The Development of Students' Enterprising Skills and Capabilities in NSW Commerce Classes: Teachers' Perspectives of Outcomes, Pedagogies and Barriers to Implementation

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Abstract

Enterprise education is conducted in a wide variety of formats at schools and universities in many countries. Recent research into the pedagogical approaches and student outcomes has mainly occurred in Europe at the higher education level. Studies are being conducted in schools but there is a need to investigate the teaching of enterprising skills and capabilities in Australian schools. Research in this area could help school leadership make decisions about developing teachers' pedagogical skills for the purpose of enterprise education. This thesis investigates how teachers perceive the development of students' enterprising skills and capabilities in terms of student outcomes, best-practice pedagogy, self-reported enactment and barriers to implementing enterprise education. The study is based on the framework of pedagogical content knowledge and explores possible signature pedagogies. A questionnaire completed by NSW Commerce teachers, producing quantitative and qualitative data, forms the foundation of the research. The findings show considerable alignment between teachers' perceived benefits of enterprise education and those reported in literature. They also reveal an enactment gap, particularly involving pedagogy for active learning. Factors within the school context, such as time, appear to be barriers to implementation. Signature pedagogies were unable to be determined at this time.

Keywords: Barriers, capabilities, enterprise education, outcomes, pedagogy, signature pedagogies, skills

Declaration of Candidature

I certify that the work in this thesis entitled 'The Development of Students' Enterprising Skills and Capabilities in NSW Commerce Classes: Teachers' Perspectives of Outcomes, Pedagogies and Barriers to Implementation' has not been previously submitted for a degree, nor has it been submitted in part for the requirements of a degree to a university or any institution other than Macquarie University.

I also certify that the thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in the thesis itself and have been appropriately acknowledged.

The research presented in this thesis was approved by Macquarie University Ethics Review Committee, Reference No: 5201800366 on 13 June 2018 (Appendix A).

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Chapter 1 Introduction

This chapter provides an overview of the research aims and questions, the theoretical models being applied to the study and a definition of enterprise education. The background of the study will provide context regarding the need for the research, leading into the Literature Review in Chapter 2.

1.1 Research Aim

The research for this study stems from the idea that secondary school should be about a full education of knowledge, understanding, skills and values to equip students with the capacity to think and act in an increasingly complicated world as it constantly changes and evolves. It is thus about resisting the ‘tail’ of high-stakes testing from wagging the ‘dog’ of education (Collins, 2011), which narrows curriculum (Au, 2011; Berliner, 2011; Ditchburn, 2012; Gurr & Drysdale, 2012) and reduces students’ skill development (Liu & Neilson, 2011). The motivation behind this study is thus to find how the teaching and learning process can shift from an emphasis on the attainment of marks via exams to being more about empowering students to have agency in life (Starkey, 2017; Wilson, 2013). Agency requires skills and capabilities beyond the knowledge and understanding that can be expressed in exams (Meziro, 2000). Enterprise education is one way students can develop these skills and capabilities (de Villiers Scheepers, Barnes, Clements & Stubbs, 2018; Gilje & Erstad, 2017) which is becoming increasingly popular in secondary schools (Hytti & O’Gorman, 2004). Enterprise education is not currently a feature of secondary school curriculum as set by government authorities in New South Wales, Australia, but is covered by an optional topic in the Commerce

syllabus for Years 8-10 (Board of Studies NSW, 2003). This study will therefore focus on how teachers can provide the means for enterprise education to occur within the scope of the Commerce syllabus set by the Board of Studies NSW (2003).

This MRES project aims to determine NSW Commerce teachers' perspectives of the development of students' enterprising skills and capabilities with a focus on:

- Outcomes
- Pedagogy
- Barriers

Outcomes are the more specific knowledge, understanding, skills and values of broader objectives in the Commerce syllabus (Board of Studies NSW, 2003). However, other benefits for students may result beyond these outcomes. Since enterprise education is not prominent in externally prescribed curriculum in NSW, this study aims to determine the outcomes and benefits associated with endeavours in this field.

With an increased emphasis on skills and attributes, there could be different pedagogies associated with enterprise education in contrast to more knowledge focused curriculum. This study therefore plans to investigate the pedagogies teachers associate with the teaching of enterprising skills and capabilities. In doing so, it also explores the existence of *signature pedagogies* (Shulman, 2005) for enterprise education.

It is one thing to associate particular pedagogies for particular pedagogies, it is another to be able to implement them (Anderson, Hinz & Matus, 2017; Le Fevre, 2013;

McLarty, Highley & Alderson, 2010) so this study will examine any perceived barriers to the implementation of pedagogies associated with enterprise education.

Since teachers are at the forefront of the implementation of curriculum, this study seeks their views of enterprise education.

1.2 The Research Question

To what extent do teachers' perspectives of enterprise education for developing students' enterprising skills and capabilities align with the outcomes and teaching methods advocated by the literature?

This overarching question is broken into several parts:

- What are teachers' perspectives of the benefits of enterprise education?
- What level of importance do teachers ascribe to the development of students' enterprising skills and capabilities?
- Do teachers' perspectives align with the outcomes advocated by academic literature and curriculum documents?
- What are the teaching methods teachers view as appropriate for developing students' enterprising skills and capabilities?
- Do teachers' perspectives of teaching methods for enterprise education match the methods advocated by the literature?
- How do the teaching methods deemed most appropriate by teachers compare to the methods they self-report as being enacted in class?

- Do teachers perceive any barriers to implementing enterprise education?
- How do the teachers' perception of barriers compare to the barriers identified in the literature?

1.3 The Significance of the Research

The outcomes of this research can be significant for schools and teachers seeking to improve the development of students' enterprising skills and capabilities within Commerce classes and/or any enterprise education in which they participate on a broader scale.

1.4 Defining Enterprise Education

There is much confusion surrounding the terms *entrepreneurship education* and *enterprise education* (Hytti & O'Gorman, 2004). Historically, entrepreneurship education has focused on the starting and running of a business (Hörnqvist & Leffler, 2014). In the USA it tends to still be this way (Blenker, Frederiksen, Korsgaard, Müller, Neergaard, & Thrane, 2012; Kirby, 2007). Elsewhere in the world the objectives of entrepreneurship education have expanded to include developing students' enterprising skills and dispositions or, in other words, the "abilities that characterize entrepreneurs" (Hörnqvist & Leffler, 2014, p.553). Fayolle and Klandt (2006) bundle entrepreneurship and entrepreneurship education into three categories:

- a *state of mind* of an individual or *culture* of an institution
- a set of *behaviours* and
- a matter of *specific situations*.

Zhang (2017) argues that “in reality entrepreneurial spirit and ideas are fundamental to all human activities” (p.3) and Blenker et al. (2012) views entrepreneurship as everyday practice that should have a personalised approach to enterprise education. Enterprise education involves learning about entrepreneurship and developing the skills and capabilities associated with being enterprising beyond the business context (Hytti & O’Gorman, 2004; Moberg, 2014). The term generally encompasses the method of teaching, the pedagogy or style of teaching and learning to develop a wide range of students’ enterprising skills and capabilities and much of the literature emphasises this aspect of the process (Jones & Iredale, 2010; Neck & Greene, 2011).

In this study, the more inclusive concept of *enterprise education* will be used, covering both the teaching and learning aspects, and the development of students’ skills and capabilities in the broad sense. The terms *entrepreneurship* and *entrepreneurial learning* will be used to apply to concepts specifically associated with starting up a business.

1.5 Background

This background is provided to ground the research in social context.

1.5.1 The world of work.

The more the world comes together through globalisation and technology, the more individualised people become in society and within the world of business (Beck,

2014). This paradox has contributed to the workforce being less about a collective effort and more about what individual people can contribute to the economy, often as contractors, thereby decoupling the labour from the capital with which it was once tied (Bauman, 2001; Beck, 1992). Technology and ideas now dominate the creation of goods and services more than the human labour aspect of the manufacturing process, resulting in a demand for people to have more specialised skills to participate in a risky contract-based labour market (Bauman, 2001; Beck, 1992). Due to this individualisation process (Beck & Beck-Gernsheim, 2002), and human capital viewpoint of education there is an impetus for education to change in order to equip students not only with knowledge and understanding but also the skills and capabilities to have the power to succeed in this highly competitive environment (Apple, 2005).

1.5.2 Global organisations.

Globalisation has created global corporate interest groups and supranational organisations that add to the individualisation process with agendas that determine the skills and characteristics possessed by individuals that will be valued in the labour market (Bjereld, Ekengren & Schierenbeck, 2009; Lingard, 2000). The European Commission (Eurydice network, 2012), the OECD (Krueger, 2015; Penaluna & Penaluna, 2015), the World Bank (Farstad, 2002; Valerio, Parton & Robb, 2014) and the World Economic Forum (Mariotti & Rabuzzi, 2009) are all calling for educational bodies to increase emphasis on the development of students' enterprising skills and competencies. Their neoliberal ideologies have an influence on the 'economising' of educational policies (and thus curriculum) under their view of education as the development of human capital (Jayawarna, Jones & Macpherson, 2015; Lingard, 2000;

Sellar & Lingard, 2013). Bourdieu (2003) claims this process of institutional influence under the banner of globalisation “is the effect not of economic inevitability but of a conscious and deliberate policy…a *policy of depoliticization*” (p.38). He goes to the extent of calling these organisations an “invisible world government . . . . sort of ‘Big Brother’” (Bourdieu, 2003, p.78).

On a smaller scale, Oldham’s (2018) research into the Young Enterprise Trust (a branch of the New Zealand Chamber of Commerce), found it had a significant influence on education policy as a major provider of enterprise education in New Zealand for over 40 years and was thus successfully promoting its neoliberalism free market ideology. A similar program ran in Australia which was criticised by a politician for infiltrating school systems “to bolster the so-called free enterprise system” (Beder, 2006, p.87).

In counterbalance to these neoliberal issues with enterprise education, Lackéus (2017b) argues that education systems are already established as being self-serving, individually focused with its competitions for marks, and that enterprise education should be about creating something for value for people as much as, if not more than, creating profit for oneself.

1.5.3 The Australian and NSW context.

In Australia, there has also been a call from institutions such as the Foundation for Young Australians (FYA) and NSW Business Chamber, to increase the teaching of entrepreneurial skills in Australian schools: “There is an urgent need for investment in a national enterprise skills and careers education strategy in schools…” (FYA, 2017, p.26)

and “...the Chamber is calling for educators to build enterprise skills into the school curriculum” (NSW Business Chamber, 2017, p.5).

This is not a new phenomenon (Yates and Collins, 2010):

> Industry-led agendas for school curricula (for example in Australia Finn, 1991; Mayer, 1992; Williams, 2005) frequently have a new emphasis on the kind of person they want to be formed, ‘adaptable and flexible’, ‘negotiating and team skills’, ‘personal management and planning’ and the like. (p.90)

Yates and Collins (2010) place this agenda in the context of the work of Beck (1992) and others, claiming the Australian capabilities approach to learning is partly a consequence of a rapidly changing world where “new workers need to be able to reinvent themselves, to develop new skills, to move between organisations, and above all to develop the meta-cognitive skills to steer themselves and their own lives”. Since Yates and Collins (2010) wrote this article, the Australian Curriculum has been introduced, including General Capabilities such as critical and creative thinking and interpersonal skills (ACARA, 2013) which have a strong alignment with enterprising skills and capabilities. ACARA (2018c) has a resource on their website demonstrating how the general capabilities applies to various subject areas. For applying critical and creative thinking to *7-10 Economics and Business* it says students “develop enterprising behaviours and capabilities to imagine possibilities, consider alternatives, test hypotheses, and seek and create innovative solutions to economics and business issues and/or events” (ACARA, 2018c). However, the traditional structure of a subject based curriculum remain the core of secondary education with general capabilities to be

integrated with them (ACARA, 2013), not driving the curriculum, as some hoped (Reid, 2005).

The individualisation process is evident by the inclusion of enterprising skills and capabilities in the recently produced Australia's national curriculum. It is most prevalent in the Rationale for the Curriculum for F-10 Economics and Business:

> The economics and business curriculum fosters enterprising individuals who are able to effectively embrace change; seek innovation; work with others; show initiative, flexibility and leadership; use new technologies; plan, organise and manage risk; and use resources efficiently. (ACARA, 2018a)

However, when it comes to the more specific outcomes, they tend to be more content driven. There is a lack of alignment between the ACARA objective of developing "enterprising individuals" (ACARA, 2018a) and specific curriculum requirements. This is reflected, for instance, in the *Australian Curriculum for Economics and Business* at the Year 7-8 level. Students are required to know *about* the *Characteristics of entrepreneurs and successful businesses* (ACHEK019) and be able to answer the inquiry question, *How does entrepreneurial behaviour contribute to a successful business?* (ACARA, 2015). These outcomes can easily be met by simply reading material. An Estonian study conducting content analysis of the Australian curriculum for addressing the development of students' skills and capabilities associated with enterprising behaviour found a similar situation with curriculum at the general level espousing these aims but only to a limited extent in the more specific outcomes based sections of the curricula (Randma & Venessar, 2016).

The New South Wales Education Standards Authority (NESA) currently only has limited coverage of entrepreneurial skills and capabilities in its curriculum documents. For example, the syllabuses for *Design and Technology* and *Commerce* have aspects of entrepreneurial learning but it is possible to teach the entrepreneurship components in a theoretical sense only, so that students mainly learn *about* entrepreneurship rather than develop enterprising skills and capabilities. For instance, the current Commerce syllabus, first implemented in 2004, has an optional topic, *Running a Business*. The overall focus of the topic is that "Students become actively engaged in planning, organising and running a small business and develop strategies to address problems as they arise" (Board of Studies NSW, 2003, p.46). However, of the sixteen "Students learn to:" points, all are achievable via an information delivery format, except the very last point requiring students to "set up and run a simulated or school-based business" (Board of Studies NSW, 2003, p.47). It is therefore possible to meet this outcome with only a quick simulation of setting up and running a business at the end of the topic to learn *through* entrepreneurship, thereby ignoring the overall focus of students being actively involved as quoted earlier. At the other end of the spectrum, it would also be possible to learn the bulk of the topic through setting up and running a business.

NESA is currently converting the Commerce syllabus into an interactive online format which will integrate aspects of the Australian Curriculum for F-10 Economics and Business (NSW Education Standards Authority, 2018). Given the importance the Australian Curriculum places on enterprising skills and capabilities, it has the potential to alter the nature of teaching and learning in Commerce.

1.6 Conclusion

The theoretical constructs, context and curriculum set the scene behind the stated aims and research questions and lead to the literature review of enterprise education in the next chapter.

Chapter 2 Literature Review

2.1 Introduction

This literature review examines the research that has been conducted in the area of enterprise education, particularly in secondary schools, with a focus on student outcomes, pedagogy and possible barriers to implementation.

2.2 Enterprise Education Background

Entrepreneurship has been a part of business education at the higher education level for some time with a surge in the 1970s and 1980s of programs having a goal of increasing business start-ups (Gibb, 1987a). However, due to the increasingly uncertain business environment globally, the last two decades have seen a push for development of a greater range of entrepreneurial skills through less traditional methods of education (Kickul & Fayolle, 2007). Gibb (1987a, 1987b, 1993, 2002a, 2002b) is one of the most prolific writers in the area, particularly in making theoretical assertions for changing to less didactic pedagogical practices in higher education enterprise programs. Other researchers have followed suit with most of the enterprise education literature coming out of Europe adopting a constructivist view of knowledge and learning with the justification that entrepreneurship and the associated skills and actions are best enacted by students being active in their learning, with experiential learning most frequently mentioned in the literature (Lee, Hebaishi & Hope, 2015; Löbler, 2006; Randma & Venesaar, 2016; Ruskovaara & Pihkala, 2013, 2015; Seikkula-Leino, 2011).

Enterprise education is becoming more prevalent at both the higher education level and in schools. A literature review of 88 empirical studies of entrepreneurship education conducted by Blenker, Elmholdt, Frederiksen, Korsgaard and Wagner (2014) found a significant increase in the number of investigations over the time period they studied (2002-2012). In more succinct terms, “research on entrepreneurship and entrepreneurship education has exploded” (Holmgren & From, 2005, p.382). The growth in school level enterprise programs has occurred due to (Headley & Moffatt, 2015; Mariotti & Rabuzzi, 2009):

1. A job market offering low stability for employees
2. Globalisation and advances in internet technology and
3. An increasing emphasis in education for general skills and capabilities, in conjunction with the more traditional depth of knowledge and understanding.

Over the past 15 years there has been some research into the secondary school context of enterprise education but a limited number, particularly compared to the higher education level, are from empirical studies published in academic journals. The following studies focus on teaching methods and student outcomes in programs conducted by secondary schools (not external providers): Birdthistle, Hynes and Fleming (2007), Hytti and O’Gorman (2004), Ismail, Sawang and Zolin, 2017; Lee et al. (2015), Ruskavaara and Pihkala (2013, 2015), Moberg, 2014; and Seikkula-Leino (2011). There are also theoretical papers (Jones & Iredale, 2010) and reports for governments (Bolstad, 2006; McLarty et al., 2010). A report from the Mitchell Institute appears to be the only Australian empirical research into secondary school enterprise programs (Anderson et al., 2017).

