answer of 21. However, if asked "What is 21 x 73?", System 2 is needed to calculate the answer and does this effortfully, slowly, and consciously. Ormrod (2016) refers to these different approaches as "automatic and controlled processes" (p. 389) and is clear that both are required for intentional learning.

The interviewees offered insights into the process of intentional learning. Their commentary highlighted five significant areas if successful learning is to occur. These are focus, engagement, knowledge (in the broadest sense), inquiry, and synthesis.

1. *Focus—the 'what' of learning*

The issue of focus is an important one in tertiary education. Focus here is both clarity about the intentional learning as well as attentional focus. Interviewee 1 captures this focus issue:

> Learning is structured ... I think that's one of the most important things about students being able to learn in a classroom … as opposed to going to a library and just picking up books.

Tertiary educators who are clear about their focus can create clarity for the learners. Such focus can be through identification of the topic under investigation and associated intended learning outcomes or competencies. The purpose of the investigation needs to be clear for learners. A clear purpose facilitates other stages in learning. For example:

> I think one of the biggest aspects of learning in a general sense, particularly for people who are highly motivated and for people who are not so motivated, is giving them a reason a reason why we're doing such and such today. So I mean I think people learn better when they see the reason for significance … Where people don't see a purpose in learning I think is huge … If they don't see a purpose in learning. If they don't see that this will give me a job. If they get to a stage with their learning where they … don't see that it's going to get them further ahead in terms of their survival. Then I think it's a pretty big thing. I recognise that stuff about learning for

[14] See section 3.3.2.4 (The main learning theories—*Cognitivism*) for further discussion of these systems.

> learning's sake and that there is a joy in that. Some people can bury themselves in that but most of them see something else as well. (Interviewee 1)

> I think if … there's a purpose and they can see an authentic outcome to the learning, then I think learning will take place so much better. (Interviewee 18)

Focus extends to the placement of attention on the learning process. Attention does not automatically arise; it needs to be activated in the learning process (Hattie & Yates, 2014). Otherwise, the distractions that learners arrive with will overtake their capacity to learn. The tertiary educators were aware that the focus of the learning is competing against different demands and systems the individual learner faces. In other words, learners are not learning in a vacuum—they have lives beyond the learning environment. At times, these other aspects of the learner's life impact on their capacity to learn and may overwhelm the capacity of the learner to focus on the intended learning.

> So it's creating a learning environment with the students that sort of supports their own individual circumstances where they sense trust, curiosity, that's one of my key things. (Interviewee 3)

> So that systemic aspect I don't think that I've seen is sufficiently addressed. It may be up there but I haven't come across it. Because I'm very much about how do these things operate within a system or systems. Because there's never one. (Interviewee 8)

As seen in section 5.2.2 (Inhibiting factors in learning), a number of demands in these systems can create difficulties for learners and redirect their attention from learning. These include general life issues (Interviewee 6) or as Interviewee 7 specified, being part of a community that does not value learning. Therefore, focusing on the purpose of learning with clarity can become a motivating force for the individual learner. This can support learners to stay focused when other demands arise.

The literature builds on the tertiary educator's comments about the importance of focus from several points of view. Levine (2002) described attention as "the administrative bureau of the brain, the headquarters for mental regulators that patrol and control learning and behaviour" (p. 31). As learners generally have limited capacity to focus on the stimuli around them, it is important to focus that attention on the intentional learning (Ormrod, 2016). This is not a once off focus at the beginning of a learning period. Attention tends to fade after about ten minutes of intense mental activity (Hattie & Yates, 2014). If the cognitive load of learning begins to overwhelm the learner, they lose focus and attention is directed to activities such as mind

wandering. Therefore, focus and attention need to be activated and reactivated throughout the learning process.

2. *Engagement—the 'why' of learning*

A number of tertiary educators interviewed highlighted the vital importance of learners being engaged. For example:

> I think that one of the keys for learning, for myself firstly, is engagement. Being emotionally connected to the topic in question, whatever it might be, but also to the group that you might be with, or in my case as an educator, with the group that is in the process of learning. (Interviewee 15)
>
> To me learning is engaging students. (Interviewee 13)
>
> But really at the core of it, I find, is interest. If you're not interested in something, if you're not engaged with something and if you don't see the meaning of something, I find that that's probably the biggest hindrance. But what I find facilitates learning is the complete opposite of that, when you're interested in it, when you can see the effects. (Interviewee 3)
>
> Students want to know what's in it for me. (Interviewee 16)

Intended learning is best achieved when clarification of the focus of the intended learning is followed by engagement of learners. Immordino-Yang and Damasio (2011), as previously noted (section 3.3.2—The main learning theories), argued that educators need to both understand and leverage emotion and cognition as learning is profoundly affected by and subsumed "within the processes of emotion" (p. 125). The educators made a number of comments about the impact of affect which influences the desire to participate in the learning process, including:

> People have got to be in the headspace. To be open to learning, I mean we know the research on learning effectiveness around people's mental, emotional states. (Interviewee 4)
>
> So the other way I think facilitates [learning] is … a passion for learning. (Interviewee 7)
>
> Balancing reluctance against those who are just in there with their boots and all. And learning to balance that off. Because sometimes the boots and all is also a nervous reaction. Both of them can be nervous reactions. One overcompensates and the other one undercompensates. So it's trying to bring out the best in both and not at the expense of one over the other. (Interviewee 8)
>
> Being in a constant fight or flight response leads to being scatty or they aren't settled enough to absorb or take on. So the health and well-being of those people definitely inhibits their ability to remember or to settle down and just connect and start thinking. When students are in a constant flight

> and fight response mechanism, it's very hard for anyone, and you can be quite scatty, so it makes it more difficult. (Interviewee 16)

An important aspect of affect relates to prior experiences in learning which affect both learners and educators. For learners, it may be due to them having:

> had a bad experience with learning, if they've been humiliated, if they don't get it, how it's been presented straight away, and they feel silly for not getting it, especially if their peers are understanding it straight away. If learning is not encouraged at home, if they're not from that environment where it's regarded highly. (Interviewee 11)

The impact of this prior experience is psychological and physical. Hormones rush into the learner's system and create an agitated state, such as fight or flight. In this state of high arousal, attention to the intended learning tasks decreases, the working memory is overloaded with concerning thoughts, and effective cognitive processing is compromised (Ormrod, 2016). Interviewee 11 captures the impact of prior learning experiences and the impact of the systems in which the learner sits. The impact of affect applies equally to educators:

> fear of incompetence, a fear of ego transmission that's getting in the way, where people are really unsure of how to teach in this new world, having had deep experiences in teaching people in a face-to-face and not an online environment, they're unsure of that, they're fearful of trying new things, and for failing, and appearing to be incompetent in the eyes of the learner. (Interviewee 5)

Dumont, Istance, and Benavides (2010) emphasise the importance of affect in learning:

> Emotions are the primary gatekeeper to learning. Emotion and cognition operate seamlessly in the brain to guide learning. Positive emotion encourage, for instance, long-term recall while negative emotions can disrupt the learning process in the brain—at times leaving the student with little or no recall after the learning event (p. 4).

Dumont et al. (2010) connected emotions to motivation, a complex and often misunderstood concept in education literature. Motivation can be seen as a movement towards meeting a need or goal (Ormrod, 2016). While tertiary educators may expect and hope that learners would be motivated towards learning, there are other issues they may be facing that have a higher priority. The tertiary educators in this study were cognisant of this issue as they commented:

> 'Oh great, I'm in a room, here's a chance to learn'. You know, some are in the room and it's like, you know, 'I wish my boyfriend hadn't bashed me this morning', or 'I wish he hadn't left me last week' or 'I wish this hadn't happened', 'I wish my mum wasn't dying of cancer', or you know, so there's a hundred different things happening in the room. Which potentially are going to stop any level of engagement, regardless of how

> good an educator you are … So again you've gotta look at, you know, how are you setting up your learning environment, understand: Who are these people that are coming to this particular learning situation? What are the extraneous pressures and impacts that might be on their headspace to sort of being ready to learn? (Interviewee 4)

> … this was very early on and then when the Lindt Cafe siege happened … I had a young girl in class who was obviously Islamic, she had the gear on, but … she had recently reverted to Islam and that happened and she came back from the morning tea break saying 'Oh they're saying you know this thing has happened and it's all Islam' and she was feeling horrendously scared ... she was a young person, struggling with new identity of being Islamic and then this was happening. So a group she was still learning to associate with was now coming under huge fire because of this particular event. We needed to manage that in the room. That's not part of the script you get to teach. (Interviewee 8)

In these circumstances, it is easy to make judgements of the student based on their motivation being towards something other than learning. Educators can often blame the student by focusing on "what the student is … good student … poor student" as Biggs and Tang (2011, p. 17) argued. Having researched and taught on the extensive literature on motivation, and having watched learners over the last thirty plus years, this is a superficial assessment of a complex set of factors. Perhaps we are always motivated—just towards some things and away from others or motivated at different strengths depending on other needs in our life at that moment. As Interviewee 4 stressed, it is helpful to know the learners with whom we work so we can understand the pressures on them that may motivate them away from learning. These individual differences can generally be accommodated before, as Interviewee 2 identified:

> … [learners] tend to kind of drop out. Not suddenly but I think that they tend to subside, their performance decreases, their interest in the subject—they can really kind of drag behind the others and they'll start to not be motivated to come and do the work, not do homework, just really lose that spark that I think is so important when you, when you are learning. (Interviewee 2)

The tertiary educators identified the importance of developing a good relationship with learners, attending to their needs, and creating a learning environment and activities which support their learning (see section 5.2.1—Facilitating factors in learning, section 5.2.2—Inhibiting factors in learning, and section 5.2.3—Facilitating and inhibiting factors in learning, for more commentary from the interviewees). All of these factors, when attended to in a positive manner, can assist learners to learn.

3. *Knowledge—the models—the 'how', 'who', 'when' and 'where' of learning*

Knowledge of theories, concepts and methods is often the key focus of existing tertiary education. It may be the starting point, the process, and the endpoint in much tertiary education, with little or no attention paid to the aspects of focus and engagement. Intended learning is best achieved when content knowledge (theories, concepts, methods) is approached after the focus of the intended learning has been clarified and the learner is engaged through connection to personal relevance.

A clear danger of teaching-centred education, that is, teaching which implicitly instils passive belief in course content, facts, concepts, theories and methods, is that the learning becomes little more than a memory-task.

> I think delivering materials non stop, without concept checking questions, without engaging the audience is not great for learning, that doesn't work very well with engaging students. (Interviewee 13)

This memory-task can have negative impacts on the learning process:

> I get in this place where I've got to remember everything, and I get overloaded and that's when I shut down. (Interviewee 17)

The outcome in this case would be a disconnected silo of information with functional meaning and usefulness perhaps limited to the context of meeting educational assessment demands. Surface and strategic learning are encouraged in this scenario (Biggs & Tang, 2011). If we are to maximise functional usefulness of learning in real-life contexts then course content, facts, concepts, theories and methods need to be integrated into real-life understandings. This approach encourages depth of learning, and demands that prior experiences and knowledge of the learner are brought to overt consciousness for the purposes of critical inquiry and integration. It is a critical element of synthesis of understanding, and is discussed more fully in the next section. This issue was raised by a number of educators, including:

> Learning is inherently connected to your past experience and your past experience as a student as well. (Interviewee 2)

> I learn better when the material I have to learn builds on from what I've already learned, it's a building process. If I'm learning something brand new without any scaffolding, it doesn't make sense ... However, if it's related to something I've learned before, and it expands on what I've learned before, and its relevant to what I'm trying to learn, or what I'm doing now, it'll stick better. (Interviewee 6)

Clearly knowledge is important in tertiary education. The different forms of knowledge are important to understand as they require different forms of learning. Declarative knowledge is

knowledge about things and events. Semantic memory holds declarative knowledge about the world while episodic memory holds declarative knowledge about prior events in our lives. Procedural knowledge focuses on how to do things (Ormrod, 2016). An extra form of knowledge relates to understanding when to use these forms of knowledge or conditional knowledge (Hattie & Donoghue, 2016). As discussed in learning theories (see section 3.3.2—The main learning theories) the learner plays an important role in translating the data they receive into knowledge. Time and focus needs to be provided for this translation process.

4. *Inquiry—the interaction of models and experiential data*

Inquiry is the active reconciliation of theory (knowledge) with experience (observational data). In an intentional learning context, knowledge in the form of models and representations are commonly communicated by sources of authority. However, for learning to occur, an engagement with the knowledge needs to occur. This engagement through inquiry moves the learning from a memory task to a meaning making in the learner's world.

> Learning is a process by which you find something interesting, and you apply focus, and then you incorporate it into yourself as a way of moving forward in anyway, I think that's probably the way I would say it. (Interviewee 17)

> It's a process of coming to know and understand something that you haven't really thought about before. And part of that process involves what you bring to that, what existing learning and understanding other people have brought to it, because students are reading materials written by others. So it's their own perspectives, it's trying to understand the perspectives of others who have had that knowledge in the past. And yet getting the student to try and then apply their own understanding but also come to grips with the understanding of others. (Interviewee 12)

> Adult learning has to be very directed, concise, succinct, to the point, and no wishy washy riff raff, I haven't got time to do any more reading other than what's necessary. At the same time it needs to be higher order. So critiquing and applying, rather than just regurgitating what they've just learned, what they've been reading about. (Interviewee 6)

The focus on inquiry is also referred to in section 5.3.1.5 (Learning from a mentor perspective—Categories—*Experiential*) and section 5.4.1.4 (Learning from the perspective of grounded concepts—Categories—*Discovering*). The emphasis in this section is on the idea that learning cannot be conceptually forced upon or mechanically transferred to learners. Instead, it requires insight arising from inquiry. As part of the inquiry, learners can also gain insights into their own learning processes.

> Learning is not only just learning the content, but learning how to learn, and part of that how to learn would be allowing yourself to have space to have times where you're not learning. (Interviewee 6)

Interviewee 6 highlighted the importance of developing metacognition. Ormrod (2016) defines metacognition as "people's awareness and understandings of their own thinking and learning processes, as well as the regulation of those processes to enhance their learning and memory" (p. 363). Enomoto et al. (2018) argued that metacognition contributes to adaptability and creativity, and enhances the capacity "to master the complexities of problems which are neither fully understood, nor possess a prescribed solution or any appropriate tool to solve them" (p. 3). Metacognition is vital for tertiary educators in order to understand their own approaches to learning. However, as they also have the responsibility to support others in their learning, it needs to be more sophisticated and beyond their own approaches.

5. *Synthesis—the embodiment of learning*

As mentioned in section 2.2.3.3 (The 21st century—*Emphasis on self-directed learning*), forming meanings and understandings, utilising judgement and independent resourcefulness, and making connections beyond the tertiary educator's intended transmitted meanings all contribute to learning (Blaschke, 2012; Hase & Kenyon, 2001, 2003). These processes involve the embodiment of insights gained through inquiry, such as reflection, discussion, and co-construction of learning. The process of synthesising involves all aspects of learning (see section 5.4.1.6—Learning from the perspective of grounded concepts—Categories—*Synthesising* for further commentary and quotes).

