Creative Insights: Senior school teachers' experience of creativity in Queensland across the curriculum.

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Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except where due reference is made.

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Abstract

Creativity is increasingly viewed as an important attribute for education, workforce success, and providing solutions to problems by government, industry, and the community at large. Recently there has been a shift towards building creative capacity in individuals as lifelong learners for the enhancement of human flourishing in individual, community, and global contexts. Education is charged with the responsibility of preparing young people to be agentic citizens and lifelong learners who are agile in response to a dynamically changing and information-rich 21st century world. This study investigates the experiences of sixteen senior school teachers in Queensland as they implemented the Queensland Curriculum and Assessment Authority (QCAA) 2019 Senior school syllabus suite in all eight learning areas. It examines how teachers from different knowledge domains understand creativity in connection with their syllabus document, how their beliefs about creativity have impacted their curriculum planning as they implemented a new subject syllabus, and what participants report curriculum delivery integrating creative learning looks like in their classrooms.

Utilising Craft's (2013) Wise Humanising Creativity framework as a theoretical lens, the study examines how creative capacities are understood and activated by senior school teachers in the implementation of the QCAA 2019 Senior school syllabus suite. The study looks at the alignment between Craft's (2013) framework and the QCAA 21st century skills (2017b) framework and the attributes highlighted for developing senior school student creative capacity. The study utilises a constructivist interpretivist perspective to understand the experiences of senior school teachers as they integrate creative learning while implementing the QCAA 2019 Senior school syllabus document for their subject area. The study was conducted during the COVID-19 lockdowns in 2020, when teaching and learning moved online, impacting the study in terms of data collection and how teachers engaged with their student cohorts.

The study makes three main contributions. To date, there has been little research focussed on creativity in education and senior school students. The study contributes by providing insights into what creative attributes are understood and integrated in each learning area, building creative capacity in students and preparing them to engage in the world, now and in the future. The study provides insights into the

experiences of senior school teachers who were implementing creative learning in their curriculum planning and delivery under pandemic conditions.

The findings arising from the study may be of interest to anyone who is invested in empowering senior school teachers in their preparation of senior school students to use creativity to produce beneficial outcomes for themselves and the community, now and in the future. This includes researchers interested in creativity in an educational context, educational authorities as they refine the Senior school syllabus suite, educators, school administrators, and parents who wish to foster adolescents at a critical period of their education, enriching their creative potential to shape personalised and humanised possible futures for themselves and the world around them.

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1 Introduction

Creativity is widely perceived as a desirable set of capabilities for responding to the rapid and widespread change characterising the modern world. Within a knowledge economy, the motivation for pursuing creativity has been to maximise economic innovation and socio cultural outcomes (Bakhshi et al., 2017; Bridgstock, 2017). However, in recent years, the motivation for endorsing creativity as desirable has shifted from an economic agenda to one of cultivating flourishing individuals and communities.

Education has always aspired to prepare students for life. Mirroring government and industry, education internationally is exploring how to utilise creativity to produce confident, creative, and capable young people who can adapt and capitalise on the possibilities offered by society (New Zealand Ministry of Education, 2015; Tan & Ng, 2021; The Durham Commission, 2019). In Australian education too, the motivation for this change moves from a workplace focus to one of enabling young people to flourish in every part of their lives (ACARA, 2016b; QCAA, 2017b). In the past, educational responsibility for instilling creative knowledge, skills, and attributes in young people resided with the arts. However, just as creativity is desirable in a wide range of societal sectors, responsibility for engaging students with creativity is also broadening to a wide range of learning areas.

In the most recent version of subject syllabuses, creativity is prioritised by the Queensland Curriculum and Assessment Authority (QCAA) as a desirable 21st century capability for senior school students across the board, enabling them to adapt as they enter a dynamic post-school world (QCAA, 2017b). Consequently, Senior school syllabus documents in Queensland and their delivery are undergoing a significant transition. The QCAA promotes a set of 21st century skills (QCAA, 2017b), incorporating them in all of the new syllabus documents. Creativity is integrated into several skill sets and associated indicators, including pursuing novel outcomes through "creative thinking", increasing adaptability and open-mindedness through the development of "personal and social skills", and participating and contributing using "collaboration and teamwork" (QCAA, 2017b). The QCAA makes provision for all subjects to offer learning opportunities for all 21st century skills, while acknowledging that each applies differently to each learning area. The syllabus documents articulate

the integration of creative thinking into all subject areas as a vital component of preparing senior students in Queensland to thrive in every part of their lives.