2.3 Enterprise Education Theoretical Frameworks and Approaches

There is a vast variety of objectives in enterprise programs (Hytti & O'Gorman, 2004; Mwasalwiba, 2010). In terms of student related outcomes, these objectives are often divided into three categories in some variation of *about* enterprise, *for* enterprise, and *through* enterprise, that appears to have originated with Jamieson in 1984 (as cited in Lee et al., 2015, p.793). The *about/for/through* categories capture the objectives and associated pedagogies of enterprise education (Hytti & O'Gorman 2004; Johansen & Schanke, 2013; Pittaway & Edwards, 2012):

1. **About**: the attainment of knowledge about entrepreneurs and entrepreneurship as a societal phenomenon, to build awareness and provide information in order to later make a choice about becoming an entrepreneur. Since it focuses on the transmission of knowledge, teaching is generally in a more traditional, didactic format.
2. **For**: the acquisition of knowledge and skills to develop entrepreneurial capabilities that can be utilised in the future, usually by participating in projects and activities involving experiential and inquiry based learning.
3. **Through**: student participation in the entrepreneurial process through actual or mock companies, within the school community or in collaboration with a real business, or by some other means, under the guidance of a teacher.

However, like trying to define enterprise education, there is some confusion and blurring of lines. For instance, Moberg (2014) defines *for* entrepreneurship as being cognitive based attainment of knowledge and skills driven via content and *through*

entrepreneurship as non-cognitive based development of skills and attributes via students being actively involved in collaborative learning driven by their own interests.

Despite slight inconsistencies in definitions and usage, the *about/for/through* classification system is frequently used for analysis of enterprise education and has stood the test of time. It will therefore also be used in this study (Hytti & O'Gorman 2004; Johansen & Schanke, 2013; Lee et al., 2015; Pittaway & Edwards, 2012).

Researchers also argue that entrepreneurial education at the higher education level traditionally comes from a rational/functionalist approach, following a linear process where entrepreneurs logically undertake steps to find an opportunity in the market and follow a business plan to seize that opportunity. Instead, entrepreneurship is now considered to be more of a creative and innovative process that needs to occur through experiential learning, a social constructivist approach (Higgins & Elliott, 2011; Higgins, Refai & Keita, 2018; Paloniemi & Belt, 2015). Higgins and Elliott (2011) divide these two teaching approaches into passive/formative learning and social learning. Manimala and Thomas (2017) claimed it was "customary for researchers to classify them into traditional and innovative" (p.10). Wang and Chugh (2015) found of the 65 articles they analysed for types of learning in enterprise education, nearly half (43%) referred to experiential learning, often drawing upon the work of Kolb (1984) who, in turn, drew upon the work of Dewey, Lewin and Piaget (Kolb, 1984). Experiential learning is frequently equated with active learning (Jones & Underwood, 2017), learning 'by doing' (Cope, 2003; Gibb, 1987b, 2002a; Pepin, 2012), student-centred learning (Ismail & Zolin, 2018) and enterprising learning (Pepin, 2012). These approaches are then usually set

in a dichotomy with passive or traditional learning (Higgins et al., 2018), cognitive learning (Blenker, Robinson & Thrane, 2015; Draycott & Rae, 2011) and teacher-centred learning (Ismail & Zolin, 2018). Lackéus, Lundqvist, and Middleton (2016) argued for making enterprise education focus on value creation to bridge the dichotomy divide. In this model of enterprise education based on three case studies, students produce something of value *through* enterprise. The research involved six case studies in a later conference paper (Lackéus, 2017a). The focus on a product that is of value to a wider community is meant to unite the opposing traditional and progressive teaching approaches. However, it appears the more traditional teachers would need to cross almost to the other side of the bridge and the progressives just a short way. The intervention research conducted by Anderson et al. (2017) followed an earlier version of this concept (Lackéus, 2015), discussed further below in Section 2.4.

In summary, the *about* enterprise approach comes from a paradigm of realism or positivism, an objectivist approach, where the focus of teaching and learning is on content. In the context of enterprise education, this is the knowledge required to start and manage a business to enable students to become entrepreneurs in the future (Robinson, Neergaard, Tanggard, & Krueger., 2016, Löbler, 2006). The social constructivist approach is more applicable to the *for* and *through* enterprise approaches where learning is constructed in the mind, based on participation in the construction of knowledge from a personal perspective and purpose, in a social context, rather than the mere gathering of facts (Löbler, 2006).

2.4 Outcomes

Traditionally, the main objective of education in the field of entrepreneurship was the transmission of knowledge with the ultimate aim of students starting their own businesses built on this knowledge base (Gibb, 2002a). In 2000, two studies into entrepreneurial behaviour investigated the extent entrepreneurs used what they had learned about entrepreneurship at university or other post-school education facilities to achieve business success (Harris, Forbes & Fletcher, 2000; Raffo, Lovatt, Banks & O'Connor, 2000). Harris et al. (2000) found many of the more successful entrepreneurs interviewed at depth (n=21) abandoned several aspects of the particular university course they all attended, such as the use of business plans. Raffo et al. (2000) had similar findings when they interviewed 50 entrepreneurs from small businesses in cultural industries. Both advocated for less traditional teaching methods in entrepreneur programs to enable situated learning to occur. The research revealed entrepreneurship as "not just about the formal knowledge transmitted by education and training, it is about a way of acting, a way of understanding and a way of conceiving one's self-identity" (Raffo et al., 2000, p.363).

Objectives of enterprise education, in terms of specific student outcomes, now tend to split into two main areas. The first relates to the more traditional objective of entrepreneurial knowledge leading to successful business outcomes (for example, starting a business and generating profits) and the second is more about the everyday practice of enterprising knowledge, skills and behaviours in action (Higgins & Elliott, 2011; Hytti & O'Gorman, 2004). However, Blenker et al. (2012) make a clear distinction between experiential learning and everyday practice as the former being real world

problem solving (third person perspective) and the latter as a personal experience (first person perspective). In summary, approaches to enterprise education will differ as to whether the objective is to build the knowledge base in entrepreneurship, to eventually become an entrepreneur, or for students to develop the mindset and traits of an entrepreneur.

Some studies have applied Ajzen's (1991) theory of planned behaviour (TPB) to investigate students' entrepreneurial intentions for the future by the end of their courses. TPB comprises of three components that influence a fourth, the behavioural intention (a person's willingness to undertake a particular behaviour): the attitudes (beliefs and feelings) of an individual, the subjective norm (a person's perception of the possible approval of others) and the perceived behavioural control (how easy or difficult the behaviour will be to perform). If all of these components are favourable then there is a high likelihood that an intention will transform into a behaviour. A quasi-experimental study, conducted in Malaysia, compared the entrepreneurial intentions of two undergraduate classes. One involved a traditional passive style of learning (lectures, etc) (n=117) while another class had a more active learning approach (n=86), plus a control group of business students not enrolled in the entrepreneurship course (n=105) (Ismail, Sawang & Zolin, 2017). In Denmark, Moberg (2014) similarly conducted a study (n=1377) comparing secondary school students in traditional content-driven classes with students in classes driven by activity-based learning. The division of these classes was determined by students' responses to survey questions about group work, student participation, the emphasis on learning from mistakes, and the like. In both studies, students in the more traditional classes were more likely to intend participating in

enterprise activities during post-school life. However, Moberg's (2014) study also investigated student engagement in their educational process in terms of work ethic, enjoyment levels and self-efficacy. The teaching methods had the opposite effect upon engagement as it did on entrepreneurial intentions. It was suggested this was due to the emphasis on skills and capabilities being applicable to a broad range of post-school careers. The more traditional teaching emphasises entrepreneurship and business start-ups. Perhaps it is also a case that students in non-traditional classes, by being more actively involved in adopting enterprising skills, have a more realistic idea of how difficult entrepreneurial activities can be.

However, these studies into entrepreneurial intentions and behaviour do not reflect the development of the broader concept of enterprise education where enterprising capabilities or an entrepreneurial mindset are not necessarily expected to result in the start-up of a new business to be considered as successfully achieving curriculum objectives (Jones, Matlay & Maritz, 2012). One higher education program assessed students for these capabilities on the basis of (1) demonstrating knowledge and ability to solve problems in a presentation, (2) playing a resource allocation game in teams of three, (3) case study analysis, (4) a reflection journal of the first three tasks for self-analysis, (5) undertaking a major assignment, including meeting with an entrepreneur who has been involved or currently in the process of establishing a new business and (6) completing a final exam requiring a connection between theoretical concepts and an "empty case study" (Jones, 2006, p.341). This demonstrates a range of options are available for assessment of enterprising capabilities. In a study by Pittaway and Edwards (2012) of 117 higher education courses across the USA (n=85),

UK (n=29) and elsewhere (n=3), business plans, business reports, presentations and reflective assessment practices were prominent for programs that were *for* and *through* enterprise with more traditional tests, exams and case study assessments used in programs that were *about* enterprise with knowledge and understanding objectives. Davies and Hughes (2015) developed a questionnaire tool assessing students' entrepreneurial aspirations, their self-efficacy in relation to enterprise and their understanding of enterprise. It was administered by teachers to 800 14-15 year olds across seven schools after being trialled extensively with 413 students not involved in the main study. There were significant variations amongst the schools, even after accounting for students' individual characteristics, and it was also possible for schools to have students improve in one of the elements but not the other two. It was stressed that students' *progress* needs to be assessed in enterprise education. As Davies and Hughes (2015) noted, there is little research into the area of assessing school students' development of enterprising skills and capabilities.

For the last three decades, Gibb (1987b) has advocated enterprise education where learning occurs by being actively involved in real life problem-solving, "learning by doing, but also learning by failure" (p.27). Gibb (2002b) later synthesised the key entrepreneurial behaviours cited in literature (sources not identified):

> Among those behaviours commonly cited are finding opportunities, grasping opportunities, fixing things and bringing networks together effectively; taking initiatives; being able to take risks under conditions of uncertainty and through judgement; persevering to achieve a goal and strategic thinking (thinking on one's feet, not just tactically). Related to these are a number of supporting attributes

> around which there is a considerable ‘trait’ literature. These include: motivation to achievement; self-confidence and self-belief; creativity; autonomy and high locus of control; hard work; commitment; and determination. In turn related to these are skills which include among others negotiation, persuasion, selling, proposing, project management, time management, strategizing and creative problem-solving. (p.254)

The literature covering enterprise education at the school level recognises similar behaviours, attributes and skills as desirable student outcomes and self-reported attainment.

In an Australian intervention study, Anderson et al. (2017) established the ground rules for conducting enterprise education in the participating schools (ten in Western Sydney and nine in rural and metropolitan Victoria). The set principles for the enterprise programs specified that students were to follow their own interests and talents to create products that added value to the community in an innovative way, following some of the product creation concepts from Lackéus (2015). The objectives underlying these principles was for students to develop entrepreneurial mindsets, self-efficacy and agency, also the focus of the research. It was completely under the direction of the schools as to how the enterprise program fitted into their curriculum and there was significant variety in this regard. Therefore, more specific objectives than these were not reported upon. In contrast, in an Irish study, Birdthistle et al. (2007) examined much more specific outcome objectives. A questionnaire was used to investigate 95 different stakeholders’ attitudes toward enterprise education for students aged 16-18 undertaking the Transition Year. The syllabus had “an emphasis on innovation, developing personal

and social skills, self-directed learning, as well as providing the students with experience of adult and working life" (p.268). A mini-company module involved students starting their own enterprise (*through* enterprise) under which they developed skills such as "responsibility, leadership, confidence, self-reliance and creativity" (Birdthistle et al., 2007, pp.268-269). A New Zealand (NZ) study conducted by Bolstad (2006) for the NZ Ministry of Education had yet a different approach to enterprise education. In this case, teachers participated in a professional development program to equip them to teach in an enterprising way with the end goal of developing students' innovative and opportunity seeking behaviour. It thereby focused teachers on students as people as opposed to focusing on the curriculum to be learnt or the assessments to be produced. The McLarty et al. (2010) research report was funded by the Department of Education in England to evaluate schools' use of funding four years after the government made a concerted effort at great expense to implement enterprise education. It is one of the most comprehensive studies into enterprise education at the school level, including a quantitative survey of 408 enterprise coordinators across England and 30 case study schools. Amongst other outcomes, McLarty et al. (2010) investigated how successful schools were at improving students' enterprise capability with "enterprise skills and a can-do attitude" (p.12).

Despite this vast range of approaches to enterprise education and its objectives, the outcomes achieved were quite similar. Communication skills, presentation skills, teamwork, decision-making skills and creativity were students' (n=70) self-reported gains via a questionnaire in the Birdwhistle et al. (2007) study with teachers (n=10) adding improved confidence to the list from their observations. The students felt positively towards starting a business but recognised it would be hard work. Students

(n=32) in focus groups from the Bolstad (2006) NZ study similarly self-reported achievements in teamwork and communication but also mentioned time management, learning about themselves and perseverance. Principals, teachers and students involved in the enterprise programs of the Anderson et al. (2017) study completed questionnaires and some participants selected for their high level of involvement were also interviewed. Artefacts (planning documents, reflections and end of program reports, posters and videos) were also documented and analysed to triangulate with data obtained from the questionnaires and interviews. Again, teamwork, creativity, confidence, communication skills and resilience featured in the self-reporting of students. The teachers concurred with the students self-assessment but also commented on the deeper learning attained and that students developed "new ways to work and learn" (Anderson et al., 2017, p.43). Schools' enterprise co-ordinators (n=408) in the McLarty et al. (2010) study reported that students were developing a range of enterprising skills and abilities but didn't have a great understanding of the more entrepreneurial aspects of enterprise education, as in how to be self-employed and start their own businesses. It appears that when skills and capabilities are at the core of enterprise education, the more business oriented aspects are lost.

As can be seen, there is some consensus regarding the skills and attributes enterprise education helps to develop. The skills and attributes most frequently associated with enterprise education in the literature at the school level were:

- Problem-solving skills

  (Anderson et al., 2017; Birdthistle et al., 2007; Bolstad, 2006; McLarty et al., 2010; Ruskovaara & Pihkala, 2013)

- Creativity

  (Anderson et al., 2017; Birdthistle et al., 2007; McLarty et al., 2010; Moberg, 2014; Seikkula-Leino, 2011)
- Communication skills

  (Anderson et al., 2017; Birdthistle et al., 2007; McLarty et al., 2010)
- Innovation and the generation of ideas

  (Birdthistle et al., 2007; McLarty et al., 2010; Seikkula-Leino, 2011)
- Teamwork

  (Anderson et al., 2017; Birdthistle et al., 2007; McLarty et al., 2010; Seikkula-Leino, 2011)
- Leadership

  (Anderson et al., 2017; Birdthistle et al., 2007)
- Persuasiveness and negotiating skills

  (Anderson et al., 2017; Birdthistle et al., 2007; McLarty et al., 2010)
- Perseverance and resilience

  (Anderson et al., 2017; Bolstad, 2006; McLarty et al., 2010)

This list is mainly generated from the perceptions of teachers and students in the studies and to a lesser extent, the curriculum documents and authors' summaries of the purpose of enterprise education. The studies did not provide any assessments beyond this regarding the attainment of these skills, nor did the researchers observe the enterprise programs in action. It is evident that a number of schools are conducting some form of enterprise education and as a result students are developing new skills

and capabilities and that while independently each of these skills and capabilities can be categorised as a life skill, together they represent the attributes of an enterprising person.

2.5 Pedagogy and Barriers to Implementation

Gibb (2002b) produced a table that matched more than 30 different teaching methods to eleven entrepreneurial behaviours and skills, indicating the scale of pedagogical options available to teachers in enterprise education. Since Gibb (2002b), the literature has increasingly advocated for a move away from the more traditional teaching approaches in enterprise education (Anderson et al., 2017; Kickul & Fayolle, 2007; Seikkula-Leino, 2011) with some claiming enterprise education to be unlike any other form of teaching (Birdthistle et al., 2007), due to its constructivist approach to learning (Löbler, 2006). More recent studies have covered methods as diverse as enterprise camps outside the normal school environment (Bager, 2011), simulation games (Fox, Pittaway & Uzuegbunam, 2018) and design thinking processes (Huq & Gilbert, 2017; Val, Gonzalez, Iriate, Beitia, Lasa, & Elkoro, 2017).

Much of the literature in enterprise education is theoretical, rather than empirical: “While it is widely claimed that enterprise education has substantial positive impacts on participants, teachers and schools, these are generally anecdotal and based on experience, rather than robust data” (McLarty et al., 2010, p.12). For instance, the literature review of teaching methods for enterprise education underpinning a study by Ruskovaara and Pihkala (2013), was heavily based on theoretical papers (Blenker, Korsgaard, Neergaard & Thrane, 2011; Fiet, 2000; Frank, 2007; Jones & Iredale, 2010;

Neck & Greene, 2011; Pittaway & Cope, 2007; Shepherd, 2004), plus a literature review (Solomon, 2007), four examples of courses (not empirically tested) (Hynes & Richardson, 2007), an author's own personal experience told in a fictionalised autobiography (Gartner, 2008) and an introduction to a special edition journal (Fayolle, 2008). The only articles with empirical testing were a single case study (Cooper, Bottomley & Gordon, 2004), and studies based on action research (Gibb, 2011; Jones 2007). Ruskovaara and Pihkala (2013) referred to a number of teaching methods on the basis of this literature, mainly in the vein of *for* enterprise, including experiential learning, cooperative learning, projects carried out in close cooperation with businesses, enterprise visits, guest speakers, social entrepreneurship, case studies, role-play, simulations, games and learning diaries. Many researchers, including Seikkula-Leino (2011), openly advocate for a shift in pedagogy from the more traditional styles of teaching to more activity-based learning. Their research produced a similar but shorter list of pedagogical practices for enterprise education than Ruskovaara and Pihkala (2013) and with less literature in support: "What is needed is a range of activities that encourage students' interactive learning and reflections: co-operative learning, problem-based learning, group and peer work, project work, team work, learning by doing, pedagogical drama, and learning diaries" (Seikkula-Leino, 2011, p.72). Anderson et al. (2017) declared that "Australian schooling needs a paradigm shift" (p.9). This pattern of advocacy is not unusual for the literature in enterprise education, highlighting the importance of further empirical studies to be conducted.