Synthesis leads to appropriate application over time:

> [learning is] being able to understand something, whether it's knowledge, or a skill, that enables you to recreate a performance in a range of situations. So, if it's knowledge its being able to recall and apply that knowledge in different situations. If it's a skill, it's being able to understand the kinaesthetic movements and the reasons for that skill and recreate it again, when it's required. And again, if it can be learned to such a high degree that it doesn't require a lot of cognitive thought about it, there's that immediacy of that recall, or the ability to be able to do something, or to be able to do it consistently over a period of time, that's probably a demonstration that that has been learned well. But, the rider with that would be that it's able to be applied appropriately in a range of different situations. (Interviewee 4)

Time is an important part of this stage as it takes iterations of exposure and/or deliberate practice before implementation can occur (Hattie & Yates, 2014). Building of new concepts, schemas, skills and behaviour is more effective if given the time to shift from System 2—learning explicitly through using knowledge and thinking strategically—to System 1—learning

implicitly and developing automaticity (see section 3.3.2.4—The main learning theories—*Cognitivism*) (Kahneman, 2013; Ormrod, 2016). This movement between System 1 and System 2 is highlighted by the following interviewee:

> I actually found giving learning space often allowed for that glue to form. And I call it my 'ah ha' moments … I would do the reading, and instead of worrying that it wasn't sinking in I would just say 'right, I'm just going to give it a week'. I would give it a week and not worry about it and then come back to it. And I would often find that when I would come back to it, the glue was there, and suddenly it was all sticking. It was allowing myself to have that space, so that space was enhancing to my learning. To answer your question, as a teacher, I'm only thinking this as a new thought, for the first time, my students, when they need space, I need to appreciate that that's them allowing themselves to have space so stuff sinks in. (Interviewee 6)

While a number of educators in the study talked about cognitive change, Interviewee 6 articulated the changes in the brain as learning occurs when asked: '*What is learning'?*:

> Brain surgery … You are doing brain surgery … You are creating neurons, you are creating more connections, you are encouraging them to do their own brain surgery without the knife. But it is neurosurgery. You are creating dendritic connections and creating new connections that weren't there before and you need to give them time and space for those neurons to grow.

Interviewee 6 also emphasised the importance of practice, space and how learning is only part of a learner's life:

> Then practice those new pathways by various means, reading, watching, talking with your students, so that is practising the new pathways over time. But learning is also about—once those dendrites and all that practice is happening—the space that is needed for that growth to happen. In that space is needed to allow you not to keep going on that well-trodden pathway which might not work anymore with this new pathway. But it's hard not to go down that well-trodden pathway because that's known for so long. So appreciation that time is needed for those new dendrites to occur, grow and be practised, and eventually become a well-trodden pathway … The other one [will] not necessarily be gone away or be dissolved but [will] be less trodden.

These comments exemplify how habits may compel us to unconsciously or even consciously return to old patterns of behaviour, cognition, reflection, or affect. Specific attention at this stage therefore needs to be placed on the embedding of these intended new patterns, otherwise they will potentially be lost.

Whilst embedding of patterns is an important element of synthesis, there exists a tension between felt meanings and abstract conceived meanings. Similarly, there exists a tension

between the known of recognisable patterns and the unknown of variations in real life from these known patterns (A. Y. Kolb & Kolb, 2018; D. A. Kolb, 2015). These tensions risk pulling us in different directions, creating conflicts in these drives and directions, and undermining our efforts. Our conscious conceptions of a plan may be in conflict with our subconscious intuition (Nygaard, Højlt, & Hermansen, 2008). Our overt belief in a generality may be in conflict with the specifics we face. It is through the effort to integrate such tensions that we adaptively learn (Cranton & Taylor, 2012; Jarvis, 2015). In reflection, we form, adjust or dismiss concepts based on patterns observed (Ambler et al., 2016; Boud, 2010; Canning & Callan, 2010). In reflexion, we raise subconscious associations to the surface for examination and possible adaption (Feucht et al., 2017; Lunn Brownlee, Ferguson, & Ryan, 2017; Ryan et al., 2018).

6.5.2 Different types of learning occur

It is useful to identify the type of learning that is the focus of learners in tertiary education. This is an important distinction because the literature often talks about learning, as did the educators in this study, as if there is only one type of learning. However, as will be seen in this section, different types of learning can be distinguished through the identification of their attributes. The type of learning that is aimed for would logically require our overt attention as this determines the approaches used to achieve it.

Typically learning is differentiated between knowledge and skills. Learning is also typically differentiated between affective and cognitive aspects. Although the cognitive taxonomy of objectives is the best known outcome of the work by Bloom and colleagues in the 1950s, there were three domains of learning identified at the time—cognitive, affective, and psychomotor (L. W. Anderson et al., 2001). The affective domain taxonomy was developed in 1964 by Krathwohl, Bloom, and Masia while the psychomotor taxonomy was developed by Simpson in 1966 and Harrow in 1972, neither of whom were part of the original research group (L. W. Anderson et al., 2001). Jarvis (2004) argued that two types of learning could be differentiated: intended learning and incidental or unintended learning. In tertiary education the focus is on intended learning, that is, learning that is defined and consciously sought. However, a great deal of incidental or unintended learning, that is learning which occurs without a specific intention, also occurs. Throughout this study a further key distinction has been drawn between what I have labelled compliance learning and adaptive learning. Compliance learning is based on the application of rules and/or accepted practice in order to complete routine activities or apply solutions to primarily predictable problems. Adaptive learning is based on principles in order to complete a range of activities, including analysis and evaluation of information, and apply solutions to primarily unpredictable and sometimes complex problems, and involves the

development of systematic and critical thinking, knowledge, skills and ideas. When reviewing the literature on learning and living in the 21st century, it is clear that adaptive learning is required in order to meet changing demands, some of which we cannot anticipate (Konst & Scheinin, 2018). However, this adaptive learning requires compliance learning in many instances as the compliance element forms the foundation of the adaptive learning. Compliance learning can be useful for skill replication, safety protocols, established procedures and the like. Dumont et al. (2010) argued that:

> Many scholars agree that the ultimate goal of learning and associated teaching in different subjects is to acquire adaptive expertise – the ability to apply meaningfully-learned knowledge and skills flexibly and creatively in different situations (p. 3).

This certainly aligns with the needs of 21st century learners, as frequently discussed in the learning literature. A further distinction is made between the mastery or routine expertise that one can acquire for a specific discipline, and adaptive expertise:

> [adaptive expertise] involves a willingness and ability to change core competencies and continually expand the breadth and depth of one's expertise. It is therefore central to lifelong learning (Dumont et al., 2010, p. 3).

Variations in levels of compliance and adaptive learning, and variations in demands for specific attributes of learning are related to AQF qualification levels in Table 6.3Table 6.3 (Attribute emphasis in learning).

Table 6.3: Attribute emphasis in learning

Attribute emphasis (lowest AQF level)	Certificate I	Certificate II	Certificate III	Certificate IV	Diploma	Advanced Diploma Associate Degree	Bachelor Degree	Bachelor Honours Degree Graduate Certificate Graduate Diploma	Masters Degree	Doctoral Degree	Attribute emphasis (highest AQF level)
AQF Level	1	2	3	4	5	6	7	8	9	10	AQF Level
General knowledge											Specialised knowledge
Concrete knowledge											Abstract knowledge
Segmented knowledge											Cumulative knowledge
Single discipline											Multidisciplinary
Low knowledge complexity											High knowledge complexity
Low autonomy											High autonomy
Low responsibility											High responsibility
Low accountability											High accountability
Predictable context											Unpredictable context
Known context											Unknown context
Routine context											Non-routine context
Compliance learning											Adaptive learning

It may be assumed that each level of the AQF would have a corresponding column that positions it in relation to the attribute emphasis. For example, all learning aspects of Certificate I courses might be conceived to be positioned at the lowest AQF levels while Doctoral Degrees all conceived to be positioned at the highest AQF levels. However, it is not as simple as this approach might indicate. For example, a Certificate IV in Aged Care may include specialised knowledge in the area of wound care or dementia or a similar area related to the care of older people. Equally, a Bachelor degree in Counselling may involve concrete knowledge related to skills alongside more abstract knowledge related to different theories of counselling. The key point is that learning at any level potentially involves a mix of both compliance and adaptive learning but in different combinations. It is reasonable to say that there would be more compliance learning for routine, known, and predictable contexts while more abstract knowledge that has high complexity, applied in an unpredictable context with high autonomy, requires more adaptive learning. Understanding the attributes of the learning in which the tertiary educator is engaged is a useful step towards effectively matching the desired outcomes to appropriate learning strategies.

An interesting finding in this study related to the AQF and learning. When discussing learning, no educators raised any differentiation between the different AQF levels in any way. Nor did they offer commentary about how learning in one situation may require something different

to that in another situation. It might be inferred that from their conscious perspective, learning was a single entity free from context. This might suggest an absence of consideration of different types of learning. It may also imply that perhaps the AQF does not feature in their thinking about learning.

6.5.3 Unintended consequence of regulatory bodies

There was strong evidence in interviewee responses of a tension between wanting to create a more durable and flexible learning experience versus feeling compelled to forego this in order to cover the curriculum to meet the accreditation requirements of the educational institution. This approach was at variance with their experiential understanding of how learning most powerfully occurred for themselves (and implicitly for others) as learners. This dilemma was spoken of with both a level of frustration that interviewees could not implement the type of learning they experience as learners, and resignation that this is what happens in a tertiary institution. The categories that most represent these issues are Category 1: Learning is directed (section 5.1.1.1—Learning from the professional educator perspective—*Directed*), Category 1: Disengaging environment (section 5.2.2.1—Inhibiting factors in learning—*Disengaging environment*), Category 1: In an educational institution is planned, structured and delivered (section 5.3.1.15.3—Learning from a mentor perspective—*In an educational institution learning is planned, structured and delivered*), and Category 1: Accumulating and applying (section 5.4.1.1—Learning from the perspective of grounded concepts—*Accumulating and applying*). The words the educators commonly used to describe learning in these ways included: predetermined, focused, structured, delivery, curriculum, and time frames.

These structural forces appear to have caused the majority of these educators to largely disregard recent literature, which focuses on personalised learning and heutagogy, and to instead focus on content transmission and teacher-centred approaches. Bartle (2015b) argued that personalised learning "empowers students to become co-authors of their learning pathway and tailor their learning activities to meet their needs, abilities and interests" (p. 1) and "responds directly to the diverse needs of individuals rather than imposing a 'one size fits all' model on students" (p. 2). This sentiment is echoed in heutagogy with its focus on self-determined learning (Hase, 2009, 2011; Hase & Kenyon, 2001, 2003). However, it is countered by a tension with the current emphasis on content coverage and delivery in order to reach the predetermined, focused, and structured curriculum within organisationally-set time frames.

6.5.4 Limited reference to learning theories

This study sought grounded and experiential insights of interviewees, rather than their theoretical understanding. This stance was introduced in the opening of each interview with the following statement:

> This study focuses on your lived experience and noticing of learning rather than the theories about learning. Feel free to provide examples and explanations of what you mean in response to the questions. So are you ready to commence?

The first four interview questions inquired into what educators had *noticed* about learning, which implicitly reinforced this focus on the 'lived experience and noticing of learning rather than the theories about learning'. Whilst this initial priming statement, and the wording of subsequent questions directed primary attention, they in no way prohibited interviewees from referring to learning theories in their responses. Indeed it was anticipated that educators would still use theories and concepts that they found powerful and useful as the framework for articulating their experiential observations.

Interestingly, and surprisingly, the learning theories discussed in section 3.3 (Learning theories) were near absent in interviewee responses. Passing references to learning theories and models, such as constructivism, Kolb, and behaviourism, were made by four interviewees. The remainder of the interviewees did not overtly relate their understanding of learning to any systematic theory or model of learning, or overtly name any learning theories or models. This was surprising given that learning theories have traditionally informed educational practice in educational institutions.

In answering these interview questions, it was apparent that educators were primarily engaging with seeking to describe their intuitive theory-in-use rather than an espoused theory. In explaining their understanding, educators at times used concepts of varying specialty or abstractness, such as: 'structured learning'; auditory/visual/kinaesthetic 'learning styles'; learners 'accommodating' meanings; learner 'identity'; 'self-reflexivity'; 'metacognition'; 'curation of learning'; 'intrinsic and extrinsic motivation'; and 'authentic experiences'. This suggested some direct or indirect connection to the literature, although not necessarily in a way which systematically unified elements of understanding of the processes involved in learning, as might occur if specialist expertise in learning processes had been previously specifically studied, developed, critically analysed, and articulated. This lack of a cogent overarching framework of how learning occurs, and how learning can be aided, may be seen as

the outcome of the tertiary education regulatory bodies, TEQSA and ASQA, failing to require educators meet standards of expertise in learning processes.

Traditionally, learning theories have been based on dominant psychological theories of the day. These theories focused on learning within an individual, with some account for social and cultural influences on this individual learning. Various new approaches to conceptualising learning, spanning multiple disciplines, have arisen in the digital age which have instead focused on understanding the phenomenon of learning beyond the individual-centric psychological lens of traditional learning theories (Australian Research Council, 2017; Bransford et al., 2000; Collins, 2016; Hattie & Yates, 2014; Säljö & Veraksa, 2018).

New sociocultural learning theories include situated cognition, distributed cognition and connectivism. Situated cognition conceives of learners as participating in communities of practice where knowledge is constructed through the community sharing its resources, and is focused on the learning and cultural practices of that group. Identification with these communities draws individuals to learn/take on the identity, culture and practices of those communities (Garrison & Arbaugh, 2007; Lave, 2009; Wenger, 2009). Unlike situated cognition, distributed cognition does not require identification with any community of practice for individuals to avail themselves of knowledge and cognition. A key benefit of distributed cognition is that this facility reduces cognitive load for any individual. An individual's cognition is considered to extend beyond the physical limits of the individual's neurology. Distributed cognition is founded on trusting others as specialists (Cash, 2013; Clark & Chalmers, 1998). No mention was made of these more modern learning theories. However, just as in the case of the traditional learning theories, the lack of espousal of these theories does not rule out the possibility that these theories have directly or indirectly impacted on educator theory-in-use.

One interviewee did raise the issue of systems in which learners reside, although this interviewee did not specifically refer to Brofenbrenner's ecological systems theory, which has sometimes been used in educational theory (Ormrod, 2016). This model was not discussed in the learning theories section as technically it is a developmental model. However, this model suggests that individuals are affected by the systems in which they reside—these form the environmental influences on that individual. The microsystems are the system that are the most immediate to the learner; the mesosystems are where interactions between the various microsystems occur; exosystems are where microsystems are impacted without direct contact with the individual learner; macrosystems contain cultural beliefs, ideologies, behaviour patterns, far-reaching events (such as war or social and political issues). The final system Brofenbrenner identified was the chronosystem which referred to the changing-with-time

aspects of the other four systems (Ormrod, 2016). These different systems apply equally to learners and tertiary educators as both are engaged in complex and interacting systems.