This study investigates how the QCAA 2019 General Senior school syllabus suite, which integrates creativity, may contribute to achieving this vision for senior school students in Queensland. The study was conducted during the COVID-19 lockdown in 2020. Teachers and students exercised their resilience as learning went online and later returned to the classroom. The participants generously supported the study, despite the burden of increased workloads and time restrictions for delivering curriculum and syllabus requirements.

While some learning areas, such as The Arts, have a long-established association with creativity and the development of creative knowledge, skills, and attributes in students, other learning areas have not been required to develop creative attributes and skills as a central concern of their curriculum. Not all knowledge systems will define creativity or interpret its elements in the same way. The influence of either the arts and wellbeing perspective, or an agenda focussed on economic innovation in different learning areas results in slippage in the application of terminology across subject area literature. This is problematic as educators pursue a common definition for creativity and clarity about the objectives for developing creative capacities in their students.

To address this significant gap in the scholarship, the research question framing this study is: In what ways can Craft's (2013) Wise Humanising Creativity framework support Queensland senior school teachers with a common understanding of creativity across all eight learning areas of the curriculum? The exploration of this question was supported by two sub-questions to gain a deeper understanding of senior school teachers' understanding of creativity and the role it plays in their curriculum planning to effectively empower senior school students to adapt to change and thrive in life. The research sub- questions are:

SQ 1: What meaning and attributes do teachers articulate about creativity in relation to their subject syllabus?

SQ 2: How have teachers interpreted and integrated creativity in their curriculum planning?

Chapter two of the thesis is the Literature Review that outlines the social and cultural context of the study. It discusses how definitions of creativity have evolved over time and how the change is reflected in the Australian educational context. The chapter presents the definition of creativity adopted for this study, namely Craft's (2013) Wise Humanising Creativity, driven by Possibility Thinking (Craft, 2000; Craft, Cremin, et al., 2008), and outlines the framework's suitability for defining creativity in a senior school setting. Wise Humanising Creativity is conceived for activation in educational contexts. As a framework it incorporates knowledge, skills and personal attributes and promotes an ethically driven, individualised approach to developing the whole person in and across domains for the pursuit of new possibilities for themselves and others now and in the future. This chapter also examines the slippage in terminology for attributes of Possibility Thinking as they are applied across the eight learning areas defined by the QCAA for its 2019 Senior school syllabus suite.

Chapter three outlines the methodological approach for this study. The chapter includes the research questions and the argument for using a bounded case study methodology to foreground teachers' voices. This chapter also outlines the methods of data collection and the rationale for these choices in response to the research question and sub-questions. It also explains why it was necessary to create a codebook (Appendix 1) to shape the analysis of the data in relation to the two research sub-questions and define each of the creative attributes of Possibility Thinking, as well as the humanising and wise components of the Wise Humanising Creativity framework.

Chapter four is an analysis of relevant sections of the QCAA syllabus documents for the fifteen General subject areas taught by the study participants. As the chapter explains, the syllabus documents have been divided into three parts: Course Overview, the Units of Work, and the Assessment Tasks. The subjects were listed vertically within each of the eight learning areas nominated by the QCAA. The aspects of Wise Humanising Creativity underpinned by Possibility Thinking, as identified by Craft (2013), were placed across the top of the table at 4.3 (p. 48). The table uses a protocol to identify attributes of Wise Humanising Creativity in the selected documents. It reveals, in relation to creativity in schools, the arts and non-arts binary appears to be a false one because creative knowledge, skills, and attributes are present in the syllabus documents of all eight learning areas. The qualities of Wise Humanising Creativity

are also used to analyse the questionnaire and interview data provided by the participants, evidenced in the Findings chapter (chapter 5).