The empirical study of Finnish enterprise education conducted by Ruskovaara and Pihkala (2013) was via an online questionnaire producing quantitative data from

521 responses. The questionnaire contained 140 questions but this particular study only examined a section where teachers were asked to estimate for a list of 23 teaching approaches the number of times they had used each of them over the previous six months. The findings revealed discussions, stories about entrepreneurs and other teaching materials were utilised most frequently. By measuring the number of times different pedagogical practices were used, the research was setting up an unfair comparison of teaching methods that can easily be implemented in class on a daily basis, to more one-off activities, like excursions and participation in market days, due to the time and organisation involved. The authors lamented that teachers were not visiting business frequently enough, at 2.78 visits on average per six month period. “It is, perhaps, somewhat surprising that although arranging visits and especially inviting entrepreneurs to the school do not require great efforts, they are used rather seldom” (Ruskovaara & Pihkala, 2013, p.209). In contrast to this outcry, enterprise education coordinators across England (n=408) reported in-school talks by businesses as one of the least effective activities for enhancing students’ knowledge and understanding of enterprise (McLarty et al., 2010). The findings revealed learning ‘by doing’ was a focus in the more successful schools. Running a business or a social enterprise at school was found to be the most effective method to improve students’ knowledge and understanding of enterprise. Hytti and O’Gorman (2004) had similar findings to Ruskovaara and Pihkala, (2013). When they conducted an analysis of 50 school programs across Europe for enterprise education they produced a list of teaching methods topped by the more traditional lectures and essays but with business simulations coming in a close second. However, this study of programs did not reveal

enacted pedagogy, self-reported or observed, so cannot be relied upon for any more than being the intended curriculum.

Once statistical adjustments were made in the Ruskovaara and Pihkala (2013) study, the methods reported were able to be compared to other factors. For instance, the more training teachers had in enterprise education, the more likely they were to report they were taking “an active approach” (Ruskovaara & Pihkala, 2013, p.212). Self-reported skill level also correlated with teaching methods. Teachers who claimed to have limited skill in enterprise education mainly implemented discussion related activities and used resources already created and on-hand, while those who perceived themselves as more highly skilled were more likely to implement project work and games related to entrepreneurial activities. This is supported by the Anderson et al. (2017) study which reported that even teachers who agreed with the need to shift pedagogy from directing to guiding, found it difficult to implement in practice. However, during the study some experienced a pivotal moment where they were able to comfortably shift their teaching habits. At the end of the study, principals identified collaboration and authentic audiences as features conducive for developing students’ enterprising skills. Lee et al. (2015) interviewed a principal and a leader of learning as part of their case study of a New Zealand school known as exemplary for its enterprise education program. These leaders were adamant that their active involvement in introducing and running the program led to teacher willingness to be involved. They further assisted by providing time off class (funded by businesses associated with the school) to allow teachers “to focus on enterprise education” (p.798). McLarty et al. (2010) also found the support of the schools’ senior management team was very important for successful implementation

of enterprise education. In addition, they found that enterprise education needs to have a high priority in the curriculum, evident in the provision of time for the coordinator, time in the timetable and ongoing professional development for teachers.

Seikkula-Leino (2011) conducted research involving an investigation of a wide range of school and business representatives across Finland to determine what they knew about enterprise education and the level of responsibility they felt they had regarding its implementation in schools. In Finland, curriculum reform is now meant to be implemented in a community partnership model to prevent teachers becoming the sole change agent. Despite this policy, teachers still felt the brunt of the responsibility and were the most negative of those surveyed within the education field regarding the development of enterprise education but positive about the process (not as happy as the guidance counsellors though). The study revealed that the teachers understood the aims of enterprise education and felt like they understood what should be taught but did not feel confident about how to teach it, leading Seikkula-Leino (2011), like Ruskovaara and Pihkala (2013), to declare a need for pedagogical training. Birdthistle et al. (2007) also found teachers were concerned with a lack of training. Principals were more concerned with time issues due to an already full curriculum and timetable constraints. Anderson et al. (2017) reported that time and the attitudes of both teachers and students could hinder changes in pedagogical practices.

There is very little empirical research into pedagogical practices at the school level for enterprise education. The few studies that have been conducted were through teachers, principals and students self-reporting in questionnaires, interviews and focus

groups. There is clearly a need for observational studies to occur to verify these studies and for the pedagogical practices to be assessed on the basis of outcomes achieved. The barriers to pedagogical shifts also need further research, to determine the extent teacher training, time and other hindrances prevent them from occurring.

2.6 Conclusion

The above review highlights a social constructivist foundation underlying current literature regarding enterprise education. There is a clear drive towards a teaching and learning process involving an experiential style of learning for the development of students' skills and capabilities.

Despite the literature making theoretical assertions for this shift in approach, teachers in enterprise education reportedly continue to favour more traditional approaches of teaching *about* enterprise. When the objective of enterprise education includes the development of students' enterprising skills and capabilities, as the current global corporate and political environment is demanding, then the pedagogical approaches being advocated are much more varied with methods *for* enterprise and *through* enterprise. Time issues and a lack of teacher development in enterprise education pedagogies are raised as possible reasons for the reliance on more teacher-directed learning activities.

The studies of schools covered in this literature review relied heavily on the self-reporting of both students and teachers. Observations of enterprise education in action were not present. In terms of outcomes, most studies focused on students attaining an

intent to become entrepreneurs or in longitudinal studies whether they actually engaged in entrepreneurship, whereas studies into the attainment of enterprising skills and capabilities have concentrated on teachers' informal observations of students rather than measuring benefits or outcomes attained. There is very little evidence of the extent enterprise education improves enterprising skills and capabilities. In terms of pedagogies, most of the research investigated what teachers were doing (or not doing) with little regard for what they think, believe or feel. There is a distinct lack of studies at the secondary school level, particularly at Australian schools regarding the role of teachers and the specific pedagogies associated with enterprise education.

The next chapter will outline the methodological approach to how this study will examine the outcomes, pedagogy and barriers in NSW Commerce classes, providing a glimpse at the Australian school context of enterprise education.

Chapter 3 Theoretical Frameworks

3.1 Introduction

There are two theoretical frameworks being used in this study, pedagogical content knowledge and signature pedagogies. Both have their origins with Shulman (1986, 2005).

3.2 Pedagogical Content Knowledge (PCK)

The current study is structured on the *model of professional teaching and skill*, also known as the consensus model of pedagogical content knowledge (PCK) (Gess-Newsome, 2015). This model was chosen due to its clear depiction of teachers' decision-making involving pedagogies, outcomes and the aspects of teaching that come between them, thereby covering the key points being covered in this thesis. The concept of PCK was developed by Shulman in 1986 and has been continually refined over the past 32 years. The most recent model illustrates the transformation of teacher knowledge into *classroom practice* and *student outcomes*. Teacher knowledge includes topic specific best-practice teaching strategies subjected to *amplifiers and filters* of teachers' beliefs and orientations towards teaching, plus the context in which they teach, before being enacted in class. *Classroom practice* is then subjected to the *amplifiers and filters* of students during the learning process and attainment of outcomes. The students and their outcomes then loop back to inform the knowledge and beliefs of teachers (Gess-Newsome, 2015), as illustrated in Figure 1.

In the words of this model, this study is investigating if teachers' perceptions of what constitutes best-practice for developing students' enterprising skills and capabilities align with professional knowledge in terms of *instructional practices* and students' *habits of mind* for enterprise education. Is there a gap between teacher knowledge and beliefs and how it is enacted in class? If there is a gap, what are the *amplifiers and filters* causing it?

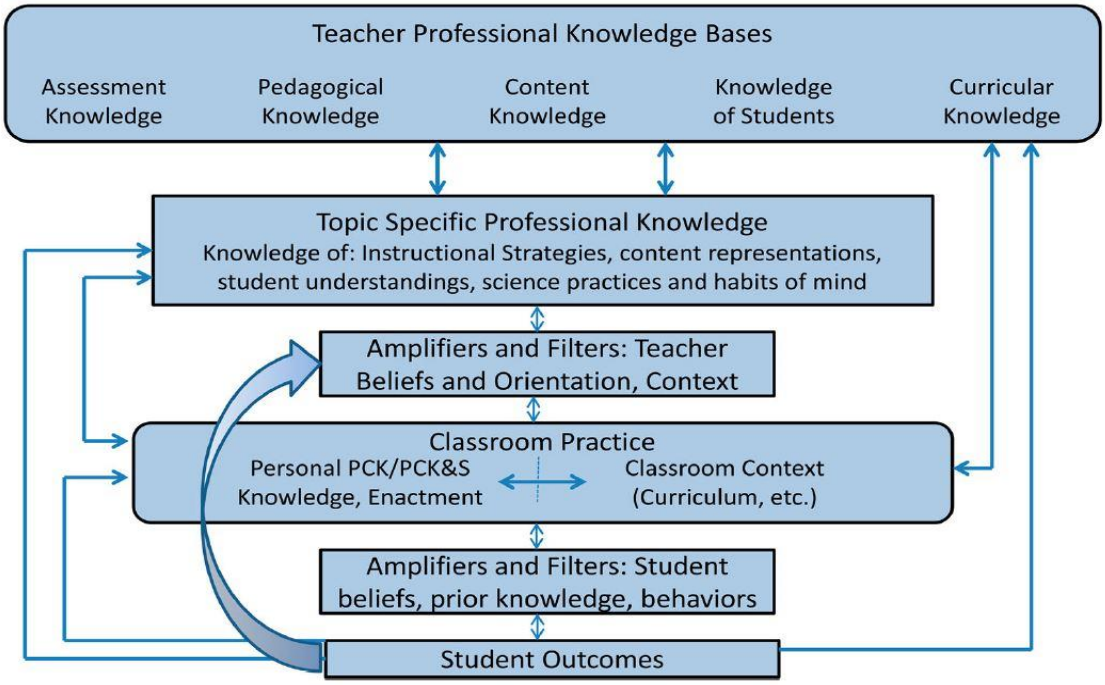

Figure 1 Model of professional teaching and skill

Reprinted from 'A model of teacher professional knowledge and skill including PCK: Results of the thinking form the PCK Summit, by J. Gess-Newsome, in A.Berry, P. Friedrichsen, and J. Loughran (Eds.), *Re-examining Pedagogical Content Knowledge in Science Education* (p.31), 2015. New York, MY: Taylor and Francis.

3.3 Signature Pedagogies

Signature pedagogies were originally described as “the types of teaching that organize the fundamental ways in which future practitioners are educated for their new professions” (Shulman, 2005, p.52), such as law and architecture, and involve the three dimensions of thinking, performing and acting with integrity. This has parallels to the different approaches to enterprise education. Traditionally students have been prepared for entrepreneurship by studying what they need to know *about* enterprise and then thinking about how to apply that knowledge to their own entrepreneurial situation later in life (Gibb, 2002a). Students learn about the qualities of an entrepreneur and how they achieve in business. They could then follow suit (or not) once they too were entrepreneurs. Now enterprise education is becoming more about developing students’ skills and capabilities by performing entrepreneurship *for* and *through* enterprise (Gibb, 2002b; Hytti & O’Gorman 2004; Johansen & Schanke, 2013; Pittaway & Edwards, 2012). Through interactions with peers and the wider community, possibly by running a business (*through* enterprise), students can learn enterprising attributes and behaviours, including how to act with integrity.

Signature pedagogies are divided into three components (Shulman, 2005):

1. *Surface structure*: concrete, operational acts of teaching and learning, of showing and demonstrating, of questioning and answering, of interacting and withholding, of approaching and withdrawing.
2. *Deep structure*: a set of assumptions about how best to impart a certain body of knowledge and know-how

3. *Implicit structure*: a moral dimension that comprises a set of beliefs about professional attitudes, values and dispositions. (p.55)

Again, the parallels to enterprise education can be drawn. Teachers participating in an enterprise program that focuses on developing students' skills and capabilities need to establish their *surface structure* in relation to their interactions with students during enterprise education: "To be successful, a complete change in mindset is needed, leading to changes in teaching practice" (Ministry of Education, 2105b, p.1). The teachers in the Anderson et al. (2017) study gradually learnt from the intervention to assume more of a mentor role than a traditional teaching role. They reduced the level of control they exerted during the learning process by, for example, reciprocating students' questions with questions instead of simply providing answers. This is summarised by one of the teachers in the study (Anderson et al., 2017):

> It requires a massive shift from teacher-centred to student-centred and the role becomes very difficult to know when to guide and mentor and teach and when to step back and let things happen … It really requires a different skill set, you need to get to know the kids a lot better and be more in a mentor role. (p.40)

Deep and *implicit structure* appears to have changed for this particular teacher as he or she adapted their teaching from a teacher-centred approach to student-centred approach, to meet the needs of students in the enterprise program. Some of the

principals interviewed in the study reported that it was very difficult for some teachers to change their mindset regarding their role as a teacher.

The *surface*, *deep* and *implicit* components of signature pedagogies also align to the earlier quote (Section 2.4) from Raffo et al. (2000) regarding enterprise education as “not just about the formal knowledge transmitted by education and training, it is about a way of acting, a way of understanding and a way of conceiving one’s self-identity”, p.363). It demonstrates that enterprise education is no longer considered to be only about the *surface structure* pedagogy of transmitting knowledge but also the need for teachers to implement a method to impart the *know-how* of entrepreneurship, along with the *professional attitudes, values and dispositions* to be enterprising.

Although originally the concept of signature pedagogies was grounded in preparing university students for their future professions in a holistic way (knowledge, know-how and attitudes, values and dispositions), more recently signature pedagogies have been applied to particular aspects of a profession. For instance, Lucas and Hanson (2016) investigated signature pedagogies for engineering habits of mind and Komoto (2009) examined signature pedagogies in relation to geography skills. The Anderson et al. (2017) study referred to Lucas and Spencer (2017) as applying the signature pedagogies concept to capabilities by encouraging teachers to think about the capability outcomes they wanted for students and then to choose the most appropriate teaching strategy for achieving those capabilities.

It therefore appears possible to apply signature pedagogies to the development of students' enterprising skills and capabilities. If some consistency in signature pedagogies can be determined, teachers may be more successfully guided into the mindset required for enterprise education.

3.4 Conclusion

These theoretical frameworks will provide a lens for examining enterprise education and a structure for analysing the data. The next chapter will outline the methodological approach to how this study will examine the outcomes, pedagogy and possible barriers to implementing enterprise education in NSW Commerce classes, thereby providing a glimpse at enterprise education in the Australian school context.

Chapter 4 Methodologies

4.1 Introduction

This chapter will present the context of the research, plus the design of the research and how it was collected. The chapter will conclude with an overview of the data analysis, including the coding process.

4.2 Context

Large inter-governmental organisations such as the OECD (Krueger, 2015; Penaluna & Penaluna, 2015), the World Bank (Farstad, 2002; Valerio et al., 2014) and the World Economic Forum (Mariotti & Rabuzzi, 2009) have called for an increase in the development of students' enterprising skills and capabilities. In Australia, non-government entities like FYA (2017) and the NSW Business Chamber (2017) are also advocating for schools to include the development of students' enterprise skills.

Due to the influence of both the Australian Curriculum (ACARA 2018a, 2018b) and the NSW Curriculum (Board of Studies NSW, 2013), the most likely place for NSW secondary students to participate in enterprise education is in Years 7-10 Elective Commerce classes for 13-16 year old students. The study therefore focuses on the teachers of these classes.

4.3 Research Design

In the context of the increasing demand for the development of students' enterprise skills and the absence of research into teachers' approaches to enterprise education in Australia, the aim of this study is to understand the teaching environment in which enterprise education operates in schools through empirical data, building upon the knowledge gleaned mainly from the European context. More specifically, it is an investigation of teachers' perspectives towards enterprise education in terms of expected outcomes students can achieve, the instructional strategies involved and any barriers to implementation. The central goal of the research is to determine the extent to which teachers' perspectives of enterprise education for developing students' enterprising skills and capabilities align with the outcomes and teaching methods advocated by the literature. An additional goal is to identify possible signature pedagogies for developing students' enterprise skills.

The research was designed to gain a snapshot of teachers' perceptions of enterprise education in terms of expected student outcomes, pedagogical practices and any barriers to implementation. The research was therefore constructed using the *model of professional teaching and skill* (Gess-Newsome, 2015), a recent rendition of the PCK model. The research questions align with four key areas of this model:

1. *Student outcomes*
    - What are teachers' perspectives of the benefits of enterprise education?
    - What level of importance do teachers ascribe to the development of students' enterprising skills and capabilities?

- Do teachers' perspectives align with the outcomes advocated by academic literature and curriculum documents?