This quote shows awareness of the impact of these systems both within and beyond the educational environment:

> Well they're in an educational system. They're in the smaller system here is the classroom. It might be their community group. But all of that stuff they bring into the room is part of the systems they bring. Then they've got to make that work within this bigger one called education or the learning environment, [and] which ever organisation they're with. And then you've got that system of the people just in the room for that day or days. So there's these multiple systems that you drop in and out of. And what impact does that have and how does it influence what's happening? We talk about it from the diversity point of view and yes diversity is important but I think the aspect of diversity not taken into account enough would be the systemic diversity. (Interviewee 8)

The failure of interviewees to relate understandings of learning to learning theories might, in part, suggest that both traditional learning theories and the more recent sociocultural theories were not perceived by tertiary educators as relevant in their context. Equally, interviewees may have lacked knowledge of learning theories due to the lack of regulatory requirements already discussed (see section 2.2.3.4—The 21st century—*Regulatory expectations for tertiary educators*). Alternatively, any knowledge of learning theories may not have significantly informed interviewee experiences in learning. Any of these conclusions would be reasonable cause for intervention in theoretical or practical spheres, or both.

Whilst learning models and theories may be useful tools, they are secondary to the sensitive use of professional judgement in response to variable contexts. Garrison (2011), for example, draws on a collaborative constructivist view but warns that "any educational experience demands the experience and insight of a reflective and knowledgeable teacher who can translate principles and guidelines to the contingencies and exigencies of their unique contexts" (p. 5). In this case, tacit knowledge that is pragmatically built may not align with an identified learning theory.

An alternative to the adoption of a learning theory is to identify and implement common elements across theories which are found to be effective. For example, an understanding of cognitive load limitations may be helpful in learning design irrespective of the particular learning theory chosen, or not chosen. The common factors approach has often applied in counselling. Corey (2013), a lead writer in the theory and practice of counselling, argued that "the common factors approach searches for common elements across different theoretical

systems" (p. 425). Instead of identifying the differences between the different theoretical systems, attention is paid to the common factors that exist. In tertiary education, these common factors are more likely to be associated with teaching strategies or stances than learning theories per se. Biggs (2012), for example, identified common factors associated with success in learning through exploring three levels of thinking about teaching. The first two levels are concerned with transmission and blame; the third level is focused on common factors which promote learning:

- Level 1: what the student is – when a student does not learn, it is due to a personal deficit on their part such as lack of ability, poor attitude, low study skills, motivation issues
- Level 2: what the teacher does – obtaining an armoury of teaching skills, including the capacity to structure and deliver competent teaching, focuses the teacher on management, not facilitating learning
- Level 3: what the student does – focus is on supporting activities leading to appropriate learning, teaching that is systemic, taking into account all components in the system, and choosing activities that promote understanding of concepts and principles.

Common factors at Level 3 include systemic thinking of the educator, engagement of learners, and a variety of learning activities, all of which support the learner to construct their learning. It is possible that the lack of reference to learning theories in the interviews suggests educators' implicit view that it is time for tertiary educators to move beyond the learning theories paradigm and focus on common factors that promote effective and efficacious learning. The relevance of learning theories may be fading due to the view that the models have low correspondence with the reality in which tertiary educators are engaged (Bergsteiner, Avery, & Neumann, 2010).

Any of these possibilities may explain the lack of reference to learning theories. Or perhaps Interviewee 8 captured their perceived value to tertiary educators:

> A lot of the theories around look at learning as being some sort of static or still thing when in fact it's very, very dynamic. And I don't know that dynamic factor has been taken enough into account based on what I've read.

A more specific insight into why some educators did not offer ideas about learning theories can be gleaned from several unsolicited comments about learning. While the interviewees were all tertiary educators who had responsibility for the learning of others, had self-selected into a study on learning, and generally had weeks between agreeing to be interviewed and the interview occurring, there was some difficulty articulating thoughts about learning. I was

surprised by the level of difficulty that some educators had with answering question five: '*What is learning?*' Pauses from several seconds to almost a minute occurred with all interviewees. These pauses could represent reflection on how to word a response in some cases. However, two interviewees offered the following unsolicited comments:

> I don't know the definition of learning. I'll have to go and look it up. (Interviewee 9)

> Never have I thought. I don't know if I've ever looked it up ... So I guess learning is ... I don't know [laughs]. I'm going to Google 'definition of learning' when I leave this. (Interviewee 10)

These comments reflect what two other interviewees talked about. First, Interviewee 4 noted that "People often don't understand what learning's about". Interviewee 10, while focused on the role as a mentor and the process of what would be said to a new educator, offered the following:

> I usually have a conversation about learning, and see where they're at first ... And so it's always very interesting because a lot of people want to tell me how they teach ... So they're very good at telling me how they teach, and the sorts of teaching qualifications that they've had. And the sorts of teaching levels of expertise that they've developed over time. It's always really interesting when you first start with that, and the first thing you're getting is this is how I teach. Not this is how the students learn, so who are our students, how do we craft, so then I have to move into to, well, let me share with you who our student populations are, because we do have quite interesting cohorts of students that are here for very different reasons. (Interviewee 5)

We need to consider the possibility that educators are more focused on teaching (the how) than learning (the why). This is consistent with the findings in questions one, three and four. It is also consistent with tertiary education being perceived, including by educators in this study, as dominantly outcome focused and content-heavy.

6.5.5 Limited reference to technology

Although technology was mentioned by six of the interviewees, the other twelve interviewees did not refer to technology at all. This is a surprising finding for three key reasons: (i), the pervasiveness of the digital world in the workplace for which educators are preparing learners; (ii), the emphasis in the educational literature on the integration of technology into tertiary education; and (iii), their own workplaces—educational institutions—have been implementing technology in a variety of ways to support e-learning that meets the demands of 21st century learners. Evans (2005) observed that during the last two hundred or so years, we have had three major technological waves: print and correspondence; audio, video and television; and

computer and digital communications. This third generation, following the advent of the world-wide-web and access to it via the internet, has allowed for unprecedented changes in education, and is the foundation of e-learning. While this was discussed in relation to the context of the tertiary educator (section 2.2.3.2—The 21st century—*Embedded technology*), it is now discussed based on the interviewees' responses.

Johnson et al. (2013) argued that in the 21st century, people expect to work, learn and study on their timetable and in a manner that suits them. This is greatly facilitated by the ubiquity of ICTs and enhanced by the immediacy and ease of access via mobile and social technologies. This demand for convenience is slowly realigning the timing of formal educational activities from synchronous to asynchronous or a combination of the two. But it is not just for convenience that the use of ICTs is important. Tertiary education has a vital role to play in the development of digital literacy in the workforce (Bliuc et al., 2012). This can be through integration of ICTs into educative processes that build digital literacies for both learning and the lifelong and lifewide context of the learner (Stine-Morrow & Payne, 2015; Tennant, 2009; Yang et al., 2015). Tertiary education can also extend digital literacy beyond gaining technological skills to include:

> … generating a deeper understanding of the digital environment, enabling intuitive and discerning adaptation to new contexts and co-creation of content. Institutions are charged with developing students' digital citizenship, promoting the responsible and appropriate use of technology, including online communication etiquette and digital rights and responsibilities in blended and online learning settings. This expanded concept of digital competence is influencing curriculum design, professional development, and student-facing services and resources (Adams Becker et al., 2018, p. 22).

It is the digital environment in which learners and educators now live.

6.5.5.1 Pervasiveness of the digital world

At the core of infusing technology into tertiary education is the pervasiveness of technology in the world more generally. In Australia, the digital world has continued to grow since the turn of this century. This growth is within sectors such as information, media and telecommunications (IMT) industries, where digital technologies would be expected. However, it is also in sectors that seem less obvious. For example, Deloitte Access Economics (2017) estimated that by 2020, 7.3% of Australia's gross domestic product, or $139 billion, will arise from the digital economy—nearly 90% of this, or around $125, will not be from within the IMT. It will involve use of the internet and digital technologies in areas of the economy where the heavy use of digital technology has not been traditional, including agriculture, healthcare, and

manufacturing. The Foundation for Young Australians (2017b) contended that every job in every occupation will be impacted by automation with some occupations or clusters more resistant to automation than others. In the face of automation of many work areas, the counterpoint is a growth in digital technologies. It is, therefore, essential that digital literacy be a central part of tertiary education where learners are being prepared for their personal and professional worlds. This requires different levels of upskilling for educators, both with the technologies and how to effectively integrate them for educational purposes. It is surprising that only six interviewees mentioned technology as all of the eighteen interviewees were engaged in occupations where technology had made a substantial impact.

6.5.5.2 Tertiary education responses to the demand for digital literacy

The World Bank (2002) argued that tertiary education has a central place to play in the development of professional capacity. This occurs through "effective creation, dissemination, and application of knowledge" (World Bank, 2002, p. xix). Developing professional capacity has been an aim of tertiary education since its inception. This has been the case with the preparation of apprentices in the trades, semi-skilled and vocationally-oriented preparation through VET, as well as the preparation of professionals through HE. The Department of Education and Training (2016) *Opportunity through learning* report noted in its corporate plan for 2016-2020:

> Goal 4: Skilled workforce
>
> Ensure that Australia's workforce has the capability to respond to the needs of current and emerging industries thus contributing to global competitiveness.

The workforce that educators are preparing learners for is significantly impacted by the rapidity of technological advances. In relation to digital technology, The Foundation for Young Australians (2017b) found that there was a 212% increase in demand for digital literacy from 2012 to 2015. With this growth, it is no wonder that Deloitte Access Economics (2017) contended that futuristic innovations are being applied now and transforming sectors within the Australian economy. Some examples they provided were: The Internet of Things, Artificial Intelligence, 3D printing, virtual and augmented reality—all of which have also impacted on tertiary education.

The literature on tertiary education discusses a range of issues related to ICTs and how they are being integrated into tertiary education. This extensive body of literature highlights that ICTs have been utilised in a variety of ways including as a facilitator of access to vast quantities of information (for example, the internet and databases), a communication tool (for example,

emails and social media), as the basis of new courses or subjects (such as preparing information and communication technology (ICT) specialists via multidisciplinary degrees and relevant training programs (Salmi, 2002), and as modes for e-learning (Garrison, 2011). Given the size and scope of the literature, it is surprising that the interviewees did not discuss this aspect of learning in some depth. Equally, the literature may be in the conceptual realm but is based on what is occurring in the real world of educational institutions around Australia and beyond. (Garrison, 2011, p. xiii) described e-learning as "explosive, unprecedented, amazing, and disruptive". While Garrison may display some hyperbole in this statement, it is certainly the case that technology has changed the face of tertiary education and has allowed educational institutions to meet the expectations of 21st century learners to study whenever and wherever with their own technology (Johnson et al., 2013). This embedding of e-learning has been through four main approaches: fully online programs; blended learning programs; online collaborative learning (OCL); and Massive Open Online Courses (MOOCs) (Norton, Sonnemann, & McGannon, 2013). Details of these approaches are explained further in Figure 6.6 (Four approaches used to embed e-learning).

Fully online

- Asynchronous and synchronous communication
- All aspects of a unit are online including the content, activities, discussion forums, readings, assessment information and submission
- Podcasts, lectures or vodcasts may be included to provide human presence
- Hyperlinks to outside sources online may also be included
- Generally no face-to-face component although there may be video-conferencing that mimics it
- May form part of the multi-modal approach

Blended

- Asynchronous and synchronous communication
- Basic form: the online component is a repository for unit overview, assessment items, readings and other relevant documents
- Adding some interactive aspects, such as weekly quizzes and application activities takes blended learning to a flipped or non-flipped but interactive level
- When flipped, it can mimic online except a face-to-face component is added

Online Collaborative Learning (OCL)

- Asynchronous and synchronous communication
- Pod rooms may be used to foster the use of technologies in small groups - educator has their own pod; each small group shared a pod
- Technology is integrated into the pod desks so all could access online materials simultaneously
- Online collaborative learning (OCL) involves learners creating knowledge: inventing, exploring ways to innovate, and seeking conceptual knowledge in order to solve problems
- Educator acts as the link to the knowledge community
- Can be used as part of the fully online or blended approach

Massive Open Online Courses (MOOC)

- Asynchronous communication
- Open—anyone with internet access can participate; content is open to all learners (in most MOOCs)
- Generated work from the MOOC is shared and in the public domain
- Participatory emphasis allows all learners to contribute ideas and interact with other learners on a voluntary basis
- Knowledge is distributed across the network of learners via discussions and forums where all learners interact with the course materials via questions or requests for experiences and the like

Figure 6.6: Four approaches used to embed e-learning

Adapted from: Andrejeva and Ostroverkhaia (2017), Baturay (2015), Bliuc et al. (2012), Garrison (2011), Graham (2006), Institute for Teaching and Learning Innovation (2015), Partridge, Ponting, and McCay (2011), Siemens et al. (2015), Vaughan (2007), Wilson and Randall (2012)

McLoughlin and Lee (2008) argued that 21st century learners desire autonomy, connectivity and socio-experiential learning. They further argued for the movement away from the 20th century notion of an industrial model of learning. Instead, the focus in the 21st century needs to be on learner empowerment via collaborative, networked interaction (McLoughlin & Lee, 2008). This changes the essence of the educator's role in learning, and is better represented by an organic approach that produces organic learning which changes depending on the needs of those involved. These ideas are supported by Reese (2015) who argued that ideally a blend of both synchronous and asynchronous activities promote collaboration, freedom to create knowledge, and an authentic learning community in which to learn. This authentic learning community contrasts with the transfer of knowledge model of traditional education. It is potentially lively, engaging, empowering and constructivist in its nature.

This positive approach was captured by a number of comments made by interviewees. Interviewee 14 talked about the importance of technology and digital competency as a core 21st century skill. This interviewee continued that digital competency is important in the workplace and, more specifically, that the online learning environment could promote other 21st century skills such as collaboration and teamwork.

> The soft skills are becoming so much more prevalent, that we have, through good facilitation, the ability to prepare people to grow into creative thinkers that are able to collaborate and the highest resource sought after is that creative thinker that can work with teams, or groups, that can actually use technology or advance the pursuit of transforming the workplace. So it doesn't matter if we have had a lot less emphasis on the actual microcosm of skill sets, because that's shifting constantly. We're able to get students into a way of thinking that is actually project based learning, so they can be thrown in with a bunch of odd bods and actually produce a result in all sorts of environments. So that's why I'm so excited about the possibilities of online learning. Because it's connecting communities all round the world at all different times to actually have that shared experience. It's not the face to face poor cousin. You can get more engagement with students online than in the face-to-face environment because of what's possible. (Interviewee 14)

A strong emphasis on technology as a facilitating factor, with its easy access for most learners, was offered by one interviewee:

> … a massive factor is the evolution of technology. The vast majority have access to it on a daily basis. For facilitation of learning, we have access to it 24/7 if we want to. (Interviewee 7)

Interviewee 7 identified an alignment between classroom teaching and the Industrial Revolution. Building learning that is engaging is central to this interviewee's discussion of technology. "Curating of learning artefacts to support learning" was central to building engaging learning. Two additional points were raised by Interviewee 7 in relation to technology. The first was that the technology itself has been "a wonderful disruptor for education". The second was that:

> … most of us know about the strong preference most people have around the visual way of learning ... And suddenly YouTube came along ... I've been in classrooms and asked 'How do most people learn new things?' and they go 'If I don't know how to do it, I see whether there's a video on it' and I have done that myself. (Interviewee 7)

This comment exemplifies the nature of many learners in the 21st century and how they approach a learning moment. The notion of learning through videos aligns with Treadwell's (2017) fifth paradigm shift in education:

> Over the next 25 years, we will experience the rise of video as the primary information source that learners will use for research and inquiry. It will also increasingly become the medium that learners use to demonstrate their comprehension and understanding (p. 3).