Chapter five presents the findings from the participant data collection in response to the research question and two research sub-questions. The chapter methodically analyses the questionnaire and the interview data to address the study's two sub-questions. The data analysis is shaped by the aspirational syllabus statements for student outcomes of creative learning presented in the Syllabus Audit (chapter 4) and the understandings of each of the attributes of creativity listed in the codebook (Appendix 1) to ensure a consistent approach to data analysis across the eight learning areas. The synthesis of the syllabus data and the participant questionnaire and interview data provides a clear picture of the lived experience of the participants as they implemented creative learning and curriculum to enhance student outcomes across all eight learning areas. The data from the participant questionnaire and interviews provide insights into the senior school teachers' understanding of creativity and the alignment they perceived between the creative attributes in Wise Humanising Creativity (Craft, 2013) and the QCAA's 21st century skills framework (QCAA, 2017b). This evidence addresses the two sub-questions regarding the participants' understanding of creativity and its inclusion in their curriculum planning to enhance student success.

Chapter six is a discussion synthesising the analysis of participant data from chapter five in relation to the research question and sub-questions, along with the relevant theoretical literature presented in the Literature Review (chapter 2) and the syllabuses' aspirations presented in the Syllabus Audit (chapter 4). It considers the understandings of creativity in each of the eight learning areas and how these understandings have impacted the curriculum planning in each learning area.

Chapter seven concludes the study, highlighting its contribution to understandings of creativity learning within the implementation of the QCAA 2019 Senior school syllabus suite through the lens of the Wise Humanising Creativity framework (Craft, 2013). It acknowledges the study's limitations and highlights opportunities for further research to empower senior school teachers to integrate creativity into learning and enhance senior school students' creative capacity for all areas of their lives.

Creativity is widely prized in the 21st century world to empower individuals as lifelong learners and innovative problem solvers. As focus shifts to an agenda promoting human flourishing, education is charged with the responsibility of instilling creative attributes in students through curriculum. The QCAA has made this goal a priority in senior school through the implementation of the 2019 Senior school syllabus suite. The next chapter presents the academic literature on the development of understandings of creativity and its inclusion in the Australian educational context. It provides the definition of Wise Humanising Creativity (Craft, 2013), which is the definition of creativity applied in this study. The Literature Review discusses the links between creativity and its attributes, highlighting the slippage in understanding of some terminology across learning areas and explaining why this problematises establishing a common definition for creativity in an educational context.

2 Literature Review

2.1 Introduction

The development of whole human beings through creativity in education is not a new idea. Dewey (2004 [1916]) believes education needs to develop the individual's intellectual and sensory capacities to be "able to innovate in however modest a way so that he [*sic*] can create an interior culture of his [*sic*] own…to be his own artist, his own scientist, his own historian, his own navigator" (p. 116). Bruner (1979) concurs this development through education is necessary, stating "the need is now to employ our understanding not only to the enrichment of society … but also to the enrichment of the individual" (p. 116). Creativity is perceived to be desirable by education (ACARA, 2016b), government (Council of Australian Governments Education Council, 2019), and industry (Foundation for Young Australians, 2017), to develop individuals and their potential. However, its definition and characteristics are not universally agreed. Different domains such as the arts and business have emphasised either a wellbeing or economic progress agenda (Harris, 2017; Harris & Ammermann, 2016). The influence of both perspectives has an impact on characterising creativity within an educational context. While creativity is frequently highlighted as an important element in developing agentic young people who can flourish in every part of their lives (ACARA, 2016b; Council of Australian Governments Education Council, 2019), competing priorities and disparate understandings of creativity mean educators are not working with a common definition of what knowledge, skills, and attributes they are integrating into learning areas, or what creative outcomes they are seeking to foster in students.