2. *Professional knowledge of instructional strategies*
    - What are the teaching methods teachers view as appropriate for developing students' enterprising skills and capabilities?
    - Do teachers' perspectives of teaching methods for enterprise education match the methods advocated by the literature?
3. *Classroom practice of pedagogy*
    - How do the teaching methods deemed most appropriate by teachers compare to the methods they self-report as being enacted in class?
4. *Amplifiers and filters* (between *topic specific professional knowledge* and *classroom practice*)
    - Do teachers perceive any barriers to implementing enterprise education?
    - How do the teachers' perception of barriers compare to the barriers identified in the literature?

The literature review indicated a lack of teacher voice in enterprise education since their pedagogical actions and the benefits to students garnered more attention. A questionnaire was therefore chosen to implement the questions to allow a fair representation of teachers' perspectives of enterprise education in Commerce classes across NSW schools, across sectors (government and non-government), and geographically (rural and metropolitan). For data regarding outcomes and pedagogy,

there are Likert scale questions for quantitative data and open-ended questions for qualitative data not covered by the Likert scales. The closed Likert scale questions produce quantitative data that allow direct comparison of (1) teachers' perceptions about student outcomes to the outcomes identified in the literature and (2) the teaching methods identified by the teachers as important to the teaching methods reported as used in class. The qualitative data complements the quantitative data by allowing teachers to have a voice beyond items listed in Likert scales and adds to the validity of the research.

4.4 Ethical Considerations

The Macquarie University Human Research Ethics Committee reviewed the research of this thesis and it abides by the regulations of the National Statement on Ethical Conduct in Human Research (Appendix A). The questionnaire met active and informed consent requirements by providing the purpose and procedures of the study at the very start of the online process. The information included that the questionnaire would be anonymous and data would be kept in password protected files. It informed respondents that participation was voluntary and could be discontinued at any time. After reading this information, participants needed to click an 'Agree' button to proceed with the questionnaire. The questionnaire itself included no questions that would normally cause stress, embarrassment or discomfort to participants. The Participant Information and Consent form for the questionnaire is provided in Appendix B. These measures were taken to respect the respondents and to reduce the risk of social desirability bias (Schuman & Presser, 1996) and thus improve the honesty in the responses.

4.5 Research Participants

Commerce is a NSW secondary school subject for Years 7-10. Within this subject's syllabus is an optional topic called 'Running a Business' where "Students become actively engaged in planning, organising and running a small business and develop strategies to address problems as they arise" (Board of Studies NSW, 2003, p.46). There are other parts of the syllabus that may serve to develop students' enterprising skills and capabilities but this topic is the most pertinent. The Australian *F-10 Curriculum Economics and Business* with its rationale including an emphasis on the development of enterprising skills and capabilities, also has an influence on the teaching of Commerce, particularly with NESA currently in the process of integrating the Australian Economics and Business curriculum with a revamped Commerce syllabus (NSW Education Standards Authority, 2018).

Hence, Commerce teachers were targeted for the study, as they are the most likely, given the curriculum, to be conducting a form of enterprise education. In 2015 there were 13,440 HSIE Secondary Teachers in New South Wales (Centre of Education Statistics and Evaluation, 2016, p.40). The majority of HSIE teachers are in the areas of History and Geography. It was estimated approximately a third of HSIE Teachers teach Commerce. The research needed a representative sample. It was estimated that a 100 respondents, over 2% (100/4467) of Commerce Teachers, would be sufficient. An online questionnaire provides the ability to involve a high number of participants in a timely manner and thus gain a reasonable cross section of Commerce teachers in NSW. This will also allow some generalisation of the data for Commerce classes.

It was also considered important that the participating teachers had been teaching Commerce since the publication of the Australian Curriculum for Business and Economics at the end of 2013, to improve the likelihood of their knowledge of this proposed curriculum.

4.6 Instrument Design - Questionnaire

The research was conducted via an online questionnaire constructed in Qualtrics (see Appendix C). The questionnaire design is summarised in Table D1 (Appendix D). The questionnaire focused on three main areas of enterprise education: outcomes, teaching methods and any barriers to implementation.

A questionnaire conducted by Dinning (2015) in a study of university staff was adapted for the Australian secondary school context. Dinning's (2015) study has parallels to this MRES study in terms of investigating teachers' perceptions of outcomes, pedagogies and any barriers encountered with implementing enterprise education. The questions are summarised into two parts below.

4.6.1 Section 1.

- The Participant Information and Consent was provided in the introduction. Participants needed to click an 'Agree' button to go ahead with completing the questionnaire.
- A disqualifier question eliminated participants who had not taught Commerce in the last three years as a sample check.

- Demographic questions were asked to ascertain the nature of the sample. Participants were asked in closed-ended questions about their length of teaching experience according to specified ranges, whether they taught in a government or non-government school and their geographic location (Sydney Metropolitan/Regional City/Rural). Outside NSW was provided as an option for a second chance to exclude participants if they didn't fit the criteria of teaching in NSW.

4.6.2 Section 2.

After the demographic questions, participants were informed that the remaining questions related to "the development of students' skills and capabilities for effective participation in the world of business as entrepreneurs or employees" (Appendix C).

Question 1. What do you believe to be the three most important benefits to your students of enterprise/entrepreneurship education within the curriculum?

Question 2. How important is it for students to develop the following skills and capabilities?

Two questions about the outcomes of enterprise education were posed to check if the respondents' concept of the purpose of enterprise education aligned with curriculum documents and the academic literature. The first of the two questions was an open-ended question to discover any perceived benefits for students not covered by

these documents. The question was designed as open-ended and used the term *benefits* to broaden the scope of possible outcomes beyond syllabus-based individual student achievement.

To measure teachers' perceptions of the importance of enterprise education outcomes, particularly in comparison to the literature, the second outcomes question employed 5-point Likert scales in a battery of stimuli (Saris & Gallhofer, 2014). Ordinal scales were used because the range of the scale produces more variability in results, thereby allowing more scope in comparisons, plus they provide more reliable scores than qualitative data (Johnson & Christensen, 2014). The scaling allows comparisons between responses, such as which skills and capabilities teachers perceive as the most and least important, and provide an overall perception of importance towards the development of students' enterprising skills and capabilities. The stimuli for the outcomes Likert scale question were taken from literature (Anderson et al., 2017; Birdthistle et al., 2007; Bolstad, 2006; McLarty et al., 2010; Moberg, 2014; Ruskovaara & Pihkala, 2013; Seikkula-Leino, 2011) and curriculum documents (ACARA, 2018a, 2018b; Ministry of Education, 2015a; Skolverket, 2011) to enable direct comparison of teachers' perceptions to the literature and the objectives of curriculum. Table D2 provides further detail about the sources of the terms used (Appendix D).

Question 3. To what extent do you agree that the following approaches are appropriate for teaching enterprising skills and capabilities?

Question 4. To what extent do you use the following approaches for teaching enterprising skills and capabilities?

Question 5. OPTIONAL: Please add up to three other teaching approaches you consider to be relevant to teaching enterprising skills and capabilities.

Questions 3 and 4 were both in a battery of stimuli format with each question listing the same items in order to make comparisons between the pedagogical knowledge reported in Question 3 and the self-reported enactment in Question 4. The wording of Question 3 came from the Dinning (2015) study and the researcher modified this question to create Question 4. However, since the wording and scale parameters of the questions differed, the teaching methods were split into passive and active learning methods (Gibb, 1987b; Higgins & Elliott, 2011; Manimala & Thomas, 2017; Mwasalwiba, 2010) to determine a leaning towards passive or active for the teaching methods perceived as appropriate and also for the self-reported use of teaching methods. The active/passive preference for appropriateness of teaching methods will then be contrasted with the self-reported use of active/passive teaching methods. Comparisons will also be made between the pedagogies featured in the literature and the teachers' perception of best-practice pedagogy.

A list of teaching methods formed by Mwasalwiba (2010) from an extensive literature review was used for stimuli instead of Dinning's (2015) list of 20 teaching methods based on Gibb, Hannon, Price and Robertson (2010), a teaching guide

originally published in 2007. The literature review by Mwasalwiba (2010) examined 108 articles. Of these articles, 21 addressed teaching methods used in higher education enterprise education. Mwasalwiba (2010) reduced the 26 teaching methods mentioned to the 13 considered most important (no criteria provided). For this questionnaire, 12 of these 13 methods were listed with some modification for clarification purposes, and one (workshops) was omitted due to its unlikely use in a school setting:

- Business plan creation
- Business simulations
- Case study material
- Discussions and group activity
- Games and competitions
- Guest speakers
- Lectures and theory based lessons
- Project work
- Student presentations
- Students conduct a real business
- Students video and filming
- Visiting a business / businesses (excursion/s)

Since the stimuli listed in the closed-ended batteries of questions for pedagogy came from research conducted eight years earlier in a European university context (Mwasalwiba, 2010), qualitative data was needed in case teachers' perceptions in a current Australian high school context were quite different. Therefore, an open-ended

question regarding teaching methods was included to capture any teaching approaches not covered by the stimuli items in the previous questions and thus not limit the scope of participants' answers to the quantitative data. It was made optional so that participants would only provide teaching methods they believed were important to list.

Question 6. Have you ever experienced barriers in embedding enterprise/ entrepreneurship education into your curriculum?

IF YES, Question 7. What are the three most significant barriers?

To research perceived barriers, a simple yes/no/don't know question was asked to determine if teachers believed barriers impeded the implementation of enterprise education. If teachers had perceived barriers, the question was open regarding the identification of those barriers to encourage honest responses. However, participants were limited to the naming of three barriers to keep the data manageable. Any barriers listed by participants would then be compared to barriers identified in the literature.

The questionnaire concluded with Qualtrics' default note, thanking respondents for their time.

4.6.3 Piloting Procedure.

Before commencement of the recruitment process, critical friends (an IT specialist and a secondary school teacher) tested the questionnaire for functionality, timing and question validity. As a result of the piloting procedure the stimuli listed in the

Likert scale questions were listed in alphabetical order and the wording of the stimuli in the teaching approaches questions were change to be clearer. For example, that the videos and films were students creating them, not viewing them. The suggested timing of the questionnaire also came out of this process.

4.7 Data Collection

Recruitment for participants occurred in three locations:

1. Twitter (the researcher is connected with many Commerce teachers)
2. Facebook via the private group *Commerce, Economics, Business and Legal Studies Teachers Online*
3. The Economics and Business Educators NSW (EBENSW) Annual Conference.

The recruitment went through three stages:

1. The questionnaire was posted to the Facebook page *Commerce, Economics, Business and Legal Studies Teachers Online* (permission gained from site administrators first) and tweeted by the researcher. Fifteen teachers completed the questionnaire at this stage.
2. Two weeks into the recruitment process over 200 attendees of the annual EBENSW Conference received a questionnaire recruitment advertisement in their ‘showbags’ and the researcher promoted the research during the breaks by speaking with a number of attendees. However, no new responses occurred during the week following the conference.

3. Five weeks into the process, the questionnaire was uploaded a second time to the Facebook group page and further tweets were posted. This final round of recruitment was very successful.

After a little over six weeks, Qualtrics recorded 126 questionnaires as completed, thereby meeting the target of over 100 participants. This is 2.8% of the estimated number of NSW Commerce teachers (126/4467).

A limitation of this recruitment process was that the respondents of the questionnaire came from Commerce teachers who are active online for the purpose of teaching (Twitter and Facebook) or attended the EBENSW Conference in Sydney for a fee. This is not necessarily a good sample of Commerce teachers since the respondents could possibly be classified as teachers who are inclined to actively participate in learning from others and/or seeking new resources and therefore could also be more likely to try different forms of teaching. Exacerbating this selection process is that the participants from these groups volunteered to complete the questionnaire, meaning that possibly the most enthusiastic of enthusiastic teachers were sampled from a population of Commerce teachers. The volunteer bias (Salkind, 2010) was addressed by having a short and simple questionnaire, keeping it non-threatening via anonymity and ensuring confidentiality, having the authority of the university behind the questionnaire and the topic may have captured the interest of teachers.

4.8 Overview of data analysis

The qualitative data were categorised and sorted using NVivo12 software. A mix of deductive coding based on the literature and inductive coding took place. The categories, subcategories and code levels followed the practice of Saldaña (2009). After the coding was completed by the researcher, two colleagues (secondary school teachers) were asked to go through the same process independently and some changes were made as a consequence.

Data from the perceived benefits of enterprise education for students were initially coded a priori, according to the outcomes identified via the literature (Anderson et al., 2017; Birdthistle et al., 2007; Bolstad, 2006; McLarty et al., 2010; Moberg, 2014; Ruskovaara & Pihkala, 2013; Seikkula-Leino, 2011) and curriculum documents (ACARA, 2018a, 2018b; Ministry of Education, 2015a; Skolverket, 2011). The remaining data were inductively coded. The broader categories of skills, attributes (attitudes in the original) and knowledge and understanding came from a series of literature (Eurydice network, 2012; Gibb, 1993; Heinonen & Poikkijoki, 2006; Marques & Albuquerque, 2012) that stem back to a table labelled *What Can be Learned through Enterprise* in a manual developed for school teachers at Durham University Business School (Cotton, 1991). As a result of the independent colleagues' coding, the number of categories were reduced, the *other* categories had less data, skills were split clearly into *entrepreneurial/business skills* and *enterprise skills* and the *Learning Experience* category was created. See Table D3 for the coding in detail (Appendix D).

All the data for the optional contributions to additional teaching approaches were inductively coded with 64 responses in 23 categories. There were also discrepancies with how the researcher and her colleagues coded so the final categories were decided upon together.

If respondents identified the existence of barriers to embedding enterprise education they were asked to provide up to three barriers in an open-ended question. This question was replicated from Dinning (2015) who had created a cluster mind-map on the basis of the responses. However, there was only a minimal overlap of the categories in Dinning's (2015) cluster mind-map with the Commerce teachers' responses. Therefore inductive coding took place. There was close alignment between the researcher and her colleagues in coding for this question with only two minor changes made. The coding can be seen in Table D4 (Appendix D).

The quantitative data were analysed with Excel spreadsheets and IBM SPSS software.

4.9 Conclusion

This study employed an online questionnaire to gain an understanding of Commerce teachers' perspectives of enterprise education in terms of outcomes, pedagogy and possible barriers to implementation. A thorough coding process was required to analyse the qualitative data and software was used to analyse the quantitative data. The results of the analysis will be covered in the next chapter.

Chapter 5 Results

5.1 Introduction

This chapter presents the data processed from the questionnaire. It will start with an overview of data included for analysis and a description of the sample. It will then present the research findings in the three areas of enterprise education being studied: outcomes, teaching methods and barriers encountered. Key results will be summarised to conclude the chapter.

5.2 Overview

There were 126 teachers who commenced the questionnaire. Two were excluded by the questionnaire mechanism since they had not taught Commerce in the last three years. Two other participants eliminated themselves at the same point. Most significantly, a third of participants (43/126) discontinued with the questionnaire once they reached the questions pertaining to enterprise education. This high non-completion rate may be indicative of teachers not perceiving themselves as being responsible for developing Commerce students' enterprising skills and capabilities. For instance, not all teachers would cover the optional topic of *Running a Business*. A comparison of the demographics of the teachers who completed the questionnaire to those who didn't complete it, revealed an insignificant variance. This left 83 respondents who completed the questionnaire in full.

5.3 Demographic Data

Table 1 shows the data collected from Commerce teachers in comparison to statistics of secondary teachers across all sectors obtained from the NSW Department of Education. It illustrates a close match in terms of school sector and teachers with five or less years' experience. However, teachers who completed the questionnaire were slightly more likely to live in a city than teachers in general (83% rather than 75%) and the proportion of teachers with 6-10 years' experience to those with more than 10 years' experience was much higher in the questionnaire than the entire population of secondary teachers in NSW. One could speculate that this is due to the questionnaire being in an online format and recruitment occurring via social media but just as easily it could be due to Commerce teachers not staying in the profession as long as teachers overall. It can be concluded that the participants were generally less experienced and slightly more likely to live in metropolitan areas than NSW secondary teachers across all subjects.

Table 1

Demographic data

Criteria	**EE Questionnaire**	**NSW DET Data 2015[a] or 2016[b]**
Experience		
0 - 2 years	11%	
3 - 5 years	12%	21%[a]
6 -10 years	31%	17%[a]
11 or more years	46%	61%[a]

Location		
Metropolitan Sydney	66%	75%[a]
Regional City	17%	
Rural/Provincial	17%	25%[ac]
School Sector		
Government	48%	58%[b]
Non-Government	52%	42%[b]

[a] Centre for Education Statistics and Evaluation (2016)

[b] NSW Department of Education (2017)

[c] Includes DET category of 'remote'

The demographic data were collected to ensure participants were broadly representative of Commerce.

5.4 Outcomes

The outcomes section of the questionnaire consisted of two components. The first was an open-ended gathering of teachers' perspectives of the benefits of enterprise education for students and the second asked them to indicate the degree of importance on a Likert scale of a range of enterprising skills and capabilities identified in the literature and in curriculum documents as important for school students to develop.

5.4.1 Question 1.

What do you believe to be the three most important benefits to your students of enterprise/entrepreneurship education within the curriculum?