To exemplify the difference in 21st century learners' approach to learning, Interviewee 5 observed the following:

> So they don't play them at normal speed, they play them at 8 times, 16 times speed, speeding through what they think they already understand and stopping for where there was something that they didn't quite get or think that they need to review in a deeper way. (Interviewee 5)

There is, however, a discrepancy between gaining the benefits of technology and the slow embedding of technology in tertiary education (Adams Becker et al., 2018; Johnson et al., 2013). In terms of HE, Adams Becker et al. (2018) argued that three types of challenges currently exist:

1. solvable challenges that we understand and know how to solve
    a. fostering authentic learning through project-based learning, challenge-based learning, competency-based learning, which aim to create hands-on, real-world experiences
    b. improving digital literacy so technology is integrated into learning in meaningful ways that builds digital literacy for all involved
2. difficult challenges that we understand but for which solutions are elusive
    a. adapting organisational designs within educational institutions to better align with 21st century workplaces

   b. advancing digital equity by overcoming barriers such as lack of high-speed internet, disproportionate access based on socioeconomic status and gender, access to technology including smartphones, tablets, and laptops so participation is not hampered
3. wicked challenges that are complex to even define, much less address
   a. economic and political pressures related to policies, especially funding for learning, research, and rethinking learning paradigms
   b. rethinking the roles of educators as expectations to integrate technology, leverage active learning, and changing responsibilities.

The embedding of technology in tertiary education still continues to be a difficult transition for many tertiary educators (Reid, 2014, p. 383), which has led to a lack of "willingness or interest in adopting" technology. As Interviewee 5 noted:

> For us as educators, learning how … to adapt processes of learning that is more in line with how students today want to consume their learning I think is a real challenge. And something that certainly we're grappling with and I've got a lot of academic staff who are simply refusing to budge. And ... they're going 'nope, I will have a two hour lecture and they will come and they will listen' and I will tell them what they need to know and I will share my deep history and my research and they will grow'. However, these learners do not want to attend face-to-face but they will download and listen to recorded videos happily.

Perhaps this commentary reflects the wicked challenge of rethinking the roles of educators (Adams Becker et al., 2018) or the broader issue of educators ascribing to the instruction, lecturer-centred teaching approaches (Barr & Tagg, 1995; Kember & Kwan, 2000). The change from face-to-face to blended or online learning has highlighted similar issues when educators have tried to replicate lecturer-centred approaches in e-learning, not being mindful of learner socio-experiential expectations (McLoughlin & Lee, 2008). This was something that occurred in the early iterations of e-learning where new technologies met with old passive learning models (Garrison, 2011). MOOCs also exemplified this issue when they did not use a connectivist, distributed peer learning approach aimed at knowledge creation through social network learning (Baturay, 2015). This replication of traditional lecturer-centred approaches resulted in MOOCs becoming: objectivist rather than constructivist in perspective; focused on convergent answers; highly structured; and focused on individualistic learning (Swan, Day, Bogle, & Matthews, 2013). Like face-to-face lectures, they focused on knowledge duplication (Siemens, 2013) and were dominated by 'talking heads' (Baturay, 2015).

Educators have familiarity with traditional methods of delivery and these traditional methods might also be seen by educators as more effective learning environments (Roberts, 2008). Andersson (2010) argued that educators or learners may believe, overtly or implicitly, that transmission learning and not constructivist learning should occur. This is supported by Tickner

and Hunt (2012) who argued that different cultural groups and individuals may hold epistemic beliefs that contradict collaborative and learner-centred approaches. Such beliefs can also be based on concern about how learners construct their knowledge:

> I think this reliance on only getting knowledge through electronic media … I think it's a fabulous resource, but also it can be a detriment, because other ways of learning are not explored, how things work. I had a student who said, with a research project, I couldn't find anything on Google so obviously it doesn't exist, and that was absolutely gobsmacking ... As I put the key words in and could find it straight away. But this lack of thinking outside the square seems to have been lost, because it's so reliant now on technology. (Interviewee 11)

A lack of technology literacy, and the fear that students are more competent in the new technologies than educators, can also affect educator engagement (Roberts, 2008). Prensky (2001) supported this fear of students being more competent on the basis of whether they were 'digital natives', the generation who have grown up with digital technologies, and 'digital immigrants', those who have not grown up with them. This can intimidate educators and stereotype learners who may fall into the 'digital natives' category but be less skilled than anticipated. Equally, it may stereotype learners who fall into the 'digital immigrants' category but are more skilled than anticipated. Unfortunately, such a simplistic divide has not been helpful and post-Prensky debates have suggested that it is degree of exposure, engagement and willingness to adopt digital literacies that makes a more substantial impact on digital competence than time of birth. These underpinning belief systems, however, can convert solvable challenges to wicked challenges.

In spite of the growing demands for embedding technology from learners, employers, and educational institutions, Johnson et al. (2013) highlighted that most academics in HE are not using new and compelling technologies for learning and teaching, nor for organising their own research. They proposed that one reason for this is that faculty training still does not acknowledge that digital media literacy continues its rise in importance as a key skill in every discipline and profession. Another reason may be difficulties in deciding which technologies to include. Reeves and Bonk (2015) offered an insight into this problem by highlighting that every year a new and ever-growing batch of new technologies are released and enthusiastically touted to "revolutionize" teaching and learning. These issues can create ambivalence or aversion towards technology. Aversion was reflected by Interviewee 16 who simply identified technology as an inhibiting factor but did not elaborate any further. Interviewee 1 identified technology as both a facilitating and inhibiting factor depending on the focus of the user. Perhaps this represents one of the identified solvable challenges: improving digital literacy so

technology is integrated into learning in meaningful ways that builds digital literacy for all involved (Adams Becker et al., 2018). Interviewee 1 also commented that technology can potentially be a distracting influence in the learning environment, but could also see the benefit in being able to obtain information quickly on a particular topic.

Further support for the need for educators to become more digitally literate was offered by The Foundation for Young Australians (2017b). They completed a detailed analysis of occupation codes and concluded that over the next 2-5 years, 90% of the current workforce would need to be digital citizens (someone who use technology to communicate, find information and transact digitally) in order to function in the digitally-enabled workforce. This has a double effect for educators who not only have to be part of the digital workforce in their own work environments but they also have to prepare others for it. In tertiary education, the merging of face-to-face and online learning modes has occurred through blended learning (Brenton, 2015). Tertiary educators who avoided technology to date will be less able to do so in the future as policies in educational institutions will likely reflect the demands of learners and not the opinions or preferences of educators.

Benefits arise from this integration of technology for both educators and learners. The Foundation for Young Australians (2017a) projected the shift in focus that digital enhancement brings for school teachers. This is shown in Figure 6.7 (Comparison of teacher activities in 2006 and 2030).

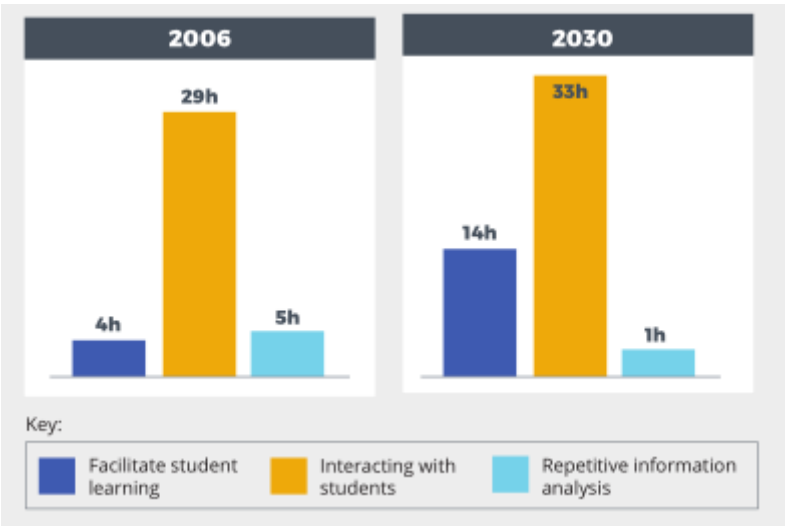

Figure 6.7: Comparison of teacher activities in 2006 and 2030

Source: The Foundation for Young Australians (2017a, p. 11)

> In 2030, teachers will increasingly facilitate learning, and spend less time 'lecturing', as digital technologies enable more self-directed learning (The Foundation for Young Australians, 2017a, p. 11).

It seems this trend is likely for tertiary educators as well and will involve a rethinking of the role of the tertiary educator:

> Educators are increasingly expected to be adept at a variety of technology-based and other approaches for content delivery, learner support, and assessment; to collaborate with other instructors both inside and outside their institutions; to routinely use digital strategies in their work with students; to act as guides and mentors to promote student-centred learning; and to organise their own work and comply with administrative documentation and reporting requirements. Students add to these expectations through their own use of technology to socialise, organise, and informally learn (Adams Becker, Cummins, Davis, & Yuhnke, 2016, p. 8).

In summary, regardless of whether educators want to engage with technology or not, most inevitably will need to engage in decisions on what technology to use. This engagement is not just for employability of the learners with whom they work. It is also for functioning in everyday life as technology becomes more embedded. These decisions utilise their expertise to assess the ability of technology to support educational needs (M. Brown, 2009). In this way, e-learning design is based on the same key principle as face to face: it needs to contribute to learning. Ultimately, as M. Brown (2009) contended, "our business now and into the future needs to be about learning and technology—in that order".

6.5.6 Refocusing on learning in order to respond to heterogeneity

Heterogeneity of learners was addressed in section 2.2.3.1 (The 21st century—*Heterogeneity and learning difficulties*) by analysing the targeted disadvantaged groups identified by the Department of Employment (1990) in the paper *A fair chance for all.* But the dimensions of heterogeneity of learners is far wider than these identified disadvantaged groups. As an example, Lawrence (2005) summarised the areas of diversity that can be grouped as single variables or clusters of variables. These variables included:

- gender, ethnicity, generation, sexual orientation
- prior school experience, attendance type, mode of learning
- levels of students' learning skills and attitudes: variations in academic language skills, study skills, confidence to participate, English language skills and numeracy, motivation to study, prior knowledge and skills in discipline
- personal circumstances and skills, degree of adjustment to learning environment, health, trauma, number/level of external commitments including family responsibility and work

- individual qualities such as personality type, state of mind, coping strategies, interpersonal skills and communicative competence, and such factors as intelligence, preferred learning style/s, prior academic achievement, maturity, flexibility, motivation, commitment, and desire to succeed.

Additional areas of diversity include: emotional intelligence, self-awareness, identity, assumptions, beliefs, aspirations, expectations, preferences, attitudes, interests, age, access to IT, time available or committed to learning, financial background and means, and access to transport services. Connected to ethnicity and personal circumstances may be religion or spiritual beliefs, and country of birth. Educators need to have a higher level of expertise in learning and human change processes in order to respond to the different learning needs that may present in a typical learning environment. With the wider catchment of learners with a variety of learning needs that vary from the former academically 'elite' who entered tertiary education, especially HE, requires more skillful approaches that start with a solid understanding of learning processes (Weimer, 2003). This is supported by numerous researchers in tertiary education as we need to focus more attention on the impact of the work of educators on learners' learning (Hattie, 2009, 2015).

TEQSA pointed out the raft of legislation affecting the efforts of tertiary education in terms of responding to diversity (see section 2.2.3.4—The 21st century—*Regulatory expectations for tertiary educators*). Policies and practices exist that aim to assist tertiary institutions and tertiary educators to respond to diversity—for example, see Kift (2015) and transition pedagogy or the OECD's work on innovative pedagogy (Paniagua & Istance, 2018). While it may be easier to be aware of some of the diversity issues, such as race, other diversity issues are less obvious, such as disability—especially learning difficulties.

As discussed in section 2.2.3.1 (The 21st century—*Heterogeneity and learning difficulties*), learning difficulties impact directly on the endeavour to learn. At this stage in most educational institutions, the emphasis in policies is to support those with learning difficulties once the individual has alerted the organisation to their existence. The study by Grimes et al. (2017), which covered a sample of one Australian regional university's undergraduate group (n=2821), found 35% (n=994) self-identified as having a learning challenge, based on a listing of disabilities, yet only 13% (n=361) reported this to the institution. This figure of 35% includes learning difficulties brought about by mental health issues. Given Australia struggles with identifying the accurate numbers learners with learning difficulties and the types of learning difficulties they experience, Grimes et al. (2017) utilised UK and US statistics on students with learning disabilities to place context around the numbers. They noted of the disclosed disabilities in the UK undergraduate population, specific learning difficulties accounted for

48.6%, mental health conditions accounted for 12.7%, and medical conditions accounted for 10.3%. In the US, learners who had disclosed disabilities identified 69% as learning difficulties.

Department of Education and Training (2018a) reported just over 1.5 million students in 2017 were enrolled in higher education institutions. If the proportions from the study by Grimes et al. (2017) held more generally, over half a million of these learners would self-identify as having learning challenges (based on the study's disability criteria), and less than 200,000 of these would report these learning challenges to their institution. Another way of expressing this is, if these proportions held more generally, in a typical group of 20 learners, 7 would self-identify as having a learning challenge (based on the study's disability criteria) with only 2 or 3 reporting this to the educational institution.

Interviewees in this study identified heterogeneity of learners as an issue, yet gave little indication that they were aware of cause in terms of the extent of diagnosed and undiagnosed, or reported and unreported, learning disabilities/difficulties in their learning cohorts. For example:

> … [I get involved with] starting to unpack some of those barriers to learning. (Interviewee 14)
>
> Everyone learns a little bit differently. (Interview 12)

An interesting issue, effectively ignored in learning literature, is that tertiary educators similarly experience a range of learning difficulties. Two interviewees provided insights on this issue.

> What I usually do is I sort of black out when I'm learning. In other words, I don't hear the instructions, I might read something but then I don't understand what I've read. So what I have to do is I have to really focus and … use the yellow marker, make notes, when I'm in a lecture, I'm making notes. Now I may never go back to those notes, but sometimes I do, I go back to those notes, and I try to translate them, and I put them in like a form so I have it, and I know that I might be able to use that in a PowerPoint in teaching someone ... I dissociate a little bit. I think that comes from the 'you're not good enough, you're not intelligent enough, you don't understand what they're saying, you can't spell,' because if you were to read what I've written, the grammar, the spelling would be horrible, it's all phonetic for me, the language, no one could actually read my notes. So it's all that sort of negative appraisal that I do on myself that sort of gets in the way to my own learning. (Interviewee 17)
>
> My personal learning informs my educational learning would be the summary. Very much so. But it enables me to see things in people so I can better tap into what might work for them. If I think back, my own story, because of my younger years I grew up operating from a position of fear. So all of my decisions were fear-based … plus I suffer from social phobia. So

> whenever there was an activity on you'd probably see me as quickly as I could withdraw to the corner of the room because I was feeling incredibly challenged. And pushed. At 48 I made a decision to not operate from a position of fear ... What I found more challenging and I still do is the group activities in a room. For me I have to feel safe in the room and that's not just physically, that's emotionally safe in a room. I find that easier when I'm the instructor because I have a defined role and I've got used to what that role is. But when I'm a participant it's not quite as easy for me. (Interviewee 8)

Heterogeneity brings challenges with it yet the educators indicated they were aware of the need to respond to individual learning differences (see section 5.2—Facilitating and inhibiting factors in learning).