This Literature Review outlines how definitions and understandings of creativity have evolved over time, across a range of domains, such as the arts and psychology. These understandings persist in sectors of society, problematising the search for a common understanding for the whole community to utilise to meet the challenges of a changing world together. Attention then turns to how creativity is developing within the Australian educational context. The changing perception of creativity from an arts-based concern and capacity to one that is central to every learning area and subject is explored. The influence of this on the QCAA's 2019 General Senior school syllabus suite is also considered. In the absence of a common definition of creativity that can be successfully used by educators from different learning areas,

this study suggests utilising Craft's (2013) Wise Humanising Creativity. The framework, an evolution of Craft's (2000) concept in Possibility Thinking with little c creativity, fosters a range of creative capabilities to develop agentic young people who pursue novel outcomes ethically, for the good of others as well as themselves in a constantly changing world. The last section of the Literature Review will look at four attributes of Wise Humanising Creativity (Craft, 2013) that use terminology that is also commonly used outside of the framework in a range of domains. This section will unpack interpretations of these terms in different knowledge systems, uncovering that, although different terms are employed in areas such as industry and the arts, they are underpinned by common understandings of the knowledge, skills, and personal attributes individuals will need to thrive in the world at large. The review begins with an overview of the evolution of definitions of creativity and the tensions that exist in finding a common understanding to apply across knowledge systems in an educational context.

2.2 Defining Creativity

Defining creativity is still problematic and is still a contested field of research. It is understood differently within a range of knowledge systems that focus on either the individual, the process, the product, or the influence of an environment (Amabile, 1996; Csikszentmihalyi, 1990; Glăveanu, 2013; Harris, 2017; Rhodes, 1961; Runco & Jaeger, 2012; Starko, 2017). These views retain different elements of creativity and apply creative processes for different outcomes.

Historically, creativity has been associated with inspiration from a higher power and genius, the gift of a few. During the Romantic era in Europe, inspiration was grounded in human beings and associated with artistic creation and expression. At this time, creativity was prized for its qualities of originality, its association with genius, and the individuality of sensory and emotional response (Glăveanu, 2014 2018; Runco & Jaeger, 2012). Some of these qualities have persisted in many people's understanding of their own capacity for creativity and, until recently, the pervasive view in education was that creativity was the responsibility of the arts.

During the twentieth century, understanding creativity became the focus of several fields, including psychology. Creativity was recognised as a process that was domain-specific and expressed differently within each domain (Baer, 2017,

Glăveanu, 2018). One distinction made by psychologists is that creativity occurs on a continuum (Amabile, 1990). This ranges from 'high' creativity (Csikszentmihalyi, 1990), the kind of creativity that is widely recognised as highly original and transformational to a field, to little c creativity (Craft, 2001) or the kind of creativity that is accessible to all and adopted as an approach in every part of an individual's everyday life.

Within creative industries and government, creativity is valued as a process that produces innovative outcomes (McWilliam et al., 2010). Creative individuals are those who have the knowledge, skills, and attributes to contribute original ideas, which are valuable in the workplace. They are deemed valuable because they produce a new process or product considered to be novel within that field, which increases economic productivity (Hearn & Bridgstock, 2010). Creativity in this domain is shaped by globalisation and economic forces and has been influential in education in Western societies in recent decades (Craft, 2005; Harris, 2014).

There are four key attributes that are common to understandings of creativity across domains, including education. These are (1) originality or novelty, which must be coupled with (2) appropriateness to (3) produce something of value (Runco & Jaeger, 2012). Creativity always encompasses (4) imaginative thought and action, which is purposeful. Craft (2005) emphasises that creativity needs to be generative. Imaginative thought is not sufficient; something needs to be produced for the act of creativity to exist. The outcome does not have to be a product. It can be a new idea or an action. This study is not concerned with using definitions of creativity developed for the arts or for creative industries. Specifically, it investigates understandings of creativity within an educational context. There are a diverse range of interpretations of creativity across learning areas within an educational context. This study uses Craft's (2013) conception of Wise Humanising Creativity, underpinned by Possibility Thinking.