Teachers were asked to outline what they believed to be the three most important benefits to their students of enterprise/entrepreneurship education within the curriculum, resulting in 249 (3 x 83) responses. Table D3 provides the coding distribution of the

responses (Appendix D). Figure 2 illustrates in descending order the distribution of responses in parent categories. A range of skills (39%) were identified most often as benefits of enterprise education. They were followed by knowledge and understanding items (21%), learning experiences (20%), attributes (8%), future ready (7%) and other (non-categorised) (5%). Teachers presented a vast range of benefits they perceived as arising from enterprise education. The three categories developed from the literature (knowledge and understanding, skills and attributes) accounted for 68% of the responses. The future ready responses (7%) suggest teachers are to an extent aware of the work-related context of enterprise education (where students are viewed as human capital). It was the category of learning experiences that deviated from the focus of the literature to the greatest extent with the real world, relevant, authentic and practical application of enterprise education featuring. Teachers also indicated the benefits of enterprise education as being accessible to a wide range of students, that it could be easily personalised for students and that it was challenging and engaging.

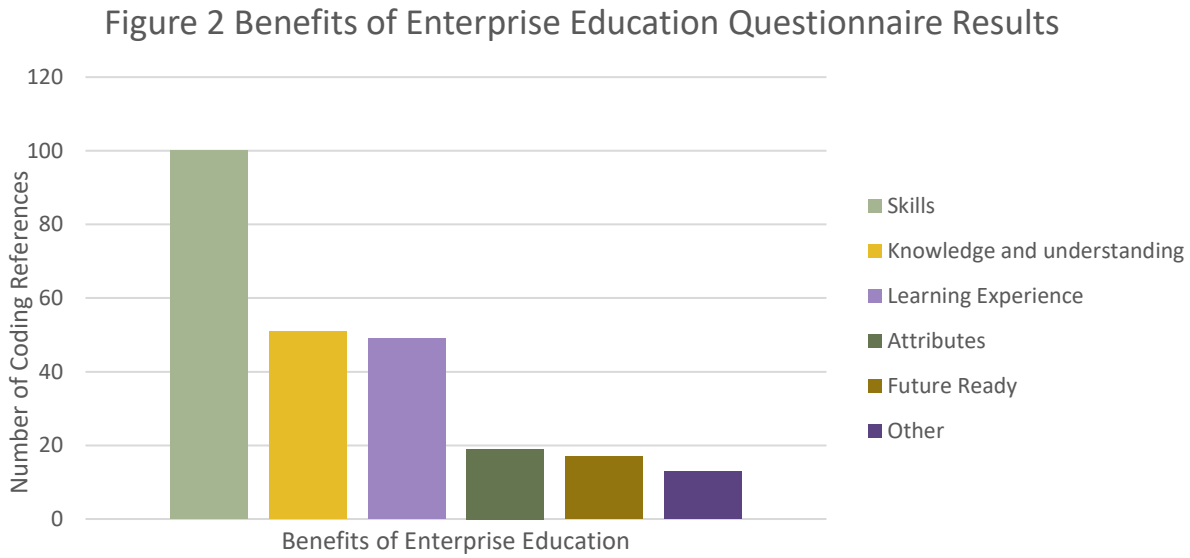

Figure 2 Benefits of enterprise education - questionnaire responses

Skills.

The overwhelming majority of responses were categorised as *skills*. Of these, 12% were entrepreneurial or general business skills and 26% were very general (e.g. life skills or 21st century skills) or covered a number of skills in one entry. Of the remaining, more specific skills identified by participants, 41% matched skills consistently listed in literature and curriculum with problem-solving and teamwork featuring. Critical and creative thinking (21% of skills), one of the general capabilities in the Australian Curriculum (ACARA, 2013), was prominent in responses classified as skills.

Knowledge and Understanding.

The next largest category of benefits to students, but at half the number of items of *skills*, was *knowledge and understanding*. Most of these items were recognisable as content from the Commerce syllabus (Board of Studies NSW, 2003). Approximately one third fell into the area of consumer and financial literacy (17/51) while the remaining two thirds (34/51) were of a wide variety (e.g. global links) or very general in nature (e.g. basic knowledge).

Learning Experiences.

A similar sized category to knowledge and understanding was *learning experiences*. The contributions in this category were not about students' individual gains from enterprise education but about the benefits of the learning process with real word experience dominating the category (60%). Words such as practical, authentic, accessible, engaging and personalised were associated with learning through enterprise education.

Attributes.

Attributes is the third category of student learning from the literature. Yet, it was significantly behind the previous three categories at less than half of the learning experiences and a fifth of skills. Only seven items matched attributes identified in the literature and curriculum with a further 12 requiring their own categories, such as *self-reliance* and *a new perspective*.

Future Ready.

The inductive category coding of *future ready* aligns with the call from institutions such as FYA (2017) and NSW Business Chamber (2017) to prepare students for the workplace and post-school life in general. This is best illustrated with a word cloud indicating the focus in these responses (Figure 3).

Future Ready Word Cloud

Figure 3 Word cloud of responses coded as 'future ready'

Other (non-categorised).

There were 14 responses that could not be categorised due to the ambiguity or irrelevance or irrelevance response.

5.4.2 Question 2.

How important is it for students to develop the following skills and capabilities?

Table 2 and Figure 4 illustrate the order of perceived importance of a set of enterprising skills and capabilities for students to develop, based on the means gained from the 5-point Likert scale responses of participants. *Communication* was a clear leader with 83% of participants declaring it to be very important, even though only five respondents thought to list it as a benefit of enterprise education in the previous question. Significantly behind *communication*, 63% of participants found *teamwork* and *resilience* very important but *problem solving* came between the two for third place on the basis of means. Teamwork and problem solving featured in the first question's responses but only one person mentioned *resilience* as a benefit of enterprise education. *Leadership* was considered the least important with the only mean below four (slightly important). Only three respondents identified any of the skills and capabilities as below moderately important, one each at slightly important: *curiosity*, *open to change* and *resilience*.

Table 2

Importance of skills and capabilities

	n	**Min.**	**Max.**	**Mean**	**Std Deviation**
Communication	83	3	5	4.82	.417
Problem solving	83	3	5	4.60	.517
Teamwork	83	3	5	4.60	.540
Resilience	83	2	5	4.58	.607
Pride	83	3	5	4.42	.627
Initiative	83	3	5	4.42	.646
Open to change	83	2	5	4.28	.668
Curiosity	83	2	5	4.22	.716
Creativity	83	3	5	4.19	.653
Innovation	83	3	5	4.11	.699
Negotiation	83	3	5	4.02	.643
Leadership	83	3	5	3.88	.705

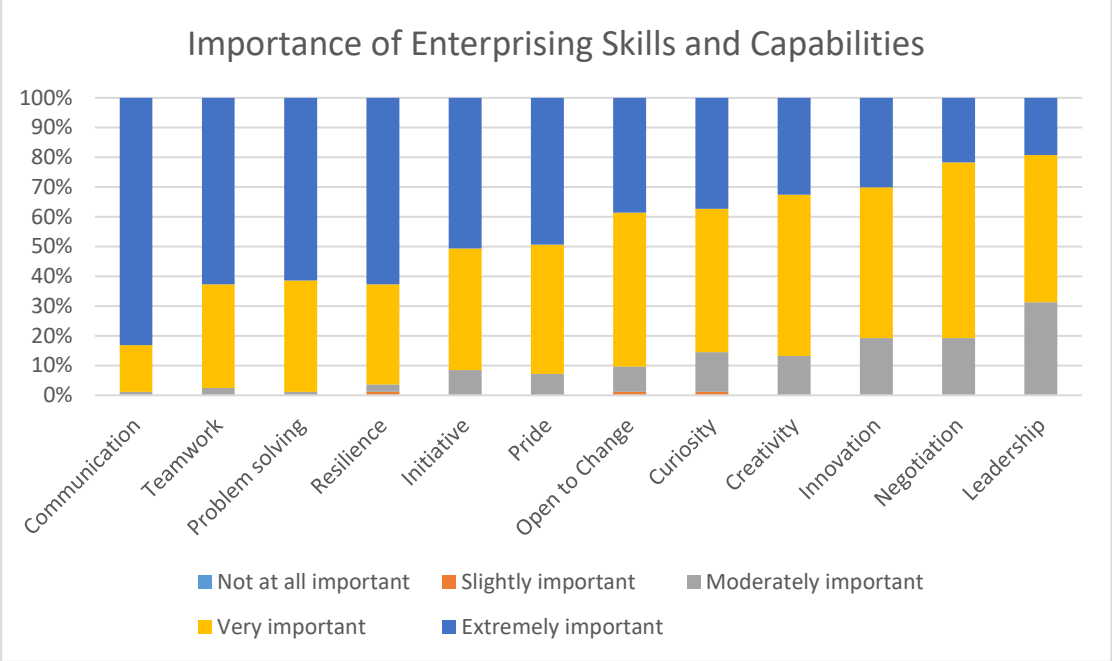

Figure 4 Importance of enterprising skills and capabilities - questionnaire responses

5.5 Pedagogy

The pedagogies section of the questionnaire consisted of two batteries of 5-point Likert scales based on the same stimuli of teaching approaches from Mwasalwiba (2010), plus a third question to allow participants to contribute teaching methods they perceived as relevant to enterprise education that were not covered in the previous questions.

5.5.1 Question 3.

To what extent do you agree that the following approaches are appropriate for teaching enterprising skills and capabilities?

Table 3 and Figure 5 illustrate the order of the extent teachers agreed with the appropriateness of a range of teaching methods, based on the means gained from the Likert scale responses of participants. The means differed by less than one with *discussions and group activity* plus *case study material* being the most prevalent at *strongly agree*. All other items' means rounded to *somewhat agree*. *Lectures and theory*

based lessons were last in terms of mean, the lowest response in the *strongly disagree* zone (16%) and the only method more than 2% in the *disagree* range (11%). The only *strongly disagree* indicated for any of the teaching methods were by the one respondent who disagreed with all teaching methods and was thus a large outlier and was not consistent in context of the other data for this respondent.

Table 3

Teachers' perspectives of appropriate teaching methods for developing students' enterprising skills and capabilities

	n	**Min.**	**Max.**	**Mean**	**Std deviation**
Discussion/group activity	83	2	5	4.59	.606
Case study material	83	2	5	4.57	.609
Student projects	83	1	5	4.47	.738
Student ran business	83	1	5	4.40	.855
Business simulations	83	1	5	4.29	.789
Student presentations	83	1	5	4.28	.770
Business plan creation	83	1	5	4.19	.772
Guest speakers	83	1	5	4.19	.818
Games and competitions	83	1	5	4.18	.814
Excursions	83	1	5	4.14	.783
Students video/filming	83	2	5	3.87	.777
Lectures and theory	83	2	5	3.72	.860

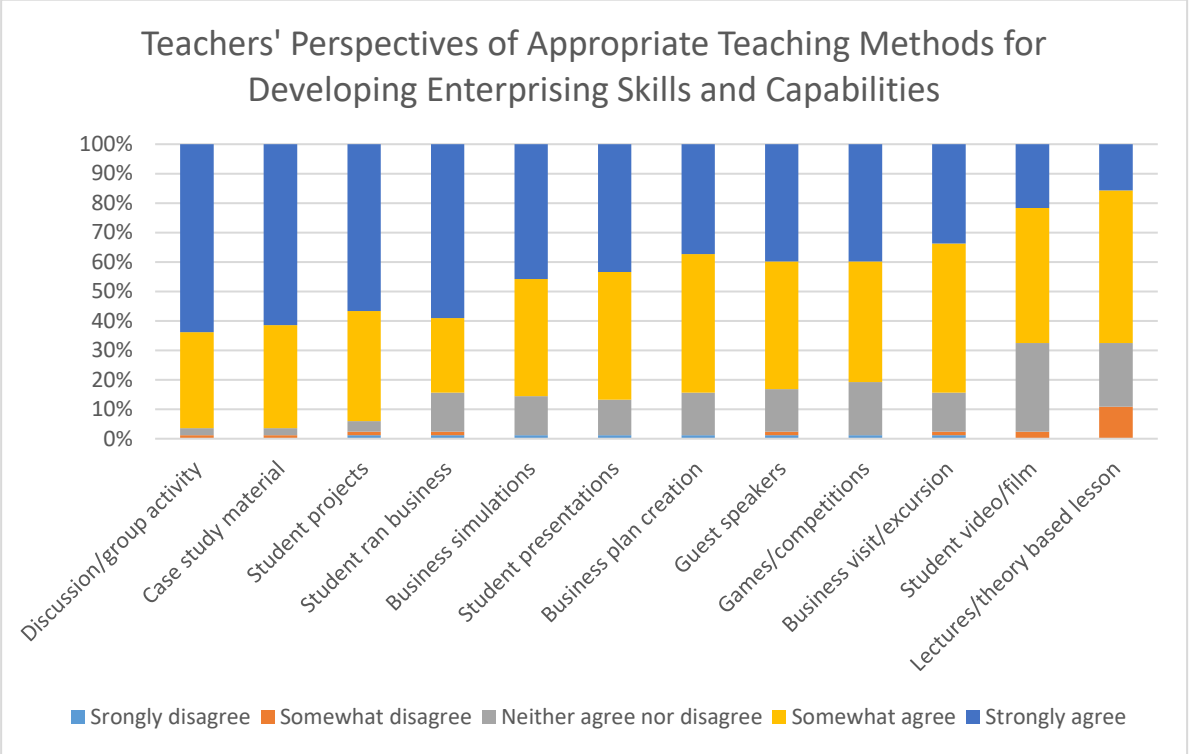

Figure 5 Teachers' perspectives of appropriate teaching methods for developing students' enterprising skills and capabilities - questionnaire responses

5.5.2 Question 4.

To what extent do you use the following approaches for teaching enterprising skills and capabilities?

Table 4 and Figure 6 illustrate the order of the extent teachers self-reported the use of a range of teaching methods, left to right, based on the means gained from the Likert scale responses of participants. According to the teachers, on average they used *discussion and group activity* the most, *case study material* the second most and *student projects* third, demonstrating an alignment between perception of effectiveness and self-reported practice for these teaching approaches. The alignment of the data from these two questions discontinued from this point. Guest speakers and excursions were used the least.

Table 4

Self-reported use of teaching methods for developing students' enterprising skills and capabilities

	n	**Min.**	**Max.**	**Mean**	**Std Deviation**
Discussion/group activity	83	1	5	4.45	.737
Case study material	83	1	5	4.29	.708
Student projects	83	1	5	4.04	.903
Student presentations	83	1	5	3.72	.874
Lectures and theory	83	1	5	3.63	.984
Business plan creation	83	1	5	3.48	.888
Business simulations	83	1	5	3.46	1.004
Games and competitions	83	1	5	3.46	.901
Student ran business	83	1	5	3.33	1.149
Students video/filming	83	1	5	2.87	1.009
Excursions	83	1	5	2.71	1.030
Guest speakers	83	1	5	2.69	.987

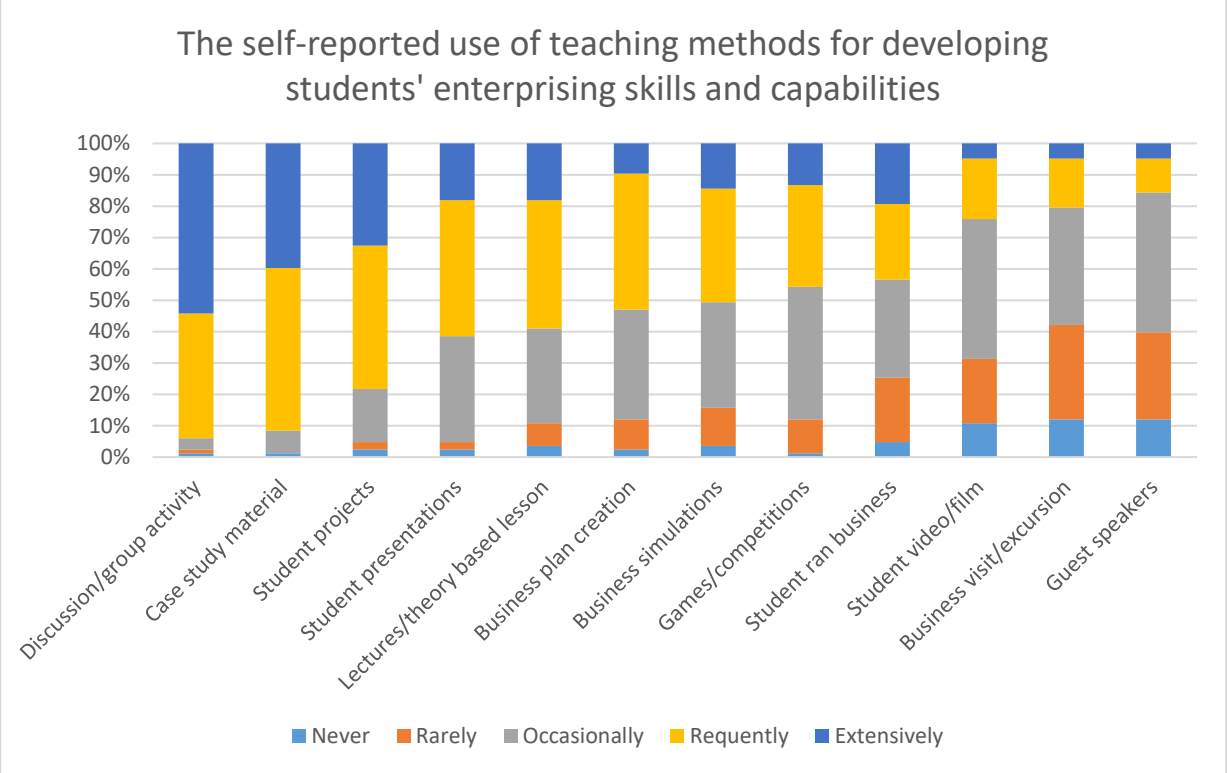

Figure 6 Self-reported use of teaching methods for developing students' enterprising skills and capabilities - questionnaire responses

5.5.3 Comparing pedagogical knowledge to pedagogical enactment.

The stimuli of teaching methods provided for questions four and five were divided into active and passive learning (see Table 5) as guided by Manimala and Thomas (2017) and Mwasalwiba (2010). This dichotomy is prominent in the literature with experiential learning often advocated as an example of active learning in contrast to traditional passive learning (Higgins et al., 2018; Mwasalwiba, 2010). It is recognised that any of these methods may support student learning. As noted in Chapter 2, there is little empirical research in this area.