6.6 Cultivating learning

Cultivating is originally an agricultural term related to growing crops. However, in this context, it is used as a synonym for promoting, improving, developing, or fostering learning. In order to do this, tertiary education can develop research informed practices (Weinstein et al., 2019). There is a great deal of literature on how to build durable and adaptable learning. Some of this literature is complementary and clear while other literature is contradictory and opaque. It can be difficult for tertiary educators to gain valuable insights into learning due to the complexity of the phenomenon. The key findings from the literature were summarised into seven learning principles when the OECD (Organisation for Economic Co-Operation and Development, 2017) commissioned authoritative research reviews from prominent experts in learning. These seven principles are:

1. Learners at the centre—'the learning environment recognises the learners as its core participants, encourages their active engagement and develops in them an understanding of their own activity as learners'
2. The social nature of learning—'the learning environment is founded on the social nature of learning and actively encourages well-organised co-operative learning'
3. Emotions are integral to learning—'the learning professionals within the learning environment are highly attuned to the learners' motivations and the key role of emotions in achievement'
4. Recognising individual differences—'the learning environment is acutely sensitive to the individual differences among the learners in it, including their prior knowledge'
5. Stretching all learners—'the learning environment devises programmes that demand hard work and challenge without excessive overload'
6. Assessment for learning—'the learning environment operates with clarity of expectations and deploys assessment strategies consistent with these expectations; there is strong emphasis on formative feedback to support learning'

7. Building horizontal connections—'the learning environment strongly promotes "horizontal connectedness" across areas of knowledge and subjects as well as to the community and the wider world' (pp. 22-26).

These principles are supported by understanding the types of learning that are being aimed for, leveraging specific facilitating factors and mitigating specific inhibiting factors, and shifting the focus from instruction or teaching-centred to learning-centred. As promoted by the integration of the interviewees' commentary in this study and the literature, tertiary educators can enhance learning by developing four key areas of expertise:

1. Human change expertise
2. Learning expertise
3. Content expertise
4. Learning activities expertise.

These form a potent combination to address the needs of 21st century learning (Parsell & Chinchen, 2019).

6.7 Chapter summary

This chapter offered a deeper analysis of the phenomenographic findings and the extended findings from this study. These findings offer new insights into learning from the educators' perspectives. When asked for observations of learning in a professional context, interviewees mostly talked about teaching instead of learning. This contrasted with their response to an equivalent question in a personal context which drew responses centred on learning itself. This narrowed focus on teaching practices, and absence of focus on learning itself in the professional context, highlights that moving beyond content-focused, transfer of knowledge approaches to learning in tertiary education is no trivial task. While the tertiary educators interviewed for this study clearly saw their personal learning as an ongoing, engaging, active, and adaptive process, they reported that the tertiary institutions in which they work demand success in ensuring competency (VET) and intended learning outcomes (HE), most of which are seen as more easily achieved through approaches to learning involving subservient student compliance and recitation of content. These institutions similarly face the demands of meeting accreditation and other regulatory requirements, which equally may be more easily satisfied through compliance approaches. These demands focus on meeting measurable outcomes which may conflict with what is required for adaptive learning to occur. Whilst this conflict may be an unintended outcome of the expectations associated with regulations, it potentially impacts on the way that tertiary educators undertake their work. It may require these tertiary educators to adopt lecturer-centred, compliance-based, transmission oriented approaches. Mathieson (2015), amongst others in the educational literature, queries whether these

approaches actually lead to learning. From this perspective, it could be reasonably argued that tertiary education institutions are out of step with current educational theory. There appears to be a gap between the theory espoused by researchers and practitioners versus the practical pressures and structural restraints that educators are required to follow.

Bateson (1972) distinguished between three levels of learning. Level I refers to the acquisition of the "authorised conceptions" (P. Ashworth & Lucas, 1998, p. 428). Bateson argued that Learning I is accompanied by Learning II where, through strategies such as observation and social learning, context-specific deep-seated rules and patterns of behaviour are grasped. In other words, the processes of learning impacts the way we see, anticipate, experience, and behave in the world. The potential from these two levels of learning is to see the world through a compliance lens. There is an authorised way of being in the world, predictable processes that can be applied to ourselves and others in our world, and following established norms of practice is expected. These ideas form the basis of compliance learning which is useful in stable, known, predictable, and unambiguous situations. However, Robinson (2011) argued that "we are living in a world that is changing faster than ever and facing challenges that are unprecedented. How the complexities of the future will play out in practice is all but unknowable" (p. 2). Perhaps we might more effectively see ourselves as in Bateson's Learning III which he suggests begins with radical questioning of the context and moves towards an alternative that is broader, more flexibly responsive, and involves a collective endeavour. While Bateson suggested that the changes resulting from Learning III are so profound that they happen in psychotherapy or religious conversion, I would argue they may also arise from the action people may individually and collectively take in order to decrease dissonance they experience. The knowledge utilised in such situations is intuitively led, non-reactive 'gut' knowledge that arises from the individual's reality rather than from formal instruction, discipline knowledge, or authorised ways of being (Cakir, 2008). In this way, concepts are led by insight, rather than sight being led by concepts. Perhaps this is what the tertiary educators were expressing in their frustration and tension between the demands of overcrowded curriculums and teaching requirements that push them into outdated models of teaching which leave little room for intuitive insight.

Chapter 7 (Applying study outcomes to learning in tertiary education) takes a wide view of how these findings can assist tertiary educators in their work.

7 Applying study outcomes to learning in tertiary education

Learning is a concept of many meanings and definitions, and represents a complex phenomenon that is experienced and understood in various convergent and divergent ways. The focus of this study was on gathering experiences and understandings of learning to identify patterns in both the experienced and abstract representation of learning in words, models, and other symbols. Interviewees, during their interviews, used other symbols to communicate, such as mind maps, diagrams, arrows, and a tattoo. The central focus of attention in this study was tertiary educators' experiences and understandings of learning, and yet these experiences and understandings fit in a wider context which needs to be considered and examined. This inquiry demanded an in-depth understanding of the relevant literature on learning. The tertiary education context in which learning occurs was also a focus of this search for in-depth understanding. Previous phenomenographic studies on learning and the qualitatively different ways that tertiary educators have experienced and understood learning were analysed and then compared against the findings from this study. The application of insights to both the current and potential future tertiary education sector were explored in the previous chapter and is continued in this chapter.

This chapter provides an overview of each chapter in this study and their contribution to understanding learning in tertiary education (section 7.1—Chapters and their contributions). The chapter then revisits the key research question and the aims of the study (section 7.2—The purpose of this study). A summary of the contributions of this study to learning in tertiary education (section 7.3—Contribution to learning in tertiary education) and a summary of the contributions of this study to phenomenography (section 7.4—Contribution to phenomenography) follow and the limitations of this study are discussed (section 7.5—Limitations of this study). Recommendations for further study and other recommendations are then presented (section 7.6—Recommendations). The final section in this chapter concludes the study with some final thoughts on learning in tertiary education (section 7.7—Study conclusion).

7.1 Chapters and their contributions

Researching learning is as complex as the phenomenon itself. The first three chapters of this study set the scene for the phenomenographic interviews.

Chapter 1 (Learning and tertiary educators) provided an overview of the study and its setting. Chapter 2 (Context of the tertiary educator in Australia) highlighted that tertiary education itself has been engaged in major changes since the late 1980s. Educators within tertiary educational institutions have often been at the forefront of implementing these changes. The structural, political, and regulatory environment in which tertiary education exists has significantly impacted the work of tertiary educators. So too has the demand for approaches to learning that integrate responses to the needs of 21st century learners. These demands have been articulated through policy changes and also a significant body of literature related to learning. Chapter 3 (Critical analysis of relevant learning literature) highlighted the difficulties in moving beyond ontological and epistemological rigidities that maintain competition and confusion as central features of the learning literature. This does not assist for cogent and clear understanding of the phenomenon of learning.

Having established the setting for the study, its design and theoretical underpinnings were explored in some depth (Chapter 4—Design and theoretical underpinnings of this study). An alignment between the ontology, epistemology, methodology, and methods was articulated. This laid the foundations for the exploration of learning directly with the tertiary educators. The findings were presented phenomenographically, although there was some variation with the traditional way other phenomenographic studies have presented their findings (Chapter 5—Tertiary educators' experiences of learning). The major findings (Chapter 6—Linking tertiary educators' experiences of learning to theory and context) highlighted a major merging between learning and teaching when the educators were in their professional roles. However, when reflecting on their personal learning the emphasis was on engaged and affectively driven learning. Analysis of the findings led into a deeper discussion of the major finding of the study: tertiary educators are essentially specialist change leaders who focus their efforts on change through learning. In order to be most effective in this role, tertiary educators need both a sophisticated understanding of human change and learning processes. Bringing the study to a conclusion is focused upon in the remainder of this chapter.

7.2 The purpose of this study

This study explored learning from the tertiary educators' perspectives, and aimed to answer the key research question that emerged from the literature review:

> *What are the qualitatively different ways in which tertiary educators have experienced the phenomenon of learning?*

This study had two aims. The first aim was to capture the qualitatively different ways that tertiary educators have experienced learning as professional educators, learners, and mentors.

The second aim was to identify the implications of the findings from this study for the theory and practice of learning in tertiary education in Australia and beyond. Both of these aims were achieved.

Several objectives for this study supported the study aims. The first was to capture the complexity of the learning literature relevant to the study. This led to the view that there is a need to move beyond narrow paradigmatic restraints of learning theories into a broader, more flexible and more critical view of learning. This broader view challenges core assumptions about how, when, and why learners learn. It incorporates a pragmatic response to the current social, political, and economic demands within tertiary education.

The second objective which arose was to apply a research methodology, in this case phenomenography, in a new and unique way in order to gain new insights into the phenomenon of learning and how it is experienced and understood, to extend the application of the methodology. The outcome was worth the risk of deviating from the way phenomenographic questions are constructed. The reward was new ways of understanding learning in tertiary education. The third objective which arose was to seek practical changes that could enhance tertiary education in the 21st century. This study laid the foundations for a number of possibilities in this regard.

These objectives are now discussed in terms of the contributions this study has made to both learning in tertiary education, and to phenomenography.

7.3 Contribution to learning in tertiary education

This study sought to expand our understanding of learning through accessing and analysing the experiential insights of tertiary educators. Tertiary educators play a central role in adult learning. They are well placed to provide observations of learning both through their active assistance in the learning experiences of others as well as through their own learning experiences. Accordingly, this study sought to access, compare and analyse what these tertiary educators had noticed about learning in their role as professional educators and in their role as learners. Tertiary educators' observations of facilitating and inhibiting factors in learning in these roles were similarly captured for analysis. Again, tertiary educators are well placed to observe the influence of these factors as they occurred in practice.

Interestingly, interviewed tertiary educators described the nature and characteristics of learning in qualitatively different ways depending upon whether they were describing their own learning, or the learning of others they were seeking to assist in a tertiary education setting. This is a significant finding as it highlights that tertiary educators are not harnessing

the insights into their own learning when undertaking their role as a professional educator. These differences may be attributed to variations in what is dominantly sought and valued by learners in these learning settings. Interviewees' descriptions of their own learning suggest that the changes most valued were grounded transformations in ways of experiencing and understanding their worlds. These transformations go beyond the acquisition of concepts, models, facts and beliefs, as they foster construction of previously undefined and unintended learning relationships. In contrast, the changes most focused on in their professional educator role tended to more narrowly relate to learner success in assessment tasks focused on defined and intended measurable competencies and learning objectives. One way of conceiving and explaining these contrasts might be related to differentials in valuing adaptive learning versus compliance learning. Another way of conceiving these contrasts is related to different levels of intrinsic motivation—learning for the intrinsic satisfaction of deeper understanding—versus extrinsic motivation—such as learning to obtain a qualification, with the opportunities that qualification may provide.

The literature review undertaken for this study highlighted some significant discrepancies in both beliefs and actions between theory espoused in learning literature and the learning theory-in-use of many educators in the tertiary institutions in which they work. This is of concern and implies a currently missed opportunity for increased professionalism going forward in the 21st century as it shows a misalignment between theory and practice within tertiary education. It suggests a lack of educator engagement with, and associated translation into practice of, current learning research. This may not be entirely surprising given a lack of overt standards for expertise, continuing professional development, or qualifications in learning laid down by TEQSA or ASQA.[15]

This study repositions human learning, rather than teaching, as the central purpose and focus of tertiary education. It places focus on this human learning being, at its core, a human change process. The implication is that tertiary educators, to be most effective, need to have expertise in both human learning and human change processes. Affective states, including felt congruence/disjuncture, motivation and sense of purpose shift from being peripheral to key factors sitting alongside educational content in this re-envisioning. This is a shift from

[15] ASQA do have standards requiring qualifications in teaching. However, firstly, there are deficiencies in enforcement of these ASQA standards, as evidenced by the biographical data on interviewees in this study, some of whom teach in VET and yet do not have these qualifications. Secondly, a review of these qualifications conducted in this study showed a lack of focus on learning itself. Refer to section 2.2.3.4 The 21st century—*Regulatory expectations for tertiary educators* for further details.

traditional views of learning that positioned the educator role as expert gatekeeper of educational content. At its worst this traditional view fostered an arrogant educator-subservient learner relationship with compliance being the prime measure for success. The gatekeeper role is a poor fit for current circumstances, given the increasing rapidity of change, the increased need for adaptive learning, and the immediate and widespread dispersal of expert content that has been facilitated by the internet. As a result, the content role of educators is now better seen as one of curation. The opportunity for educators to improve educational outcomes lies not so much in increased content expertise, but in developing expertise in human learning and human change processes.

Alongside the expansion of focus beyond educational content, the learning literature has been progressively shifting primary focus from teaching and teaching activities to learning design and learning activities. Over time the language describing educational activities has progressively shifted from 'teaching' to 'teaching and learning', then most recently to 'learning and teaching'. This shift reflects an increasing emphasis of focus on learning, with a corresponding reduction of focus on teaching. The logical next step in centralisation of focus on learning is to talk of educational activities as 'learning activities', and educational institutions as 'learning institutions'. However, the nomenclature and language within the regulatory bodies' regulations has lagged behind this trend, reinforcing both the educational institutions' and tertiary educators' continuing centralisation of goal focus on teaching. This focus is out of step with what is commonly seen as required in the 21st century as adaptive learning that is both lifelong, *through* life, and lifewide, *for* life (Stine-Morrow & Payne, 2015; Tennant, 2009; Yang et al., 2015). While conveying content continues to have a place, it is no longer the central concern in learning processes as currency and capacity of learners to locate, analyse, construct, integrate and adapt are gaining progressively more importance in times of rapid change.

For tertiary educators to meaningfully contribute to the learning of others, expertise in human change, learning, content, and learning activities will enhance learning in the 21st century (Parsell & Chinchen, 2019). This requires dealing with their professional identity as well as underlying beliefs about learning and teaching.