2.3 Creativity in an Australian educational context

Harris's (2017) report, *Creative ecologies:Fostering creativity in secondary schools*, acknowledges finding a consistent definition of creativity that is relevant to all learning areas in schools is critical, but also fiercely debated within the field. Her exploration examines several models of creativity, such as Lucas's *5 Creative*

Dispositions (Lucas et al., 2013). The model's authors conceived a formative assessment tool for teachers to measure individual student's propensity for creativity through the lens of five dispositions of creativity (inquisitive, persistent, imagination, collaborative, discipline). While originally intended for use with students from three to sixteen years of age, the authors suggest that the tool might not be effective with senior school students because of the strong focus on high stakes testing. Harris's response to the problem of a consistent definition of creativity for schools is the development of the creative ecologies framework (de Bruin & Harris, 2017), believing schools can apply a transdisciplinary approach to develop a definition of their own. While this approach allows schools to develop an individualised response, it does not provide a universal understanding of creativity across knowledge systems and across schools. Cropley (2012) argues that the result is a reticence by schools to integrate creativity into curriculum and an inclination to rely on the arts to develop young people's creative capacities. The interrelatedness of teacher disposition and the implementation of creativity in curriculum delivery is well documented in previous studies (Henriksen & Mishra, 2015; Hunter & Emery, 2015; Karwowski et al., 2020; Kettler et al., 2018) and will be addressed by this study in the Findings.

As Harris's (2017) report demonstrates, the difficulty in determining a useful definition of creativity for education centres around whether the outcome for creative activity is economic innovation or human development. Harris (2017) comments that "creative industries are seen as the crucial 21st century economic replacement for mining and other export drivers" (p. 8). Araya (2010) warns against the commodification of creativity, or individuals using creativity specifically for economic purposes. He (2010) expresses concern that education is not teaching creative attributes across the disciplines when "creativity is critical to the renewal of advanced capitalist countries" (Araya, 2010, p. 4). Zhao (2012) also highlights the necessity for education to shift focus from developing employees with outstanding skills and knowledge for existing jobs, to equipping students with 21st century capabilities and the agency to shape their world. In education, however, creativity has developed out of the arts, not creative industries and Harris (2016) draws on Craft (2005) to advocate for the integration of creative attributes across all subject areas. In doing so, Harris joins the growing body of literature promoting the inclusion of

creativity in education outside of the arts (Cropley & Cropley, 2010; Lassig, 2021; Root-Bernstein & Root- Bernstein, 2017; Zhao, 2018; Zhao & Watterson, 2021).