Table 5

Active and passive learning

Active	Passive
Business plan creation	Case study material
Business simulations	Guest speakers
Discussions and group activity	Lectures and theory based lessons
Games and competitions	Students visiting a business/es (excursion)
Project work	
Student presentations	
Students conduct a real business	
Students video and filming	

The average scale ratings for teaching methods in terms of active or passive learning were compared to determine a numerical value where zero was exactly neutral. If the value was between -0.5 and +0.5 the teachers were grouped as being neutral in teaching method preference, greater than 0.5 as believing active learning was best-practice and below -0.5 as believing passive learning as best-practice. See Table 6.

The differences between active and passive learning for teaching methods used in class were calculated the same way to determine the leaning of active/passive self-reported pedagogy as enacted.

Table 6

Active/passive teaching methods

Teaching Preference Numerical Rating	Teaching Grouping	Perception of Teaching Method Appropriateness No. of teachers	Self-Reported Use of Teaching Methods No. of teachers
< -0.5	Passive learning	12	55
-0.5 - 0.5	Neutral approach	62	27
> 0.5	Active learning	9	1

The difference between the numerical ratings for each teacher was calculated to determine the direction of change from perceived appropriateness of teaching methods to the self-reported use of teaching methods. All but five of the teachers were more passive in their enactment of pedagogy than their perception of best-practice. Of those five, three were more active and two remained the same level with one being active in perception of best-practice and self-reported enactment and the other passive. Neither responded with the exact same responses for both questions' stimuli.

The size of the gap between perceived best-practice and self-reported use of teaching methods was most for the active group of perceived appropriate teaching method and least for the passive group, as seen in Table 7.

Table 7

Enactment gap by grouping

Grouping for Perception of Teaching Method	Perception of Teaching Method Appropriateness Rating Average	Self-Reported Use of Teaching Methods Rating Average	Difference
Passive learning	-0.78	-1.39	-0.60
Neutral approach	0.37	-0.84	-0.87
Active learning	0.69	-0.28	-0.97

When this data is graphed for each participant from most passive to most active learning methods deemed appropriate (Figure 7), the enactment gap (the difference between best-practice pedagogy and the pedagogy as enacted in class) is clear, even when allowing for four obvious outliers. The blue scattered plots run along the x axis from the most passive to the most active teaching methods perceived as the most appropriate (best-practice) for enterprise education. Below -0.5 on the y axis is considered as leaning towards a passive teaching approach and above 0.5 as leaning towards active teaching approaches. The orange scattered plots are the self-reported use of teaching methods for enterprise education, also from most passive to most active according to the perceived best-practice point. All but two of the orange dots lie below the blue dots, suggesting the teaching methods enacted are significantly more passive than the preferred methods for developing students' enterprising skills and capabilities.

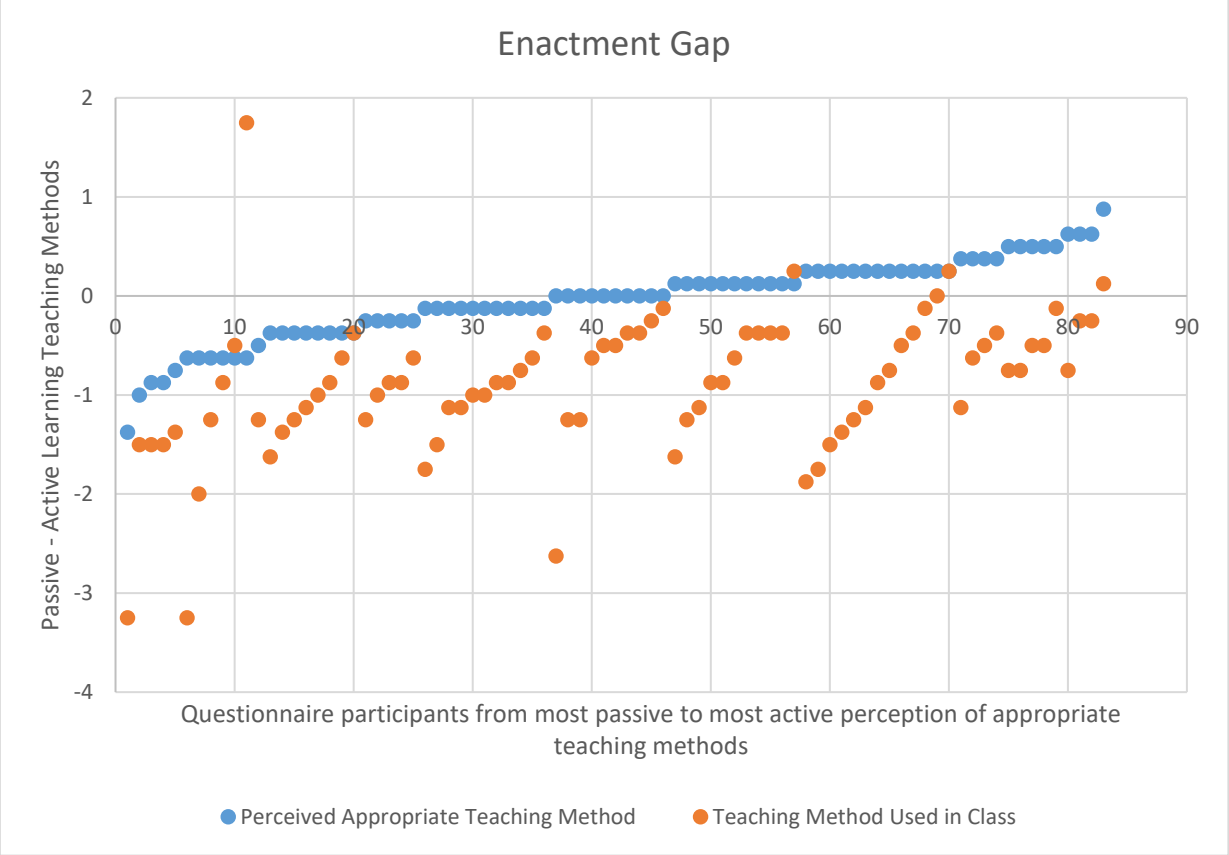

Figure 7 Enactment gap by participant

On an item by item basis, the means for each question were calculated and compared (Figure 8). The number calculated is not important due to the incomparable wording of the Likert scales used in the questions but the relative magnitude of the gaps of the items can be compared. Additionally, due to the wording in Question 4 being about the “extent of use” the questionnaire encountered a similar problem to the Ruskovaara & Pihkala (2013) where respondents were asked the number of times they had used particular methods of teaching. This can be seen with the largest gaps (between perceived appropriateness of methods and those actually used) occurring for guest speakers and excursions which are administrative burdens to organise. This puts into context how *lectures and theory based lessons* moved up the rankings upon enactment.

The gap encountered with this method was the least of all, implying teachers have little desire, relative to the other methods, of implementing it more than they do currently. The next three smallest gaps were the teaching methods ranked in the top three for both the most appropriate and used in class, suggesting minimal desire for further implementation. Therefore, it is the more experiential learning methods in the middle (*student ran businesses*, *student video and filming*, *business simulations*, *business plan creations* and *student presentations*) that teachers perceive as appropriate for developing students' enterprising skills and capabilities, yet underutilised.

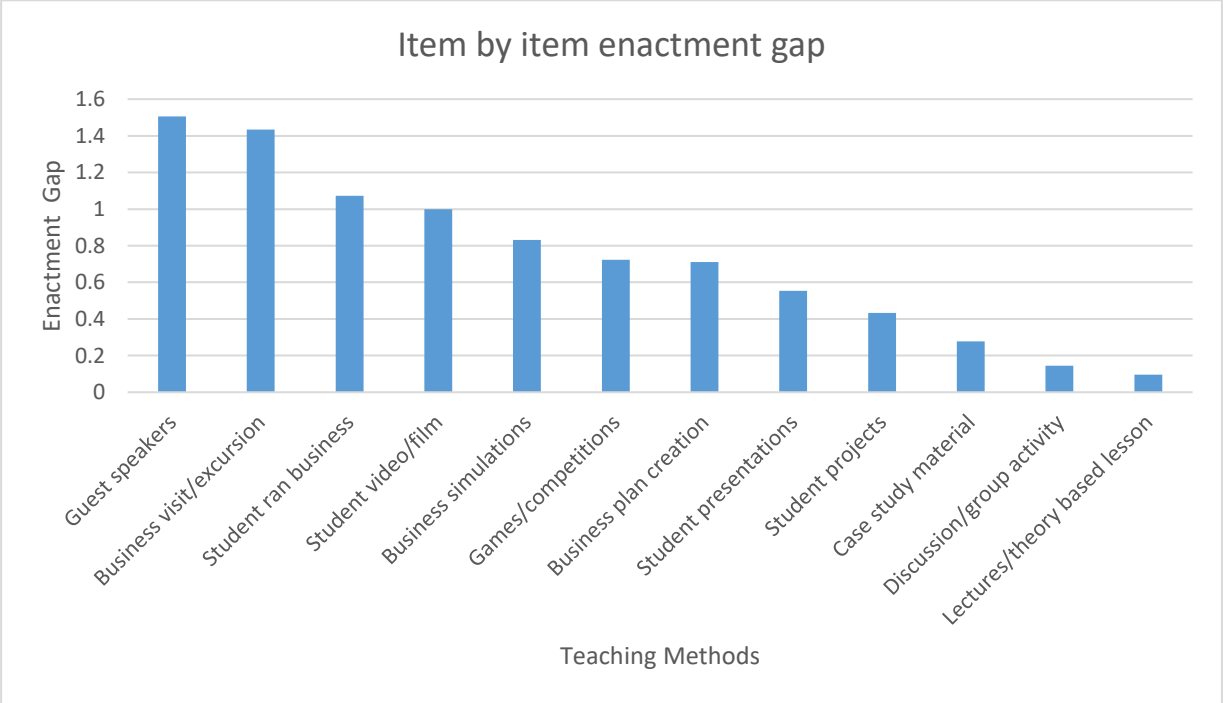

Figure 8 Item by item enactment gap

5.5.4 Question 5.

OPTIONAL: Please add up to three other teaching approaches you consider to be relevant to teaching enterprising skills and capabilities.

There were 28 respondents (34%) who opted to contribute additional teaching approaches they considered to be relevant for teaching enterprising skills and capabilities, resulting in 64 items in total, of which 18 items were not useful and thus eliminated. The remaining data were categorised via NVivo12 software. The responses are organised into 20 categories, listed in Table 8. The three most popular were *research,* the use of *media* (e.g. newspapers and watching *Shark Tank*) and *participation in a business related activity* (e.g. social entrepreneurship, product sampling and work experience). *Research* and *media* could be combined if the intent was to use media as research but this was not clear from the responses.

Table 8

Coding of additional teaching approaches

Teaching Method	Count
Research	7
Media e.g. newspapers, watching *Shark Tank*	6
Participation in a business related activity e.g. social entrepreneurship, product sampling, work experience	6
Financial related activities	4
Problem solving activities	3
Technology related activities	3
Cross-curricular activities	2
Marketing activities	2
Shark Tank type activities	2
Assessment related methods	1
Business mentors	1
Demonstrations	1
Design thinking	1
External provider	1
Inquiry based learning	1
Peer to peer activities	1
Revision	1
Role play	1
Thinking routines	1
Using students' prior knowledge	1

5.6 Barriers

This section of the questionnaire consisted of a question regarding the existence of barriers to implementing enterprise education and if the teachers responded that they had, a second question asked for them to identify the most significant (up to three).

5.6.1 Question 6.

Have you ever experienced barriers in embedding enterprise/entrepreneurship education into your curriculum?

Table 9 shows 42% of respondents perceived barriers in embedding enterprise education, 43% did not and 12% reported they didn't know if they had.

Table 9

Barriers encountered - questionnaire responses

	No.	%	Dinning (2005) %
Yes	35	42%	27.5%
No	36	43%	42.5%
Don't Know	12	14%	30%

5.6.2 Question 7.

What are the three most significant barriers?

This question was only asked if participants answered positively in the previous question. Of the 35 participants who perceived barriers, 93 responses were provided. Figure 9 provides a graphic image of these responses. Table D4 provides the coding

categories and their associated numbers (Appendix D). Examples were added to the table to provide more depth.

Time was clearly the biggest issue but the *school structure* (e.g. annual calendar and timetables), *access to resources* and *curriculum* restrictions were also significant barriers. To a lesser extent *student engagement* (students' beliefs and behaviours are part of the *amplifiers and filters* students subject *classroom practice* which then affects student outcomes), *cost*, *school culture* (exams, resistance of colleagues) and the lack of support from senior *leadership* were also of concern.

Barriers Word Cloud

Figure 9 Word cloud of self-reported barriers - questionnaire responses

5.7 Conclusion

In summary, the findings from the questionnaire are:

- The outcomes section implies a reasonable alignment with the outcomes advocated in the literature but with the interesting addition of teachers suggesting benefits beyond the development of students' enterprising skills and capabilities, particularly the benefits enterprise education has for the overall learning experience.
- The three most prominent teaching methods considered appropriate for developing students' enterprising skills and capabilities were the same for the teaching methods practiced in class. *Lectures and theory lessons* were perceived as the least appropriate teaching method. However, these approaches came in the top half of methods reported as being used in class. This was indicative of the enactment gap found overall by comparing the active/passive inclination of perceived best-practice pedagogy to self-reported enacted pedagogy.
- Over 40% of the teachers reported encountering barriers when implementing enterprise education, citing *time* restrictions as their biggest impediment.
- One third of questionnaire participants did not continue past the introductory questions to the enterprise education questions. This may indicate a significant number of Commerce teachers do not have enterprise education as an objective in their classes.

The following chapter provides a discussion of the implications of the above results.

Chapter 6 Discussion

6.1 Introduction

This chapter presents a discussion of the implications of this study organised around the key themes of outcomes, pedagogy and barriers and through the lens of PCK as depicted in the *model of professional teaching and skill* (Gess-Newsome, 2015) presented in Figure 1 (Chapter 3). There will be a particular focus on *topic specific professional knowledge*, *classroom practice* in terms of *enactment* and the *amplifiers and filters* between them.

6.2 The Evolvement of Enterprise Education

The literature review outlined the confusions and struggles of the philosophical approaches to enterprise education. Originally enterprise education was firmly planted in a traditional knowledge transmission model of pedagogy, where entrepreneurship and the traits of an entrepreneur were set as a particular way of being, as facts. This knowledge was to be learnt and understood and then used once the student entered the real world of business. Pedagogical philosophies changed over time so that Gibb (2002b) and others began advocating for a more activity-based mode of learning. However, it wasn't just about the pedagogy, it was the concept that success in business was more than knowing *about* business, entrepreneurship and what it takes to be an entrepreneur. It was also about embodying enterprise in action, behaviour and attitude, as well as thought. In other words, enterprise education is evolving into the modern PCK model of *topic specific professional knowledge* encompassing instructional strategies,

content representations, student understandings, plus the practices and habits of mind of an entrepreneur.

6.3 Outcomes

The range of responses provided by teachers echo the approaches to enterprise education found in the literature and curriculum. Many of the responses (21% of benefits listed) used wording from the Commerce syllabus (Board of Studies NSW, 2003), demonstrating teachers' content knowledge. Yet it was business, entrepreneurial and enterprising skills that were considered to be more beneficial than all other categories (39% of benefits) and ascribed a great deal of importance in the Likert scales. This suggests that the individual skill development of students is the key focus for teachers, as it was in the literature. Skills were mainly offered in broad terms by teachers but when their responses were more nuanced, students' *critical and creative thinking*, *problem-solving*, *teamwork* and *innovation* stood out as the key perceived benefits of enterprise education. It can be seen that with *critical and creative thinking* also being one of the general capabilities required to be covered under the Australian Curriculum (ACARA, 2013) and the other three skills (*problem-solving, teamwork* and *innovation*) featuring in enterprise education literature and curriculum (Anderson et al., 2017; Birdthistle et al., 2007; Bolstad, 2006; McLarty et al., 2010; Ruskovaara & Pihkala, 2013; Seikkula-Leino, 2011), Commerce teachers have sound *topic specific professional knowledge* of enterprise education outcomes with a reasonable balance between knowledge and skills (*practices* and *habits of mind*). The high ratings of all skill items in the Likert scale questions indicate the importance to Commerce teachers of developing students' enterprising skills and capabilities.

However, with a fifth of the responses focusing on the benefits of the *learning experiences* in enterprise education, it serves as a reminder that education involves more than the human capital production of skilled and knowledgeable students who have achieved specific outcomes. It is also a process that involves young people experiencing everyday participation in the school system. Student engagement and inclusion appears to be important to teachers, particularly in a process of real world, relevant, authentic and practical learning. This highlights the importance of culture and context in the classroom.