7.4 Contribution to phenomenography

Phenomenography proved to be an appropriate and insight-stimulating way of exploring the phenomenon of learning from the educators' perspectives. It is a useful methodology to identify variations in the way people experience and understand a particular phenomenon. Dominant discourses and methodologies often propose convergent answers to complex issues dependent upon implicit and unquestioned assumptions. Phenomenography in contrast can draw our attention to subjugated and divergent stories which may lie hidden below the surface of variable experiences and understanding. The contribution of this study to phenomenography included, but also moved beyond, addressing some of the gaps that previously existed in those phenomenographic studies on learning.

One implicit assumption underlying prior phenomenographic studies is that all forms of meaning-making need only be grouped together under a single type for the purposes of data collection and analysis. This study extends the power and reach of phenomenography more generally by directly challenging and dismantling this assumption. The structure and focus of the questions in this study rectified the conflation in prior studies of all forms of meaning-making into a single entity, typically called 'conceptions'. Through focusing on what tertiary educators had noticed about learning, attention was placed on the sensory, affective, motivational and experiential aspects of meaning-making, which extend beyond mere abstract conception, and are of a functionally distinct type.

Traditional education has been built on the assumption that we are rational beings with some limited capability for emotion. Education in this case would be the simple delivery of reasonable facts, concepts, evidence, beliefs and methods, in line with traditional education techniques. Emotion under this assumption are likely to be seen as a barrier to learning. It is arguable that the exact opposite may be more fitting – that we humans may be more pragmatically seen as emotional beings with some limited capability for rationality. Education under this assumption starts with engagement of human affect, focuses on experience, and uses rationality as a tool of education rather than as the ultimate outcome. In this study, the choice to seek what educators had 'noticed' about learning, rather than 'conceived' about learning, is overtly deliberate and is consistent with this challenge to the underlying nature of human existence and meaning-making.

In order to discuss these issues we do need to engage concepts, given that language sits in the conceptual realm. Concepts are symbols or representations with words being the dominant means for their expression, embedding and empowerment. The distinction being drawn in this

approach to phenomenography within this study is that meanings can also be formed without concepts, and without words. Associative learning through operant and classical conditioning are examples of this. The classic example of "Little Albert" highlights a non-concept or non-word association. Ormrod (2016, p. 57) offered the following description of this experiment:

> Albert was an even-tempered, 11-month-old child who rarely cried or displayed fearful reactions. One day, Albert was shown a white rat. As he reached out and touched the rat, a large steel bar behind him was struck, producing a loud, unpleasant noise. Albert jumped, obviously upset by the startling noise. Nevertheless, he reached to touch the rat with his other hand, and the steel bar was struck once again. After five more pairings of the rat and the loud noise, Albert was truly rat-phobic: Whenever he saw the rat he cried hysterically and crawled away as quickly as he could.

Associations reside in the unconscious realm which is also known as system 1 (Kahneman, 2013). These associations often drive our behaviour and responses in the learning environment. Concepts, when grounded in this experiential world of associations, may be seen as truly powerful. The need to bring intuitive meanings to the surface and to integrate and align them with conceptual meanings may be seen as central to powerful learning.

The first four interview questions in this study drew interviewees into their experiential realm rather than their conceptual realm. The fifth and final interview question was conceptual in nature (*What is learning?*). However, it intentionally sought grounding of these conceptual answers in what had been experientially noticed by the educators. This was achieved both through direct priming as to the nature of responses sought, as well as though contextual priming through its placement after the first four experiential questions. This technique may point to a way for future studies wishing to integrate conceptual and experiential understanding.

Another variation in this study from the traditional phenomenographic approach related to the analysis and presentation of results. In traditional phenomenographic studies outcome spaces have been represented by sequential hierarchies. Typically these hierarchies move from fragmented to increasingly cohesive categories. In this study the categories were seen simply as distinct, qualitatively different ways of experiencing and understanding the phenomenon, yet not necessarily inferior nor superior to each other, nor necessarily more fragmented nor cohesive than each other. It was felt that to impose hierarchies on these categories would have been contrived and unjustified, despite some patterns being evident. Accordingly, circular figures rather than linear hierarchies were chosen to reflect the relationship between these categories. This means of representing relationships between hierarchies, when it fits, may have wider applicability within future phenomenographic studies.

Several gaps in the phenomenographic research literature were addressed by this study. While educators had been asked about student learning in prior phenomenographic studies, they had not been asked about what they had noticed about learning in the role of professional educator. Similarly, prior phenomenographic studies had not sought what educators had noticed about learning in the role of learner. No previous phenomenographic studies had focused on facilitating and inhibiting factors in learning identified by tertiary educators. This study asked the tertiary educators to identify these factors from both perspectives—in their role as a professional educator and also in their role as a learner. While mentoring is a commonly discussed phenomenon in educational literature, it had not been addressed directly in prior phenomenographic studies, and this study addressed that gap. An important aspect of tertiary education is mentoring. Mentoring is a relatively common form of orientation and induction for the next generation of tertiary educators. Therefore, what the current generation of tertiary educators would say about learning to the next generation is a crucial aspect in the creation of a future learning culture.

Simple replication of previous phenomenographic methodologies would not have extended phenomenography in any meaningful way. The variations in application of the phenomenographic methodology shown in this study may encourage these methodologies to be replicated, extended and/or developed in future phenomenographic applications.

7.5 Limitations of this study

Two potential limitations exist with this study. The first relates to the size of the sample. As is often the case in qualitative research, the sample is purposive yet small. This raises the question of how indicative the findings may be. While this is ameliorated to some degree by the fact that the results align with both the findings of many other researchers mentioned in the literature and my professional experience over an extensive period of time. However, it is useful to still note this issue. The second relates to being a solo phenomenographer. As with any research project, especially one that involves iterative data analysis such as this study, it is ideal to have other co-researchers involved in the analysis of findings. One method commonly used in phenomenography to reduce the likelihood of subjective bias is to have multiple investigators working together analysing data using iterative data analysis (Bowden, 2005). The requirements of the PhD meant that analysis of data had to be completed by myself. I maintained interpretive awareness and maximum fidelity to the data (Sandbergh, 1997). I am very used to bracketing my own conceptions, beliefs, and emotions in my work as a counsellor. However, multiple investigators may have reduced the possibility of my existing knowledge

and experience and unconscious interpretations as a tertiary educator biasing the data analysis.

7.6 Recommendations

Several key recommendations arise from this study. These recommendations are founded on the view that the greatest improvement in learning outcomes will not arise from increases in existing levels of educator content expertise, nor teaching strategy expertise, nor delivery methods, nor even in educational funding. Instead, the greatest opportunities for improvement in learning are seen to arise through increasing expertise in deeply understanding learning itself in its various forms.

7.6.1 Recommendations for further study

1. Extend phenomenography through the novel method of inquiry used in this study, which overtly targeted raw data grounded in personal experiential observations of aspects of phenomena, as distinct from their summarised, conceptual counterparts.

2. Extend phenomenography through the novel method of analysis used in this study, which selected categories to describe different ways of experiencing and understanding phenomena without regard to any hierarchical interrelationships.

3. Repeat this phenomenographic study in different contexts, settings and/or interviewee groups to identify and analyse commonalities and distinctions in findings and conclusions.

4. Apply non-phenomenographic research methods and approaches to extend or quantify the specific findings of this study.

5. Develop the theory and practice of education in ways which focus on re-envisioning educator and learner roles and identities, and on an in-depth understanding of human learning and human change processes. This can be advanced at the level of the individual educator, the researcher and research publisher, the educational institution, and the regulatory bodies.

7.6.2 Other recommendations

6. Develop ways in which academic development can support the transition to learning-centred focus. This may include systematic assessment of how learning-centred academic development impacts on learners, educators and their professional identity over time, and on identification and leverage of successful learning-centred academic development strategies and exemplars.

7. Convert conceptions of learning and teaching from phenomenographic studies into an observational-grounded survey tool to enable individual educators, educational institutions,

and the education sector, to gain a snapshot of relative diversity of educator ways of understanding and experiencing learning.

8. Utilise results from the survey tool to aid educator professional development, and to assess/justify the need for a recognised and endorsed requirement for educators to undertake studies in learning before or alongside their engagement in learning and teaching activities.

7.7 Study conclusion

The study concludes with the key finding that if tertiary educators are to provide quality learning experiences which move beyond content transmission, they need to have a sophisticated understanding of both human change processes and learning itself. These two areas of required tertiary educator expertise are central to the movement to learning-centred education. They are best supplemented with educator content expertise and expertise in learning activities, which might be more traditionally associated with teacher-centred education.

Effective education involves engaging with the meta-awareness, motivations, prior knowledge and understanding, and capabilities of learners (Ausubel, Novak, & Hanesian, 1978). This requires an appreciation of the whole learner including their affective states, beliefs and variable and contextual differences (Cotterall, 2013; Damasio & Carvalho, 2013; Immordino-Yang & Damasio, 2011). This requires, as Magolda (2014) identified, awareness of and engagement with "cognitive, intrapersonal, and interpersonal capacities" (p. 9). An effective response to learning difficulties (Bellert & Graham, 2017; Vogel & Schwabe, 2016) may be critical to educational success of a large proportion of students. Allocating attention and time to those areas which make a valuable contribution to learning is vital (Hattie, 2009, 2015; Lodge & Horvath, 2017). In particular attention needs to be focused on promoting active engagement (Biggs, 2012). The need to respond to increasing rates of change demands attention being placed on developing adaptive and flexible learning that values currency, collaboration, and knowledge sharing that can facilitate the integration of learning in tertiary education into the real and ever-changing world in which all learners reside (Davis, Evans, & Hickey, 2006; Evans-Greenwood et al., 2015; Evans, 2005; Siemens, 2005). Lifelong learners require work-life learning that is authentic (Asikainen, Virtanen, Parpala, & Lindblom-Ylänne, 2013; Westera, 2011), builds both competence and capability (Blaschke, 2012; Halsall et al., 2016; Hase, 2011; Hase & Kenyon, 2001), and is research-informed and avoids enacting intuitive approaches only (Weinstein et al., 2019). It requires critical analysis to avoid being misled by common educational myths lacking in foundation, such as has occurred through

distortion and overreach of neuroscientific findings. (Dekker et al., 2012; Howard-Jones, 2014; Sousa, 2017).

On review of the extensive literature related to tertiary education, the findings from this study, and my own lived experiences in tertiary education, it seems that tertiary education is currently in "indeterminate, swampy zones of practice that lie beyond its canons" (Schön, 1987, p. 3). Tertiary education no longer sits comfortably in well-established models of transmission with their associated focus on content, often accompanied by an unchallenged belief in known truths, associated dismissal of the value of different perspectives, and absence of critical inquiry. Prevailing social, political, and economic changes demand adaption of tertiary education. Krause (2012) discusses the intersection of the macro level of policy and the micro level of life within tertiary institution in her article on quality in higher education. She defines the issue of quality as a wicked problem, that is, a problem that is:

> ill-defined, views on possible solutions vary widely across diverse parties with a vested interest in the problems and how to address them, the problems change in scope and nature on a daily basis and according to the setting in which they are addressed and today's apparent solution is no guarantee of tomorrow's success (p. 286).

Wicked problems are "swampy zones of practice" and require looking beyond the established canons to collaborative and innovative ways of responding. Briggs (2007) argued that "the handling of wicked problems requires holistic rather than linear thinking" (n.p.).

Cherry (2005) argued that we need to work in the "white spaces" which form the blanks between the lines of known text. This allows us to see the assumptions of the fundamental paradigms, bring multidisciplinary perspectives, and invent new ways of addressing the issues we face. The key issue this study has identified is the dilemma tertiary educational institutions and the tertiary educators within them currently face: focusing our efforts on preparing ourselves and others, through reflexive dialogue which connects tacit knowing and explicit knowledge, so that become part of learning processes that are characterised by "resilience, energy, intellect, emotional intelligence, courage and imagination ... and to remain optimistically confused" (Cherry, 2005, p. 319). Focusing on what educators know and their abstract conceptualisations emphasises where the educator is, and not where the learner may be (A. Y. Kolb & Kolb, 2018). This teacher-centric stance is a common characteristic of teaching-centred education. This focus has been more recently referred to as intellectual arrogance and fosters servile learners (Church & Samuelson, 2017). These authors promote intellectual humility which places the learner in an empowered and collaborative position in relation to the educator. This power shift is echoed by (Weimer, 2003) as she advocates for the

shift from teaching focus to learning focus. Emphasising the importance of learning, beginning with a more sophisticated understanding of what this phenomenon entails, is a step towards this endeavour.

Tertiary educators in the 21st century need to refocus from transmission and teaching to learning (Barr & Tagg, 1995; Weimer, 2003). Learning is the most important 21st century skill (Kuhn, 2016). This transition is not necessarily easy to achieve as "constructing learning partnerships requires unlearning our socialization as authority figures" (Magolda, 2014, p. 9). Robinson (2011) argued that this requires a movement away from the "linearity . . . [where] each stage is meant to build logically on the one that precedes it [and where] overall outcomes can be predicted with reasonable reliability" (p. 57). Instead of this linear approach that replicates an assembly-line in a factory, we need to see learning as more akin to interweaved and constructed patterns. In order to create these patterns, as the tertiary educators in this study identified, curation of learning is required where traditional roles of teacher and learner are replaced with more egalitarian, interactive, and mutual learning. Tertiary educators, in this approach, can become learning specialist who continually ask themselves the key question:

How does what I am doing contribute to learning?

This question replicates the focus of many educational researchers in the 21st century who have individually and collectively argued that the fundamental purpose for tertiary educators who engage with learners is to foster their art of learning (Hase & Kenyon, 2003; Laurillard, 2012; Ramsden, 2003). This art of learning involves far more than simply remembering content. This purpose can be enhanced by a sophisticated understanding of learning and how it occurs. It commences with reflection on our own understanding. As Wenger (2009, p. 214) argued, "If we proceed without reflecting on our fundamental assumptions about the nature of learning, we run an increasing risk that our conceptions will have misleading ramifications". Reflection is a key process in transforming our experience into learning. Schön (1987) argued for reflection on action, which leads to retrospective learning (Beard & Wilson, 2006) and reflection in action which leads to concurrent learning (Beard & Wilson, 2006). We can also utilise our imaginations and create future scenarios and reflect on what they may be like and how they may be experienced. This leads to prospective learning (Beard & Wilson, 2006).

D. A. Kolb (2015) identified reflective observation as an important step in transforming experiences into learning. However, reflection alone is insufficient. D. A. Kolb (2015) argued that we need then to create our own abstract conceptualisations based on reflective observations on our experiences. We need to then engage in concrete experimentation,

commonly referred to as application, in order to test our abstract conceptualisations. More than this, we need to develop and leverage our open, abstractive and reflexive capabilities, and develop our divergent and qualitatively different ways of understanding phenomena, our critical inquiry, and our synthesis of abstract conceptions with embodied perceptions. This closely aligns with Lunn Brownlee et al. (2017) who argued that reflection is a component of reflexivity. However, reflexivity is "characterised by internal dialogue and deliberative action following reflective thought" (p. 247).

It is through the resolution of the dialectical tensions of prehension or grasping experience through both experience and abstract thought and transforming experience through reflection, reflexion and action (A. Y. Kolb & Kolb, 2018; D. A. Kolb, 2015) that we can engage in continuous loops of learning. This approach to learning replaces the overemphasis on fragile conceptual learning that has been characteristic of traditional tertiary education. In so doing, it focuses on the whole learner as a human with individual desires and affect—not simply a cognitive vessel to be filled with content. It creates adaptable and durable learning that meets our current and future needs.