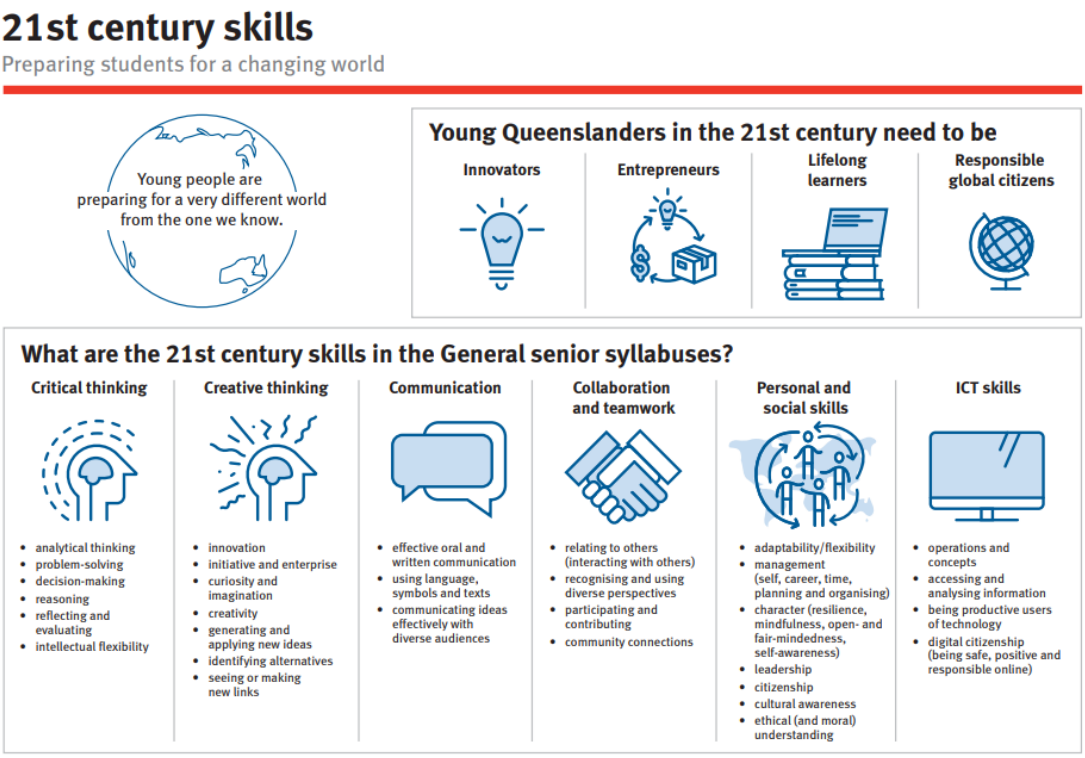
The Alice Springs (Mparntwe) Education Declaration (Council of Australian Governments Education Council, 2019) aspires for education to instil a range of skills and personal attributes in young people, in order to equip them to be adaptable for change in the future. These include the development of young people who are "confident and creative individuals" (p. 6), able to "relate well to others" (p. 6), and who possess the capacity for "honesty, resilience, empathy and respect for others" (p. 6). *The Alice Springs Declaration* (Council of Australian Governments Education Council, 2019) strongly emphasises developing across the eight learning areas young people with the capacity to use creative thinking, skills and attributes, "for the common good" (p. 8), rather than primarily for economic innovation. Similar values and attributes were aspirations of the National Advisory Committee on Creative and Cultural Education report (National Advisory Committee on Creative and Cultural Education, 1999) in the United Kingdom. This report inspired Craft to consider the place of wisdom in the teaching of creativity and include it in her framework for Wise Humanising Creativity.

In response to the *Melbourne Declaration on Educational Goals for Young Australians* (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008), the National Curriculum conceives creative and critical thinking as a general capability. Conceptualised here are agentic individuals contributing to the community beyond the world of work. The Australian Curriculum and Assessment Authority (ACARA) highlights 'critical and creative thinking', (ACARA, 2016b) as one of seven General Capabilities that young people should develop to "live and work successfully in the twenty-first century" (ACARA, 2016b). The general description of 'critical and creative thinking' (ACARA, 2016a) includes a collection of cognitive skills, personal attributes, and affective capabilities for a young person's development. The specifics of the 'critical and creative thinking' capability elaborate four 'organising elements' that emphasise the processes of inquiring or exploring, imagining and generating ideas and actions, analysing, synthesising, and evaluating, and, reflecting and evaluating, potentially developing individuals cognitively and affectively to participate in a range of life roles.

Senior school education in Queensland is currently experiencing substantial change in curriculum and assessment. In 2019, a suite of new Senior school syllabus documents was being implemented across new and existing disciplines. While the Australian Curriculum, including the General Capabilities authored by ACARA, will continue being used in Queensland in years prep to Year 10, the QCAA has developed a different set of capabilities called 21st century skills for embedding into new senior syllabus documents (QCAA, 2017b). Notably, in the new 21st century skills authored by the QCAA, 'critical and creative thinking' have been unpaired, emphasising 'critical thinking' and 'creative thinking' as separate skills to be developed. Both Australian and international research highlights creativity's critical role in empowering individuals for a changing world (Bakhshi et al., 2017; Bridgstock, 2017; Tan & Ng, 2021; Zhao &Watterson, 2021). Education's focus is to foster young people who are confident and creatively equipped to bring positive change for themselves and their community.

Figure 1

QCAA 21 century skills framework



Modified from 21st century skills: Preparing students for a changing world (qcaa.qld.edu.au) © State of Queensland (QCAA) 2019, licensed under CC BY 4.0.