6.4 Pedagogy and the enactment gap

The findings suggest Commerce teachers are quite traditional in their approach to teaching enterprise education, with *discussions and group activities* and *case study material* ranking highly in what they perceived as appropriate teaching methods and implemented in class. However, *lectures and theory based lessons* ranked last in perceived appropriateness and fifth (of 12) in enactment which is in stark contrast to the literature which often presents lectures as the most utilized method for enterprise education, at least at the higher education level (Hytti and O'Gorman, 2004; Mwasalwiba, 2010). Since *lectures and theory based lessons* had the lowest margin of difference between perceived appropriateness and use, the implication is that there is little desire to increase usage and that teachers are aiming to engage students to more actively participate in learning. In the main, the findings reveal an enactment gap between *topic specific professional knowledge* and *classroom practice* suggesting that teachers would like to implement more experiential learning approaches to develop students'

enterprising skills and capabilities, which is supported by the literature (Anderson et al., 2017; Seikkula-Leino, 2011).

The largest enactment gaps revealed by the questionnaire occurred with *guest speakers* and *business visits or excursions*. This suggests that these two instructional strategies are desired by teachers much more than they are able to implement them. It is likely that in contrast to the claim made by Ruskovaara and Pihkala (2013) that such activities are easy for teachers to organise, making connections and organising such events is actually quite cumbersome. One teacher observed that “excursions are a nightmare to organise now” (Respondent 1) and seven of the participating teachers noted that having access to guest speakers and businesses was a barrier to implementing enterprise education.

Contrary to the findings of the enactment gap, when teachers had the option to suggest other teaching methods that would be appropriate for enterprise education, the top two categories were *research* and *media* (e.g. watching film and TV or reading newspaper articles). The responses in these categories were more in line with learning *about* or *for* enterprise than experiential learning approaches *through* enterprise. Experiential learning made an appearance in teachers’ responses with specific business activities listed in the third highest category, such as *product sampling*, which could be part of learning *for* or *through* enterprise. The remaining methods were diverse in nature, indicating the vast range of instructional strategies in enterprise education.

These findings highlight the difficulties in attempting to determine for enterprise education any signature pedagogies - the teaching methods associated with the development of the ways of thinking, performing and acting with integrity for particular professions (Shulman, 2005). There is general consensus regarding teachers' beliefs about the skills and capabilities desired in enterprise education, meaning the *implicit structure* component of signature pedagogies has consistency but the *surface* and *deep structures* of *how* to teach lack congruity. For instance, the questionnaire data reveals *student-ran business* as one of the more controversial teaching methods with the second highest standard deviation in perceived appropriateness and the most in enactment. On a means basis, it ranked fourth for appropriateness but ninth in enactment. This result suggests that there is some disparity in attitudes towards a *through* enterprise teaching approach. However, the strong results in perceived appropriateness across all 12 teaching methods listed in Question 3 of the questionnaire suggest that signature pedagogies for developing students' enterprising skills and capabilities include pedagogies for the three approaches of *about/for/through* enterprise. The difficulties with developing signature pedagogies may arise with the differing objectives in enterprise education where traditional teaching approaches have been found to be more appropriate for enterprise knowledge and more experiential approaches for enterprise skills (Harris et al., 2000; Raffo et al., 2000) or student engagement (Moberg, 2014), although the survey questions focused on the objective of developing students' skills and capabilities. Even if the skills and capabilities were separated from the knowledge component of enterprise education to narrow the signature pedagogies to a more specific area, like Lucas and Hanson (2016) for engineering habits of mind and Komoto (2009) for geography skills, the range of

pedagogies revealed are broad in scope. Fayolle (2008) warned that until more assessment of enterprise education has been conducted it will be difficult to declare that a distinct pedagogical approach is most appropriate, particularly given how much it would depend “on the objectives, contents and constraints imposed by the institutional context” (p.329). The effectiveness of teaching methods have not been assessed in this study. Overall, there is not a strong enough indication to declare signature pedagogies exist for developing students’ enterprising skills and capabilities in schools. Yet it is clear that teachers would like to be implementing more innovative and dynamic activities than they currently employ.

6.5 Barriers

Barriers in embedding enterprise education were perceived by 42% of respondents which is significantly more than Dinning’s (2015) findings of 27.5%. However, Dinning was investigating a university where enterprise education was expected to be embedded across all subjects, whereas this study of NSW Commerce teachers was examining barriers in the context of a particular subject.

Since close to half of the participating teachers indicated perceived barriers to implementing enterprise education, this suggests there are a number of contextual and situational factors acting as *amplifiers and filters* to the implementation of the instructional strategies perceived as best-practice. *Amplifiers and filters* include context and teacher beliefs and orientation. In contrast to earlier studies (Birdthistle et al., 2007; Ruskovaara & Pihkala, 2013; Seikkula-Leino, 2011), *teacher expertise* was not really indicated as a barrier to implementing enterprise education with only one response in

the questionnaire suggesting the lack of training as a barrier. *Time* was the dominant word in the responses, as seen in the word cloud of Figure 9. This was often identified by respondents as time constraints in general but also encompassed specific references to administrative work, organising excursions and planning time. Time is also a factor with schools so tightly constructed on the basis of timetables and the annual school calendar, teachers found it difficult to schedule entrepreneurial activities into the school year. For example, “timing with other school activities” (Respondent 5) was identified as a barrier. Time to plan was also a particular concern for participants in the McLarty (2010) study. Lee et al. (2015) and McLarty et al. (2010) also referred to time issues but it appears more prominent as a barrier for participants in this questionnaire compared to the literature coming out of schools in Europe. The Australian study completed by Anderson et al. (2017), had time and competing priorities as a prominent factor preventing teachers from embracing enterprise education. Perhaps time restrictions are a particular issue for Australian schools and needs to be investigated further.

In addition to the access to guest speakers and businesses, mentioned above, *access to resources* in the more general sense were also identified as a barrier by questionnaire participants. McLarty et al. (2010) found a perception that enterprise education had difficulty competing for school resources due to “lack of parity with ‘real’ subjects” (p.4) which may explain some of the resource restrictions revealed by the questionnaire results.

McLarty et al. (2010) also found an issue with a crowded curriculum hindering the implementation of enterprise education. As identified in the introduction of this study

(Section 1.5.3), there are appropriate ideals for enterprise education in the curriculum applicable to Commerce teachers. However, the syllabus content appears to restrict or discourage teachers from implementing teaching methods for developing students' enterprising skills and capabilities, as evident in some of the comments by teachers in response to the question regarding barriers:

- "Curriculum is outdated" (Respondent 8)
- "Content is often irrelevant" (Respondent 13)
- "Restrictions in the syllabus" (Respondent 75)

This sets up a conflict between the *teacher professional knowledge base* of curricular and *personal PCK* associated with enterprise education.

Some Commerce teachers claimed student engagement and a wide variety of students' abilities as barriers to implementation, possibly reflecting some teachers' beliefs and orientation towards enterprise education. This is in contrast to the teachers who perceived some of the benefits of enterprise education as the inclusive and engaging nature of it, which suggests the role classroom context plays in teachers' perceptions. Only a few teachers identified colleagues as resistant to change or lack of senior leadership support as barriers, implying these may be less of a concern for Commerce teachers as it is elsewhere (Lee et al., 2015; McLarty et al., 2010).

6.6 PCK and Signature Pedagogies

The declared knowledge of appropriate instructional strategies varied considerably in this study, even though there was considerable alignment regarding the outcomes desired in terms of enterprising practices and habits of mind. This variety

may be due to the lack of a signature pedagogies for enterprise education and thereby a gap in *topic specific professional knowledge* in terms of instructional strategies. In the Anderson et al. (2017) study, the participating schools were required to follow the guiding principles of the study: students to follow their own interests and talents and create products that added value to the community in an innovative way. However, the schools adopted these principles in very different ways and the impact on teachers and students thus differed to a great extent. This also suggests an issue with *topic specific professional knowledge*, particularly in terms of instructional strategies, even though, similar to the findings of this study, the enterprising practices and habits of mind were consistent amongst the schools. However, both teachers and principals in the Anderson et al. (2017) study recognised shifts in pedagogical practices (instructional strategies) and teachers' beliefs and orientation were required for enterprise education to meet the aims of developing students' entrepreneurial mindsets, self-efficacy and agency. There may still be hope for signature pedagogies to emerge if more experiential learning approaches are introduced into school enterprise programs to form some new combination of both traditional and modern teaching methods.

This study revealed that perceived barriers impeding pedagogical enactment were strongly influenced by the contextual factors of school structures, access to resources and classroom context. This is consistent with the literature. Fayolle and Gailly (2008) noted, "There appears to be no universal pedagogical recipe regarding how to teach entrepreneurship" (p.579). They argued this was due to the multitude of objectives and constraints of institutional context, an amplifier and filter between *topic specific professional knowledge* and *classroom practice*. Blenker et al. (2012) presented

a view of enterprise education as a personalised pedagogy of everyday practice, allowing for “context, culture and circumstance” (p.427). Following this perspective, the signature pedagogies of enterprise education are pedagogies of situated learning, in a school context and for the individual student. In is an approach for mindset development that comes before any other enterprise education objectives, such as understanding entrepreneurship, learning to become entrepreneurial and learning how to be entrepreneurial (Hytti & O’Gorman, 2004). This then takes the *model of professional teaching and skill* (Gess-Newsome, 2015) depicted in Figure 1 (Chapter 3) down to the *amplifiers and filters* of students (beliefs, prior knowledge and behaviours). These were not directly investigated in this study but teachers indicated opposing views of enterprise education regarding the engagement and inclusion of students with a range of abilities. Some Commerce teachers claimed positive benefits in this area but others identified the lack of student engagement and inclusion as barriers to enterprise education. Perhaps personalising the process could assist in reducing the barriers. Alternatively, the lack of student engagement could be due to school context or teacher beliefs and orientation. Quite possibly they all have a role to play. More in-depth research is needed to clarify this result.

6.7 Neoliberalism, Human Capital and Dichotomies

There are many issues with literature assertions about effective pedagogical approaches for the development of students’ enterprising skills and capabilities. One concern is the possible extent to which enterprise education is being driven by neoliberalism ideology instead of educational policy formed or informed by people within education. Draycott and Rae (2010) declared the voices of teachers and students have

been lost in a sea of political ideology where powerful global institutions are influencing educational policy and thus shaping curriculum. As a result of the growing emphasis on the development of students' capabilities and self-efficacy, knowledge regarding entrepreneurship has slipped in focus with no clear purpose for the skill development drive taking its place. Instead, discussion evolves around the vague notion of equipping individuals for participation in society, or more pointedly, the economy, in an ever-changing world of globalisation and technology (Apple 2005; Bauman, 2001; Beck, 1992). In this context, the purpose of enterprise education is the development of human capital. This could also explain the difficulties with identifying signature pedagogies for enterprise education. The original concept of signature pedagogies was applied to the development of particular professions (Shulman, 2005) and more lately to distinct areas within fields of expertise (Komoto, 2009; Lucas & Hanson, 2016). If enterprise education is solely about the development of a human being in terms of dispositions and attributes rather than being education on the foundation of knowledge and understanding in a particular area, than it may prove to be too broad of a purpose for signature pedagogies to apply.

According to Lambert (2014), education needs to balance a range of competing priorities of students' needs, by providing both content knowledge (factual and conceptual) and practical experiences so students can develop skills and attributes. Instead, there is an ontological and epistemological battle occurring within enterprise education (Draycott & Rae, 2011). On one hand, there is a conservative approach that views knowledge and understanding about entrepreneurship and entrepreneurial behaviours and characteristics as clear-cut certainties that simply need to be learnt and

applied once students become entrepreneurs. On the other hand, there is a more creative approach where all students can learn about themselves and gain the skills and capabilities to develop an entrepreneurial mindset and self-efficacy that can be applied to all of life's circumstances. These approaches are often presented as a dichotomy when the reality is education in its constant pragmatic compromises operates somewhere in the murky middle where determining outcomes, assessments and the pedagogy to meet them vary considerably. Most of the literature advocates a form of experiential or activity-based learning *for* or *through* enterprise but this study found highly structured school systems based on rigid subjects, timetables and calendar structures could be preventing these approaches from occurring and needs to be investigated further.

Instead of operating in a dichotomy, there are multiple motivations and objectives for enterprise education and thus multiple outcomes that may be assessed. However, when enterprise education focuses on a holistic student approach, involving the development of skills and attributes to obtain self-efficacy, the capabilities acquired may not be revealed until long after the learning process has passed. In other words, the student is capable but is yet to enact their capabilities. A key question is how this might be measured. Blenker et al. (2011) propose pedagogy for enterprise education leads with entrepreneurship as everyday practice for capabilities, and allow for various paths of desired outcomes to follow from there. Assessment would be then as appropriate for the particular path. Lackéus et al. (2016) argue that a product focus in enterprise education will bridge the divide between the traditional and progressive dichotomies, even though the more progressive instructional strategies of experiential or activity-

based pedagogies are at the core of the model. A product provides something to more easily assess than a change in attitude or attribute. Despite teaching approaches such as these being proposed, a wide variety of enterprise education formats remain. The search continues for common ground.

6.8 Conclusion

Enterprise education has evolved into a much broader concept than its entrepreneurship roots, at least partly due to the influence of neoliberalism and the idea that education is for the production of human capital. This change has been reflected in the range of possible objectives expanding to include the development of students' enterprising skills and capabilities and the pedagogical practices being proposed to accompany them. This study demonstrates that NSW Commerce teachers are also on this journey. The participants in this study agreed with the advocated outcomes in the literature and to a lesser extent, the pedagogical practices and barriers to implementation. An enactment gap revealed that teachers are not implementing the pedagogies they perceive as most appropriate for developing students' enterprising skills and capabilities. Due to the vast array of teaching methods Commerce teachers associate with effective enterprise education, it is too difficult to identify signature pedagogies from this study.

The following chapter will draw a conclusion to the study by summarising key findings and the implications for future research.

Chapter 7 Conclusion

7.1 Introduction

This chapter provides a summary of the study's outcomes. It also outlines the study's limitations, contributions to the field and possible directions for future research.

7.2 Alignment of Teachers' Perspectives and the Literature

The review of existing curriculum documents suggests there is little impetus for NSW Commerce teachers to implement enterprise education much beyond the traditional *about* enterprise teaching of the optional topic *Running a Business*. Yet, respondents to the questionnaire in this study perceive the development of students' enterprising skills and capabilities as important and having a wide range of benefits. Commerce teachers agree with the research that enterprise education can result in improved knowledge and understanding of core concepts and development of enterprising skills. They could also see the benefits of enterprise education as a learning experience at a class level, including the potential to engage a range of students.

There is also a significant overlap between NSW Commerce teachers' perspectives of enterprise education for developing students' enterprising skills and capabilities and the teaching methods advocated in the literature, although more in terms of professional knowledge than in classroom practice. Many barriers similar to those reported in the literature were identified as preventing the implementation of enterprise education.

7.3 The Enactment Gap

This study revealed a gap between the instructional strategies teachers perceive as best-practice for developing students' enterprising skills and capabilities and the pedagogical practices they reported using in class. Teachers identified time as a major barrier to implementing enterprise education which may go some way to explaining this gap. Teachers report difficulties in arranging guest speakers and visiting businesses but to a lesser extent, there are also issues with implementing hands-on activities involving students running their own or a simulated businesses and creating videos or film as part of the learning process. It remains unclear, though, as to the extent the enactment gap and the reported barriers are due to school context, teacher beliefs and orientation, students' amplifiers and filters or an absence of definitive professional knowledge in instructional strategies. Further research is required to understand the motivations and beliefs behind the teaching methods perceived by teachers as best-practice.

7.4 The Significance of the Research and Future Study

This is one of the first studies into the pedagogical approaches of enterprise education in an Australian secondary school context. The main contribution of this study is the recognition of the enactment gap and some of the barriers that may be causing it. Although it is encouraging that Commerce teachers perceive many benefits of enterprise education, the enactment gap revealed by this study is concerning.

There is a need for comprehensive empirical studies, beyond the self-reporting of students and teachers, to investigate the most effective instructional strategies for developing students' enterprising skills and capabilities, including an examination of

assessment procedures and the outcomes achieved by students. Studies of this kind may provide clarity regarding the signature pedagogies for improving student learning outcomes in enterprise education. If the goals of enterprise education encompass both content knowledge and the development of skills and capabilities, studies need to be conducted in school contexts where these goals are clear and aligned, not held in a dichotomous conflict with each other, as, for example, they were in the Moberg (2014) study. Instead, more inclusive approaches, such as those proposed by Blenker et al. (2012) and Lackéus et al. (2016), could be trialled and researched in the school context.

Research is required to investigate the conditions required for enterprise education to meet the needs of students in the context of a global, individualised world. Studies employing video-stimulated research methodologies could further research the amplifiers and filters of school context and teachers' beliefs and orientation regarding enterprise education and thus assist in reducing barriers to implementation of best-practice pedagogy and narrow the enactment gap. Other research opportunities include the investigation of professional development options to improve pedagogical knowledge in enterprise education, or other forms of teacher reflection to continually improve pedagogical reasoning and action (Shulman, 1987), and an examination of students' amplifiers and filters for their effect on pedagogical approaches.