This study reemphasises the importance of ongoing learning for all of us, no matter our role:

> No matter how old or how expert, we must now live a dual life; as an educator and as a learner, as it is now impossible to be one without the other (Treadwell, 2017, p. vi).

8 Glossary of terms

Term	Meaning in this thesis
Adaptive learning	Learning which is based on principles, analysis, and evaluation of information in order to complete a range of activities or apply solutions to primarily unpredictable and sometimes complex problems.
Adult education	Any form of education, formal or informal, that involves adults.
Andragogy	From the Greek: andró(s) (adult) + ágō (to lead) => andragogy (to lead an adult). This term is commonly used in tertiary education to reference the work of Malcolm Knowles in particular.
Australian Skills Quality Authority (ASQA)	The Australian regulator of the vocational education and training (VET) sector.
Australian Qualifications Framework (AQF)	The framework that provides authorised standards for all Australian qualifications.
Authentic learning	Learning which connects to real world issues, equips learners to deal with these issues, and reflects both complexity and ambiguity.
Blended learning	The combination of face-to-face and online learning in a unit of study.
Capability	Learner confidence in his or her competency, combined with the ethics and judgement to deal with the unfamiliar.
Collaborative learning	A form of group learning in which learners share authority, respect the abilities and contributions of others, and accept responsibility for the group's achievement of projects.
Commodification of education	The process whereby education becomes a commodity that can be bought and sold on the national or international market.
Competence	The proven ability in acquiring knowledge and skills.
Compliance learning	Learning which is based on following rules and accepted practice in order to complete routine activities or apply solutions to primarily predictable problems.
Confirmability	Minimising investigator bias by acknowledging the researcher's predispositions.
Credibility	The requirement of a study to measure what is intended and to be a true reflection of the social reality of the participants.
Democratisation	A process where access to higher education is viewed as an integral element in resolving social and economic inequalities present in societies.
Dependability	Describing the processes of research in sufficient detail to facilitate another research project to repeat the study.
Distance learning	Learning that is facilitated over a distance via hard copy materials.
Educator	Any person formally recognised as being responsible for the educational activities in a given situation, including

Term	Meaning in this thesis
	those known as teachers, tutors, lecturers, trainers, assessors, and so on. The role of the educator is to engage in systematic learning design so as to promote learning.
E-learning	Learning that utilises the internet to provide learning materials and educational experiences. Also known as online learning.
Engagement	The degree of attention, curiosity, interest, optimism, and passion that learners hold towards their learning.
Epistemology	The study of the nature of knowledge.
Experiential learning	Learning which evolves from our experiences. In tertiary education, this approach is most associated with the work of Kolb.
Face-to-face	Learning that involves face-to-face engagement between learners and educators.
Formal learning	Learning which is focused on intended outcomes and often results in qualifications.
Heutagogy	From the Greek: eaftós (oneself) + ágō (to lead) => heutagogy (to lead oneself). This term in tertiary education is often used interchangeably with self-directed learning.
Higher education (HE)	Formal education that is post-compulsory education and provided by accredited universities, colleges, institutes, and schools who are authorised to provide HE education; usually level 5-10 of the AQF.
Higher education standards framework (HESF)	The regulatory framework of standards to which higher education providers need to adhere.
Human learning	Learning related to humans and not animals, artificial intelligence, robotics, or the like.
Incidental learning	Learning which occurs without a specific intention. Also known as unintended learning.
Informal learning	Learning that is not externally defined and directed.
Intended learning	Learning that is defined and directed by an educational body.
Learner	Any person engaged in the learning process.
Learning	The process by which we adapt to the ongoing certainty of contextual variation, change, and challenge.
Learning-centred	Primary focus on the object of learning rather than the process of teaching.
Learner-centred	A form of teaching in which the teacher focuses on encouraging learners to discover and construct their knowledge. This approach focuses on changing learners' way of thinking or worldview. Also known as student-centred.
Learning theories	A variety of theories aimed at explaining how people learn.
Lifelong learning	Learning throughout the lifespan, often expressed as 'cradle to grave' learning.
Lifewide learning	Learning for all areas of life.

Term	Meaning in this thesis
Massification	The term used to describe the rapid increase in student enrolment that was witnessed towards the end of the twentieth century.
Methodology	The strategy applied to answer the research question.
Methods	The techniques used to gather and analyse data.
Mixed mode	Undertaking study with a combination of face-to-face or blended learning, as well as fully online learning.
Ontology	The study of the nature of existence and of what is considered 'real'.
Online learning	Learning that utilises the internet to provide learning materials and educational experiences. Also known as e-learning.
Outcome space	The minimum number of structurally-related categories of description required to describe the different aspects of an experienced phenomenon and the relationships between them.
Pedagogy	From the Greek: ped (child) + ágō (to lead) => pedagogy (to lead a child). This term is commonly used in tertiary education to refer to learning and teaching activities.
Personalised learning	Learning based on the distinct learning needs, interests, aspirations, and/or cultural background of the learner.
Phenomenography	A research approach that aims to capture and analyse qualitatively different understandings and experiences of a phenomenon.
Research design	The design of research including ontology, epistemology, methodology, and methods.
Research setting	The setting in which research occurs.
Scaffolding	The provision of adequate support to promote learning.
Self-directed learning	An approach to learning that is controlled by the learner. An individual predisposition toward and comfort with autonomy in the learning process.
Student-centred	A form of teaching in which the teacher focuses on encouraging students to discover and construct their knowledge. This approach focuses on changing students' way of thinking or worldview. Also known as learner-centred.
Teacher-centred	A form of teaching in which the teacher determines the content, processes, and outcomes of the learning. This approach focuses on transmitting information to students.
Teaching-centred	Primary focus on the process of teaching rather than the object of learning.
Teaching and learning regimes	A shorthand term that describes the largely unconscious, tacit, and unidentified rules, assumptions, practices, and associations which inform teaching and learning activities.
Tertiary education	Formal education undertaken in either the vocational education and training (VET) or higher education (HE)

Term	Meaning in this thesis
	sectors within Australia that meet the requirements of the AQF.
Tertiary Education Quality and Standards Agency (TEQSA)	The Australian regulator for the higher education sector.
Transferability	The ability of findings from a research study to be transferred to other contexts or settings.
Unintended learning	Learning which occurs without a specific intention. Also known as incidental learning.
Vocational education and training (VET)	Formal education that is post-compulsory education and provided by Registered Training Organisations (RTOs) such as colleges, institutes, and schools who are authorised to provide VET education; usually level 1-6 of the AQF.

9 Appendices

Appendix A: Phenomenographic studies on learning approaches and learning outcomes

Author/s	Study
Säljö (1981)	Learning approach and outcome - Some empirical observations
Säljö (1979b)	Learning in the learner's perspective. II. Differences in awareness
Marton (1975)	What does it take to learn
Marton and Säljö (1976a)	On qualitative difference in learning. I - Outcome and process
Marton and Säljö (1976b)	On qualitative difference in learning- II. Outcomes as a function of the learner's conception of the task
Extended beyond surface/deep	
Diehm and Lupton (2012)	Approaches to learning information literacy: A phenomenographic study
Iyer and Roberts (2014)	A phenomenographic study in understanding architecture students' approaches to learning the coursework of architectural design
Edström, Wilhemsson-Macleod, Berggren, Josephson, and Wahlgren (2015)	A phenomenographic study of students' conception of learning for a written examination
S. Bailey (2002)	Student approaches to learning in fashion design: a phenomenographic study
Woollacott, Booth, and Cameron (2014)	Knowing your students in large diverse classes: A phenomenographic case study
Complexity of factors	
Lonka and Lindblom-Ylänne (1996)	Epistemologies, conceptions of learning, and study practices in medicine and psychology
Entwistle and Peterson (2004)	Conceptions of learning and knowledge in higher education: Relationships with study behaviour and influences of learning environments
Abhayawansa and Fonseca (2010)	Conceptions of learning and approaches to learning - A phenomenographic study of a group of overseas accounting students from Sri Lanka
Light and Calkins (2014)	The experience of academic learning: Uneven conceptions of learning across research and teaching

Appendix B: Phenomenographic studies in education not solely focused on learning

Author/s	Study
Conceptions of teaching and teacher development	
Åkerlind (2003)	Growing and developing as a university teacher - Variation in meaning
Lister et al. (2007)	Differing ways that computing academics understand teaching
Martin, Prosser, Trigwell, Ramsden, & Benjamin (2000)	What university teachers teach and how they teach it
Samuelowicz (1994)	Teaching conceptions and teaching practice: A case of assessment
Samuelowicz (1999)	Academics' educational beliefs and teaching practices
Samuelowicz & Bain (1992)	Conceptions of teaching held by academic teachers
Samuelowicz & Bain (2001)	Revisiting academics' beliefs about teaching and learning
Trigwell, Prosser, & Waterhouse (1999)	Relations between teachers' approaches to teaching and students' approaches to learning
Parpala and Lindblom-Ylänne (2007)	University teachers' conceptions of good teaching in the units of high-quality education
Shreeve (2010)	A phenomenographic study of the relationship between professional practice and teaching your practice to others
Åkerlind (2005a)	Academic growth and development - How do university academics experience it
Wang (2007)	Understanding Chinese educational leaders' conceptions in an international education context
Different instructional methods for learning	
Hodgson & Shah (2017)	A phenomenographic study of lecturers' conceptions of using learning technology in a Pakistani context
Bliuc, Casey, Bachfischer, Goodyear, & Ellis (2012)	Blended learning in vocational education: Teachers' conceptions of blended learning and their approaches to teaching and design
Ellis, Steed, & Applebee (2006)	Blended learning in vocational education: Teachers' conceptions of blended learning and their approaches to teaching and design
Olsson (2011)	Lecturers' conception of learning and use of methods in blended learning courses at three Swedish universities
Cutajar (2017)	The student experience of learning using networked technologies: An emergent progression of expanding awareness
Booth and Ingerman (2008)	Phenomenographic perspectives on the learning experience and process in higher education physics
Stein, Shephard, and Harris (2011)	Conceptions of e-learning and professional development for e-learning held by tertiary educators in New Zealand
Khan and Markauskaite (2017)	Approaches to ICT-enhanced teaching in technical and vocational education: A phenomenographic perspective
Souleles, Savva, Watters, Annesley, & Bull (2015)	A phenomenographic investigation on the use of iPads among undergraduate art and design students
Parisio (2010)	University teachers' conceptions of learning through online discussion
Parisio (2011)	Engaging students in learning through online discussion: A phenomenographic study
Subject-specific studies	
Crawford, Gordon, Nicholas, and Prosser (1998)	University mathematics students' conceptions of mathematics
Minasian-Batmanian, Lingard, and Prosser (2006)	Variation in student reflections on their conceptions of and approaches to learning biochemistry in a first-year health sciences' service subject

Author/s	Study
Lin and Niu (2011)	A phenomenographic approach for exploring learning marketing conceptions of undergraduate students
Polat (2013)	Experiencing language: Phenomenography and second language acquisition
Related to an aspect of study	
Assan (2014)	Work integrated learning (WIL): A phenomenographic study of student-teachers' experiences
Rovio-Johansson (2018)	Experiences of practice-based learning in phenomenographic perspective
McLean, Bond, and Nicholson (2015)	An anatomy of feedback: A phenomenographic investigation of undergraduate students' conceptions of feedback
Conceptions of ethics	
Reid, Taylor, & Petocz (2011)	Business as usual: Business students' conceptions of ethics
Activities beyond teaching	
Wright, Murray, & Geale (2007)	A phenomenographic study of what it means to supervise doctoral students
Argyris & Schön (1974)	Theory in practice: Increasing professional effectiveness
Other activities	
Fraser & Bosanquet (2006)	The curriculum? That's just a unit outline, isn't it?
Åkerlind (2005c)	Ways of experiencing being a university researcher
Bowden, Green, Barnacle, Cherry, & Usher (2005)	Academics' ways of understanding success in research activities
Brew (2010)	Conceptions of research: A phenomenographic study
Ferris (1994)	Searching for conceptions of quality in student learning in TAFE
Mbabazi, Fejes, & Dahlgren (2013)	A phenomenographic study of students' conceptions of quality in learning in higher education in Rwanda
Töytäri et al. (2016)	Higher education teachers' descriptions of their own learning: A large-scale study of Finnish Universities of Applied Sciences
Learning and teaching in nursing	
Sjöström and Dahlgren (2002)	Applying phenomenography in nursing research
Brammer (2006)	A phenomenographic study of registered nurses' understanding of their role in student learning - an Australian perspective
Nygren & Carlson (2017)	Preceptors' conceptions of a peer learning model: A phenomenographic study
Dupin, Larsson, Dariel, Debout, & Rothan-Tondeur (2015)	Conceptions of learning research: Variations amongst French and Swedish nurses. A phenomenographic study
Arvidsson & Franke (2013)	Nurses' various ways of conceiving their learning process as doctoral students: A phenomenographic study
Christiansen (2011)	Storytelling and professional learning: A phenomenographic study of students' experience of patient digital stories in nurse education

Appendix C: Phenomenographic studies beyond education

Author/s	Study
Röing & Sanner (2015)	A meta-ethnographic synthesis on phenomenographic studies of patients' experiences of chronic illness
Raty & Wilde-Larsson (2011)	Patients' perceptions of living with epilepsy: a phenomenographic study
Schröder, Wilde Larsson, & Ahlström (2007)	Next of kin's conceptions of the quality of care in the psychiatric setting: A phenomenographic study
Dunkin (2000)	Using phenomenography to study organisational change
M. Bailey (2015)	Professional development of HR practitioners - A phenomenographic study
Johns (2015)	Defining post-release 'success': Using assemblage and phenomenography to reveal difference and complexity in post-prison conceptions
McCosker (1994)	Phenomenographic interview applied to women and domestic violence - Potential conflict of interest
Soon & Barnard (2001)	A phenomenographic approach to examine the different ways HIV patients understand the experience of counselling

Appendix D: Phenomenographic studies solely focused on learning as a phenomenon

Author/s	Study
Asikainen, H., Virtanen, V., Parpala, A., & Lindblom-Ylänne, S. (2013)	Understanding the variation in bioscience students' conceptions of learning in the 21st century
Boulton-Lewis, G. M., Marton, F., Lewis, D., & Wilss, L. (2000)	Aboriginal and Torres Strait Islander university students' conceptions of formal learning and experiences of informal learning
Brownlee, J., Purdie, N., & Boulton-Lewis, G. M. (2003)	An investigation of student teachers' knowledge about their own learning
Bruce, C., & Gerber, R. (1995)	Towards university lecturers' conceptions of student learning
Dahlin, B., & Regmi, M. (1997)	Conceptions of learning among Nepalese students
Duarte, A. M. (2007)	Conceptions of learning and approaches to learning in Portuguese students
Eklund-Myrskog, G. (1998)	Students' conceptions of learning in different educational contexts
Marshall, D., Summer, M., & Woolnough, B. (1999)	Students' conceptions of learning in an engineering context
Marton, F., Dall'Alba, G., & Beaty, E. (1993)	Conceptions of learning
Paakkari, L., Tynjälä, P., & Kannas, L. (2011)	Critical aspects of student teachers' conceptions of learning
Säljö, R. (1979)	Learning in the learner's perspective. II. Differences in awareness
Zhao, X. (2017)	Qualitatively different ways of experiencing learning: A phenomenographic investigation of international economics and trade undergraduates' conceptions of learning in a Chinese-Australian cooperative programme

Appendix E: My lived experience in learning

Writing about my lived experience in learning helped in the important task of gaining sufficient self-awareness to bracket off my own experiences, and avoid merging my experience with that of the interviewees. The importance of this activity is discussed in more depth in section 4.2.4 (Preparing for data gathering and analysis). It also aimed to provide the reader with some insight into the way my understanding of learning formed and how it informed this study. I undertook studies in adult education whilst in my initial years of providing community and other education. So my career and experiences in learning had reflection on the experiential components complemented by the lens of theory.

The format for this section is a brief experiential vignette describing specific events or moments on my learning journey. These are then followed by an italicised principle about learning that arose from each experience. The principles often emerged from perceptions of situations. On further reflection, they transformed into conceptions that could be articulated beyond the intuitive experience. The ground-up experiences here are in sharp contrast to the top-down conceptions offered by others. While others' conceptions may inspire insight to inform, expand or enhance my ground-up principles, they do not hold as much durability until thoroughly grounded in my experience.

I have always been fascinated with how people learn and how they navigate their worlds. Overall, based on my observations, we often learn pre-consciously, like a preverbal child does, based on what we notice and its impact, rather than through concepts. Subsequently attaching words and concepts to what we have noticed can elucidate, as well as increase our conscious awareness and ability to communicate this experience. Depending on the stance of the learner, these words and concepts can be stimuli, or inhibitors, to looking at the world in different ways.

Noticed impact may be the most powerful and transformative driver of learning.

As a little child about 5 years old, I imitated nurses when giving my grandmother 'injections' and care for her ailing health. When visiting relatives in hospital, a regular event in my early childhood, I pretended to be a doctor and 'checked in' on the other patients in the ward. My empathy was already developing and I noticed I could get both information and a smile from even the grumpiest patient.

Learning can involve imitation.

Learning can be enhanced and empowered through empathy.

At school and sports I noticed I did things differently. For example, I learnt best when involved in group or paired discussions. I would chat to my opponent, as if old friends, at the same time as shooting goals in netball. My other teammates seemed to treat the opponents as enemies. Often my opponents would tell me why they found it hard to defend me as a goal shooter—handy information to act upon!

Learning can be enhanced and empowered by social and peer activities.

In adolescence, studying modern history offered a turning point in understanding my own learning. The study of Nazi Germany amazed me. How could people treat each other in that way? Why did good people do such horrible things? Why did the Jews seem to create such upset in the Third Reich? What would it be like to be stuck behind a wall like Ann Frank? Experientially stepping into the stories I read opened up a whole new world of engagement and discovery, even in this horrific scenario. My imagination ran wild with possibilities. My fear of the answers was overwhelmed by my curiosity. This curiosity led me to interview an Auschwitz survivor for my major History project.

Learning in its different forms may correlate with, operate in the context of, and evoke a variety of affects, such as fear, curiosity, and empathy.

Learning through experiences, whether direct or imagined, is powerful.

Around the same time as my History experience, when visiting a home for children with disabilities, I jumped in and enjoyed the experience. The children were mainly non-verbal, some had bodies that worked against them and made them wheelchair bound, some had unusual tics and movements, and some would run and embrace strangers and not let them go. Typical communication approaches were not useful. Interactions with children, their carer, and my teachers provided insights about other communication approaches. A new set of questions arose: How did these children learn to do things in their world? How did they interact with others? What would it be like to have a sibling or friend with one of the disabilities? I still ponder these things.

Learning involves tailoring approaches to suit the circumstance.

A fascination for learning and a continual interest in medical interventions had developed. Yet in school, becoming a doctor or medical specialist was my second career preference; consciously, my first was to be an educator. This passion for education was aimed at helping people who had significant challenges to overcome.

Learning is both powered and focused by passion.

Learning is most powerfully driven by the 'why' questions, such as 'why is this important? and 'why is this so?'

Since the early 1980s, I have worked as an adult educator. Working with people with intellectual, psychological, emotional, and other challenges reinforced that I was in the right profession to make the significant difference in peoples' lives that I had imagined. Community education or psychoeducation groups led to another key question: How can I reach people who have had such difficulties along the way that they have almost given up on being able to learn and have agency over their own lives?

Learning involves whole humans, their history, their circumstances, and ways to move forward.

These passions were more personally playing out in my role as a mother of three children under five years old. Although I had completed a three year qualification in personnel management, and always excelled in the psychology and training subjects, I wanted to learn more. I continued my studies whilst raising my children and working with many other people and their children. This helped develop expertise in juggling simultaneous demands—just like the many learners with whom I have worked.

Learning involves integration into the lives of adults who have other demands and responsibilities to manage.

My first two qualifications contained a focus on training and development. These were obtained through the vocational education and training (VET) sector. I then moved to higher education (HE) to obtain undergraduate qualifications in community education then adult education with a sub-major in applied psychology. These qualifications extended my understanding of the art and craft of adult education, now referred to as learning and teaching. Reflective approaches and group work were introduced in these undergraduate programs and became specialisations that I continue to develop.

Learning involves reflection before, during and after the learning event—sometimes it can also be prospective by imagining what could occur and reflecting on usefulness.

Learning can be assisted by creating safety and focus in the group of learners.

Professionally I was involved in both face-to-face education as well as distance education—at this time hardcopy study materials were mailed to students. In the 2001 I added online education. This offered the chance to apply the principles of adult education in developing new ways of utilising the Internet. Leading professional development for other educators became a focus. This often utilised a blended learning approach.

Learning can involve different delivery methods.

Researching change agent skills within post-graduate studies affected my vision of adult education in a major way. I realised on reflection that all learning involves change, that educators are fundamentally change agents, and that more durable and adaptive learning arises from this primary transformation focus than from a content focus. This study of change agent skills interwove with a Masters' thesis on stress and burnout in adult educators—providing insight into the ups and downs of being an adult educator in the late 1990s.

Learning is fundamentally a change process, involving changes of different importance and duration of impact.

Learning as a form of change can potentially be freeing and empowering, but also stressful for all involved.

Working with a variety of learners showed the strengths and flaws of theories about education. What I discovered was that the power was not in the theory; it was in tailored use of the theories to provide the best outcomes for the learners with whom I worked.

Learning involves pragmatism, tailoring, and the use of best practice principles.

I observed that the special needs of those with a variety of learning difficulties—intellectual, cognitive, affective, social—were not well catered for in tertiary education institutions. 'Reasonable adjustments' was the legislative language that emerged for education institutions and involved adaptation of practices for those with a variety of difficulties. However, in practice these adjustments were focused on those who had obtained a formal disability diagnosis. Others facing non-diagnosed learning difficulties such as being 'first in family' adult students, or those who were disorientated in their learning environment, did not have their needs consistently recognised or catered for. I found that we, as educators, were more effective when we responded to the whole learner, taking notice of their emotions, volitions and life circumstances, rather than solely seeing them as cognitive vessels.

Learning can be challenging for a wide variety of reasons.

Learning involves more than cognition alone.

Over a ten year period I watched my father's ability to manage life's challenges progressively decline as he developed Alzheimer's alongside other health issues. MOOCS on dementia and Alzheimer's equipped me to gain insights into what to expect, how to respond to changes over time, and to get the best assistance for him.

Lifelong learning is driven by life challenges and the desire for empowered responsiveness and adaption to the current and future expected contexts.

Online digital and media resources greatly increase the learning tools' availability and accessibility.

As Dad's health declined during the first two years of this study, his well-established learning capacity was lost. Progressively increased distortions in memory, cognition and learning from current context were accompanied by an extremely vivid recall of events from the 1930's, and an equally vivid imaginary reconstruction of current and recent events. Whilst the ability to converse remained undiminished, the ability to converse using shared meaning of current context progressively declined. And even though the inability to understand and learn from the current context did not impact established automated behaviours, it progressively erased his ability to survive independently. The loss of short and medium term memory meant that he repeatedly forgot he could no longer walk without assistance, resulting in many falls and injuries. Despite these severe impactors on his learning, it seemed that he did learn to accept his current situation, his powerlessness to change it, his new routines, and he learnt to trust others to manage most situations for him.

Learning may be disrupted and changed in form by organic conditions or other biological impactors.

Entering into the world of another means a connection can be maintained despite changes in perceptions of the world being different.

Counselling, my other profession, involves a deep form of transformative learning. However, this cannot occur unless there is safety for the client as they move from what they 'know and believe' to new ways of understanding. This movement from the known to the unknown matches what occurs in education. Without that movement, replication dominates rather than learning.

Learning involves moving from the known to the unknown and this can bring with it a range of reactions and responses.

Watching people in both education and counselling struggle with issues, it seemed the two professions were linked in a deep way. As people that I worked with struggled with change, they tended to first repeat what had previously worked for them, and watched as it failed to work in the new conditions they faced. The common observable factor associated with success was learning.

Learning is the key skill to have agency in our own lives.

To conclude, my experiences in a wide variety of learning situations have shaped my views on learning. They also offered me a unique and empowered position from which to view learning and the contribution that educators can bring to our understanding of it.

Additional posting after completion of this study

I have been a passionate and confident learner for most of my life. Undertaking the rigour of a PhD, reading hundreds of articles and books, tying disparate pieces of information into relational webs of understanding, and producing this study and its findings have left me with a new appreciation of learning—as a professional educator, as a learner, as a mentor, and as a human being!

Appendix F: Participant information and consent form

Department of Educational Studies
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MACQUARIE UNIVERSITY NSW 2109

Phone: +61 (0)2 9850 1040

Email: mitch.parsell@mq.edu.au

Chief Investigator's/Supervisor's Name & Title: Dr Mitch Parsell

Participant Information and Consent Form

Name of Project: What is learning?

You are invited to participate in a study of learning. The purpose of the study is to explore the varying perceptions tertiary educators in Australia have of learning and how they experience this phenomenon. Having a better understanding of learning will assist educators to build their teaching activities.

The study is being conducted to meet the requirements of PhD under the supervision of Dr Mitch Parsell (tel: 9850 1040, e-mail: mitch.parsell@mq.edu.au) of the School of Education.

If you decide to participate, you will be asked to participate in a semi-structured interview of 45–60 minutes length, which focuses on your experiences of learning. The interview will be recorded, de-identified and externally transcribed.

There are no apparent risks or discomfort associated with participating in this interview.

Any information or personal details gathered in the course of the study are confidential, except as required by law. No individual will be identified in any publication of the results. Only the candidate, Christine Chinchen, will have access to raw data. The supervisor, Dr Mitch Parsell, will have access only to de-identified and aggregated data.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence.

I, have read *(or, where appropriate, have had read to me)* and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this research, knowing that I can withdraw from further participation in the research at any time without consequence. I have been given a copy of this form to keep.

Participant's Name:_____

(Block letters)

Participant's Signature: _____ Date:_____

Investigator's Name: Christine Chinchen

Investigator's Signature:_____ Date:_____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Appendix G: Sample emails

1. Initial contact email

Dear ……

I wish to include your organisation in my sample for my PhD research on:

What is learning? A phenomenographic study of the lived experiences in learning of tertiary educators in Australia.

Your name was located via your organisation website and I am hoping you could recommend someone suitable for my study. If they agree, could you please ask them to email me at christine.chinchen@hdr.mq.edu.au

Attached you will find details of the study and also a consent form. In summary, it involves a one hour face-to-face interview that will be recorded then transcribed.

Your assistance in this study is much appreciated.

Regards

Christine Chinchen

PhD Candidate, Macquarie University

2. Appointment scheduling email

Dear …….

Thank you for agreeing to be part of the study:

What is learning? A phenomenographic study of the lived experiences in learning of tertiary educators in Australia.

As you know, this involves a one hour face-to-face interview conducted at your workplace or a convenient place. As we will be recording the interview it would be great to have somewhere reasonably quiet. Please let me know where is best for you.

I can be in (city name) and hope to meet you in the morning/afternoon if that is convenient for you. Can you please let me know via email if this date and time suits you? If it does not, if you could suggest some times around this date that would suit, I will schedule around them.

Your assistance in this study is much appreciated and I look forward to our next contact.

Regards

Christine Chinchen

PhD Candidate, Macquarie University

3. Confirmation of interview date, time and venue

Dear ……

This email confirms we will meet on (date) at (time). The venue for our meeting will be (name and address of venue). I would appreciate you bringing your Participant Information Sheet and also your signed Consent Form. These will be discussed at the beginning of the interview.
Look forward to meeting you then. Once again, thank you for agreeing to be part of this study.

Regards

Christine Chinchen

PhD Candidate, Macquarie University

Mobile:

Appendix H: Interview protocol

Thanks for your time today. You will have received the participant information sheet and also your consent form. Do you have questions about the study?

Questions answered as required. Consent form obtained from interviewee.

So before we get to the questions about learning, I have several biographical questions for you. Let's get them answered and then we will progress to learning. Is there anything you want to ask before I put on the recorder so we capture the information you provide?

Reiterate that I and a transcriber will be the only people to hear the interviews. Explain that the transcript will be de-identified so names of places and people will be removed.

Biographical data collected:

- gender and age (30s, 40s, 50s, 60s, 70s)
- length of time teaching (< year, 1–5 years, 6–10 years, 10–15 years, 15–20 years, more than 20 years)
- sector in which teaching occurs—vocational or higher education or both
- discipline in which teaching occurs
- experience and qualifications for teaching in chosen areas
- any specific teaching qualifications

This study focuses on your lived experience and noticing of learning rather than the theories about learning. Feel free to provide examples and explanations of what you mean in response to the questions. So are you ready to commence?

Specific probes used for:

- *clarification*
- *obtaining an example to highlight what the interviewee has experienced*
- *expand information obtained in the interview*
- *Could you please tell me more about …?*
- *I am not certain what you mean by …*
- *Could you give me an example of that?*
- *Can you tell me more about your thinking on …?*
- *What has informed your comments on …?*

Begin pre-set questions

1. From your experiences as a professional educator, what have you noticed about learning?
2. From your experiences as a learner, what have you noticed about learning?
3. From your experiences as both a professional educator and as a learner, what have you noticed facilitates learning and what inhibits learning?
4. Based on your experiences, if you were to explain to a new educator what learning is, what would you say?
5. We have discussed learning at some depth. So what do you actually mean by learning?
6. Before we conclude, is there anything you wish to emphasise or add to what we have already discussed?

Conclude interview

Thanks for your time today and the information you have provided. I will now turn off the recording.

Appendix I: Selected quotes by question, category, and Interviewee number

Question	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
1	1, 4	5, 7	12, 18	2, 6	-	-
2	6, 18	5, 15	1, 7	2, 4	-	-
3 – Facilitating and Inhibiting factors	8, 10	4, 5	16, 6	2, 18	-	-
3 – Facilitating factors only	16, 15	12, 13	9, 14	3, 11	-	-
3 – Inhibiting factors only	9, 6	14, 13	7, 11	12, 8	-	-
4	6, 15	1, 4	7, 8	10, 16	14, 18	-
5	16, 10	17, 12	14, 9	18, 8	1, 3	2, 15

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