7.5 Limitations

Possibly the most significant limitation of this study is the use of only one research instrument, a questionnaire. This instrument was considered the most effective method for gaining a broad representation of Commerce teachers' perceptions of enterprise education. The limitation was mitigated by seeking both qualitative and quantitative data from the questionnaire.

Self-reported studies run the risk of respondents selecting what they perceive to be the 'correct' answers instead of providing their genuine opinion. The risk of social desirability bias (Schuman & Presser, 1996) was mitigated against in the current study through the use of an anonymous questionnaire.

Parts of the questionnaire could have been worded to improve the validity of the instrument and reliability of responses. The protocol used in this study relied heavily on a survey designed by Dinning (2015). Dinning's research was conducted in a different context to the current study. The design of the questionnaire made it difficult to make comparisons between the practices used by teachers and those perceived to be most effective.

Context also varies significantly from school to school and between classes within a school. An anonymous questionnaire means these contextual factors have not been taken into account which could have an important role to play in influencing the perceptions of the teachers completing the questionnaire and the phenomena which they are reporting upon.

Finally, as mentioned in Chapter 4, volunteer bias (Salkind, 2010) may have occurred due to the sampling of Commerce teachers for the questionnaire being on an opt-in basis, further exacerbated by recruiting from locations (online and physical) where the more diligent and enthusiastic Commerce teachers would be present.

7.6 Conclusion

This study examined perspectives of NSW Commerce teachers to investigate their alignment with literature and curriculum in terms of outcomes and pedagogy. It was structured on the *model of professional teaching and skill* (Gess-Newsome, 2015), a recent incarnation of Shulman's (1986) pedagogical content knowledge. The results suggest some alignment between teachers' knowledge of instructional strategies and the teaching methods advocated in the literature, reporting methods that were *about*, *for* and *through* enterprise. The results of this study suggest there is a gap between pedagogical knowledge of instructional strategies and *classroom practice*. This enactment gap may be explained by barriers (amplifiers and fillers) such as time and the school context. The teachers in this study believed the development of students' enterprising skills and capabilities were very important and the benefits outlined were consistent with those outlined in the literature and curriculum. A key contribution of this study was the identification of teachers' consideration of an engaging and inclusive learning experience as a benefit of enterprise education, not just the attainment of individual student outcomes.

The scope of the current study allowed for the identification of signature pedagogies. Further research of the kind outlined above is required before this will be

possible. A number of suggestions have been made for future research areas. It is recommended that future enterprise education studies involving questions about enacted pedagogy incorporate case studies using in-depth observational techniques.

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Appendices

Appendix A

Ethics Approval Letter

RE: HS Ethics Application – Approved (5201800366) (Con/Met)
Kay Bowes-Tseng <kay.bowes-tseng@mq.edu.au> on behalf of FHS Ethics <fhs.ethics@mq.edu.au>

Wed 13/06/2018 6:57 PM
Rod
To: Rod Lane rod.lane@mq.edu.au;
Cc: Mrs Shani Helen Hartley shani.hartley@students.mq.edu.au;

Dear Dr Lane,

Re: "The Development of Students' Enterprising Skills and Capabilities in NSW Secondary Schools: A focus on Commerce Teachers" (5201800366)

Thank you very much for your response. Your response has addressed the issues raised by the Faculty of Human Sciences Human Research Ethics Sub-Committee and approval has been granted, effective 13th June 2018. This email constitutes ethical approval only.

This research meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). The National Statement is available at the following web site:
https://www.nhmrc.gov.au/book/national-statement-ethical-conduct-human-research

The following personnel are authorised to conduct this research:
Dr Rod Lane
Mrs Shani Helen Hartley

Please note the following standard requirements of approval:

1. The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).

2. Approval will be for a period of five (5) years subject to the provision of annual reports.

Progress Report 1 Due: 13th June 2019
Progress Report 2 Due: 13th June 2020
Progress Report 3 Due: 13th June 2021
Progress Report 4 Due: 13th June 2022
Final Report Due: 13th June 2023

NB. If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website:
https://www.mq.edu.au/research/ethics-integrity-and-policies/ethics/human-ethics/resources

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Sub-Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4. All amendments to the project must be reviewed and approved by the Sub-Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:
https://www.mq.edu.au/research/ethics-integrity-and-policies/ethics/human-ethics/resources

5. Please notify the Sub-Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:
https://www.mq.edu.au/research/ethics-integrity-and-policies/ethics/human-ethics/post-approval
https://www.mq.edu.au/research/ethics-integrity-and-policies/ethics/human-ethics/resources/research-ethics

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

If you need to provide a hard copy letter of approval to an external organisation as evidence that you have approval, please do not hesitate to contact the Ethics Secretariat at the address below.

Please retain a copy of this email as this is your official notification of ethics approval.

Yours sincerely,
Dr Naomi Sweller
Chair
Faculty of Human Sciences
Human Research Ethics Sub-Committee

FHS Ethics

Faculty of Human Sciences Ethics
C5C-17 Wally's Walk L3
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T: +61 2 9850 4197 | http://www.research.mq.edu.au/
Ethics Forms and Templates
https://www.mq.edu.au/research/ethics-integrity-and-policies/ethics/human-ethics/resources

The Faculty of Human Sciences acknowledges the traditional custodians of the Macquarie University Land, the Wattamattageal clan of the Darug nation, whose cultures and customs have nurtured and continue to nurture this land since the Dreamtime. We pay our respects to Elders past, present and future.

Appendix B

Informed Consent

Research Project: The Development of Students' Enterprising Skills and Capabilities in NSW Secondary Schools

Student Researcher: Shani Hartley
Supervisor: Dr Rod Lane
Faculty: Human Sciences
Department: Educational Studies

You are invited to participate in this study of the development of students' enterprising skills and capabilities. Commerce teachers are being invited to participate in this research project because they are the most likely to be teaching NSW Year 7-10 students these skills and capabilities.

The purpose of this research project is to investigate teachers' perspectives of how students develop skills and capabilities to prepare them for effective participation in the world of business as employees or entrepreneurs.

This research is being conducted to meet the requirements of the Master of Research under the supervision of Dr Rod Lane (Phone: 02 9850 9172 Email: Rod.Lane@mq.edu.au) of the Department of Educational Studies.

If you decide to participate in this questionnaire you will be asked questions about the skills and capabilities involved and the teaching methods used to develop them. It will take approximately 10 minutes to complete.

All information provided will be kept confidential, except as required by law. No individual will be identified in any publication of the results. The questionnaire will not contain information that will personally identify you and all data is stored in a password protected electronic format. The results of this study will be used for scholarly purposes only and may be presented at academic conferences and/or published in a professional journal. Participation in this study is entirely voluntary: you are not obliged to participate. 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 aspects of your participation in this research you may contact the Committee through the Director, Research Ethics and Integrity (phone 02

9850 7850; email ethics@mq.edu.au). Any complaints you make will be treated in confidence and investigated, and you will be informed of the outcome.

Please select your choice below.

Clicking on the "agree" button below indicates that:

• you have read the above information
• you voluntarily agree to participate
• you are at least 18 years of age

If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.

- ○ Agree
- ○ Disagree

Appendix C

Questionnaire

Have you taught Commerce in NSW during the last three years?

- ○ Yes
- ○ No

Display This Question:

If Have you taught Commerce in NSW during the last three years? = No

Unfortunately you do not meet the criteria for this questionnaire because it is focused on current teaching methods of Commerce teachers. Have a nice day!

Skip To: End of Survey If Unfortunately you do not meet the criteria for this questionnaire because it is focused on curren...() Is Displayed

How long have you been teaching? [In general, not just Commerce]

- ○ 0 – 2 years
- ○ 3 – 5 years
- ○ 6 – 10 years
- ○ 11 or more years

Where is your current school located?

- ○ Metropolitan Sydney
- ○ Regional City of NSW
- ○ Rural NSW
- ○ Outside NSW

Is your school a government school or a non-government school?

- ○ Government School
- ○ Non-Government School

The remaining questions are in relation to developing students' enterprising skills and capabilities for effective participation in the world of business as employees or entrepreneurs.

What do you believe to be the three most important benefits to your students of enterprise/entrepreneurship education within the curriculum?

- ○ 1. _____
- ○ 2. _____
- ○ 3. _____

How important is it for students to develop the following skills and capabilities?

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Open to change	○	○	○	○	○
Creativity	○	○	○	○	○
Communication skills	○	○	○	○	○
Curiosity	○	○	○	○	○
Initiative	○	○	○	○	○
Innovation	○	○	○	○	○
Leadership	○	○	○	○	○
Persuasiveness / Negotiating skills	○	○	○	○	○
Pride in their work	○	○	○	○	○
Problem solving	○	○	○	○	○
Resilience	○	○	○	○	○
Teamwork	○	○	○	○	○

To what extent do you agree that the following approaches are appropriate for teaching enterprising skills and capabilities?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Business plan creation	○	○	○	○	○
Business simulations	○	○	○	○	○
Case study material	○	○	○	○	○
Discussions and group activity	○	○	○	○	○
Games and competitions	○	○	○	○	○
Guest speakers	○	○	○	○	○
Lectures and theory based lessons	○	○	○	○	○
Project work	○	○	○	○	○
Student presentations	○	○	○	○	○
Students conduct a real business	○	○	○	○	○
Students video and filming	○	○	○	○	○
Visiting a business / businesses (excursion/s)	○	○	○	○	○

To what extent do you use the following approaches for teaching enterprising skills and capabilities?

	Never	Rarely	Occasionally	Frequently	Extensively
Business plan creation	○	○	○	○	○
Business simulations	○	○	○	○	○
Case study material	○	○	○	○	○
Discussions and group activity	○	○	○	○	○
Games and competitions	○	○	○	○	○
Guest speakers	○	○	○	○	○
Lectures and theory based lessons	○	○	○	○	○
Project work	○	○	○	○	○
Student presentations	○	○	○	○	○
Students conduct a real business	○	○	○	○	○
Students video and filming	○	○	○	○	○
Visiting a business / businesses (excursion/s)	○	○	○	○	○

OPTIONAL: Please add up to three other teaching approaches you consider to be relevant to teaching enterprising skills and capabilities.

- ○ 1. _____
- ○ 2. _____
- ○ 3. _____

Have you ever experienced barriers in embedding enterprise/entrepreneurship education into your curriculum?

- ○ Yes
- ○ No
- ○ Don't know

Display This Question:

If Have you ever experienced barriers in embedding enterprise/entrepreneurship education into your c... = Yes

What are the three most significant barriers?

○ 1. _____

○ 2. _____

○ 3. _____

End of Block: Default Question Block

Appendix D

Tables

Table D1

Questionnaire design

Section/question	Closed/open	Type of question	Selections
Introduction - Qualifier Question			
Taught Commerce in last three years	Closed-ended	Dichotomous ('no' eliminated participant from questionnaire)	Yes/No
Introduction - Demographics			
Experience	Closed-ended	Ordinal	Selection from increasing scale of 4 year ranges of experience
School sector	Closed-ended	Dichotomous	Government Non-Government school
Geographic location	Closed-ended	Nominal categories (last choice eliminated participant from the questionnaire)	Sydney Metropolitan Regional City Rural Outside NSW
Outcomes			
Benefits to students (Dinning, 2015)	Open-ended	Short-answer	List three benefits
Importance of students developing enterprising skills and capabilities (researcher)	Closed-ended	Battery of 5-point Likert Scale of perception of importance	Stimuli list of skills and capabilities arranged in alphabetical order (items from a range of literature, see Table A2)
Teaching Methods			
Deemed appropriate for enterprise education (Dinning, 2015)	Closed-ended	Battery of 5-point Likert Scale of Disagree - Agree	Stimuli list of teaching methods (Mwasalwiba, 2010) arranged in alphabetical order
Used in class (researcher)	Closed-ended	Battery of 5-point Likert Scale of Never - Extensively	
OPTIONAL: Other relevant methods (Dinning, 2015)	Open-ended	Short-answer	List three methods
Barriers			
Barriers to embedding enterprise education (Dinning, 2015)	Closed-ended	Nominal categories **Yes:** added next question **No/DK**: questionnaire ended	Yes No Don't Know
If yes: What they are (Dinning, 2015)	Open-ended	Short-answer	List three barriers

Table D2

Skills and capabilities – sources of terms

Skills/capabilities	Literature	Curriculum documents
Open to change		ACARA (2018a)
Creativity	Anderson, Hinz & Matus, 2017 Birdthistle et al., 2007 McLarty et al., 2010 Moberg, 2014 Seikkula-Leino, 2011	Ministry of Education (2015a) Skolverket (2011)
Communication skills	Anderson, Hinz & Matus, 2017 Birdthistle et al., 2007 McLarty et al., 2010	Ministry of Education (2015a)
Curiosity	Anderson et al. (2017)	Skolverket (2011)
Initiative		ACARA (2018a, 2018b)
Innovation/ Generate ideas	Birdthistle et al., 2007 McLarty et al., 2010 Seikkula-Leino, 2011	ACARA (2018a) Skolverket (2011)
Leadership	Anderson et al. (2017) Birdthistle et al., 2007	ACARA (2018a, 2018b)
Persuasiveness/ Negotiating skills	Anderson, Hinz & Matus, 2017 Birdthistle et al., 2007 McLarty et al., 2010	Ministry of Education (2015a)
Pride in their work	Anderson et al. (2017)	
Problem-solving skills	Anderson, Hinz & Matus, 2017 Birdthistle et al., 2007 Bolstad, 2006 McLarty et al., 2010 Ruskovaara & Pihkala, 2013	ACARA (2018b) Ministry of Education (2015a) Skolverket (2011)
Resilience	Anderson, Hinz & Matus, 2017 Bolstad, 2006 McLarty et al., 2010	
Teamwork	Anderson, Hinz & Matus, 2017 Birdthistle et al., 2007 McLarty et al., 2010 Seikkula-Leino, 2011	Ministry of Education (2015a) Skolverket (2011)

Table D3

Coding of benefits (outcomes)

Code	Benefit	No.	No.	%
Knowledge and understanding (21%)				
K1	Course content		34	14%
K2	Consumer and Financial Literacy		17	7%
Skills and capabilities (39%)				
S1	Business and entrepreneurial skills		12	5%
S2	Enterprise skills		86	34%
S2-1	Creativity	4		
S2-2	Communication skills	5		
S2-3	Innovation/Generate ideas	9		
S2-4	Leadership	2		
S2-5	Persuasiveness/Negotiating skills	0		
S2-6	Problem-solving skills	10		
S2-7	Teamwork	11		
	Prominent in literature and curriculum	41	(16%)	
S2-8	Citizenship	2		
S2-9	Critical and creative thinking	13		
S2-10	Planning and decision-making	3		
S2-11	Research	2		
S2-12	Technological skills	1		
S2-13	Other	24		
		45		
Attributes (8%)				
A1	Personal attributes		19	8%
A1-1	Open to change	2		
A1-2	Curiosity	0		
A1-3	Initiative	2		
A1-4	Pride in their work	2		
A1-5	Resilience	1		
	Prominent in literature and curriculum	7	(3%)	
A1-6	New perspective	4		
A1-7	Reliability	1		
A1-8	Self awareness	2		
A1-9	Self reliance	5		
	Items less prominent in literature	12	(5%)	
Future ready (7%)				
F1	Future ready students		17	7%
Learning experiences (20%)				
E1	Learning experiences		49	20%
E1-1	Accessible learning	3		
E1-2	Authentic learning	1		

Code	Benefit	No.	No.	%
E1-3	Challenging	1		
E1-4	Engaging	2		
E1-5	Experiential learning	3		
E1-6	Personalised learning	2		
E1-7	Practical learning	7		
E1-8	Real world	29		
E1-9	Other	1		
Other (5%)				
N-1	Uncategorised		13	5%

Note *n=249*

Table D4

Coding of most significant barriers

Code	Barriers	Examples	No.	No.	%
Curriculum (11%)					
C1	Curriculum	*Curriculum is outdated* *Content is often irrelevant* *Restrictions in the syllabus*		10	11%
Students (9%)					
S1	Students	*Student engagement* *Wide variety of abilities of students* *Small class size can make it challenging*		8	9%
School Context (SC1) (75%)					
SC1-1	Cost			7	8%
SC1-2	School Structure			11	12%
SC1-2-1	School calendar	*Timing with other school activities*	2		
SC1-2-2	Timetable	*Flexibility in the timetable* *Not enough allocated periods*	5		
SC1-2-3	Other	*School structures*	1		
SC1-3	Resources			14	15%
SC1-3-1	Access to businesses		2		
SC1-3-1	Access to guest speakers		5		
SC1-3-1	Other	*Resources available that are truly students relevant*	7		
SC1-4	School culture			6	6%
SC1-4-1	Colleagues	*Colleagues resistance to change*	3		

Code	Barriers	Examples	No.	No.	%
SC1-4-2	Exam focus	*HSC informs Y10 pedagogy*	3		
SC1-5	School leadership			4	4%
SC1-6	Time			28	30%
SC1-6-1	Admin	*Paperwork and planning time*	3		
SC1-6-2	Excursions	*Bureaucratic paperwork, excursions are a nightmare to organise now*	3		
SC1-6-3	General Constraints		17		
SC1-6-4	Planning time	*Time to arrange and coordinate activities* *Time and space to create authentic course*	5		
Teacher Expertise (1%)					
T1	Teacher Expertise	*Lack of teacher experience in area*		1	1%
Other (4%)					
Z1	Other	*Information that's relevant and up to date* *Attempting cross curriculum activities*		4	4%

Note *n=93*