This study applies Craft's (2000; Craft, Cremin, et al., 2008) Wise Humanising Creativity encompassing a Possibility Thinking approach to the QCAA 2019 General syllabus documents in order to explore senior school teachers' understandings of creativity and the application of those understandings to their curriculum planning for the QCAA 2019 Senior school syllabus suite. As these constructions shape student learnings about creativity from a range of learning areas, it is important to appreciate the impact that slippage in the application of terminology for creative attributes—as described in a Possibility Thinking approach within Wise Humanising Creativity—might have on student outcomes to flourish in life. The next section considers the tensions that exist in the application of four terms commonly found in QCAA General Senior school syllabus documents, which are also key attributes of Possibility Thinking within the Wise Humanising Creativity (Craft, 2013) model. They are innovation, play, immersion, and affective learning.

2.4 Defining Creativity for this study

Craft (2005) raises questions about the value of current models of creativity in education, connecting creativity and work and grounded in individuality, globalisation, and innovation for its own sake. She queries whether there was a way to develop a more humane framework for fostering young people's creativity that involves co-construction with others and valuing relationships. Chappell's (2008) response to this challenge was the development of Humanising Creativity. The concept operates in an educational environment using Possibility Thinking to focus on the relationships between students and develops each individual's understanding and application of creative attributes for the benefit the whole group. Chappell (2008) states that the approach is more 'humane' because it is "guided by compassion, empathy, the alleviation of difficulty and some reference to a shared value system. Humanising is the process of becoming more humane, an active process of change" (p. 8). Chappell et al. (2012) dub this process 'becoming' and describe it as "the process of making and being made" (p. 18), developing student agency while engaged with creativity in the classroom. Chappell et.al (2012) refer to Wegerif (2010) who believes an "'inside-out' and 'outside in' dialogue" is at the heart of creativity in education, allowing students to "understand ideas rather than just learning to repeat them" (p. 28).

Engaging with creativity collaboratively, rather than with an individual focus, creates space between the individual and the world. Creativity operates within this gap to "open up into the space of possibilities in which [the student] can imagine the world differently" (p. 63). Their collaborative and compassionate approach to tasks empathically shapes them to be more communally focussed, ensuring better outcomes for the community as well as themselves.

Craft's (2013) model for Wise Humanising Creativity is informed by Humanising Creativity (Chappell, 2008; Chappell et al., 2012) in its conception of an ethically driven engagement with creativity melding individual, collaborative, and communal activity. It recognises that valuable new ideas can be manifested from collaboration and shaping individuals is part of this process. Wise Humanising Creativity (Craft, 2013) also draws on ideas of wise, creative trusteeship (Craft, 2008).

In *Tensions in Creativity and Education: Enter Wisdom and Trusteeship*? Craft (2008) argues that it is important to use our creativity wisely. Regardless of an individual's culture or view of creativity, consideration needs to be given to shaping our socio cultural values and fostering trustees of our "generative thought in a globalised world" (p. 23). This objective, Craft (2008) argues, is especially important in an educational context where teachers and the education system have power to decide "what and how it is appropriate to learn, we recognise educators' immense responsibility for fostering creativity" (p. 23). In a society that values individualism, Craft (2008) argues it is important for educators to foster a view of creativity that is inclusive and pluralistic and considers the impact of the results of creativity on other people and the environment. This, she maintains, is "the wise thing to do" (p.27) and in keeping with the nature of creativity that values possibilities, divergent thinking, and novelty. In line with the 'humane framework' of Wise Humanising Creativity, Craft (2008) promotes fostering opportunities for young people to consider how, as individuals and communities, their creativity can manifest as flourishing for everyone, the "common good" (p. 29). She aspires for young individuals to develop stewardship for their ideas, considering the value and impact of their creative concepts in the light of achieving wellbeing for themselves and others.

Craft (2008) draws on Sternberg's (2003) balance theory to elaborate on the style of wisdom she believes should be fostered in the classroom. Supporting Craft's humane approach of utilising values to achieve individual success, Sternberg says:

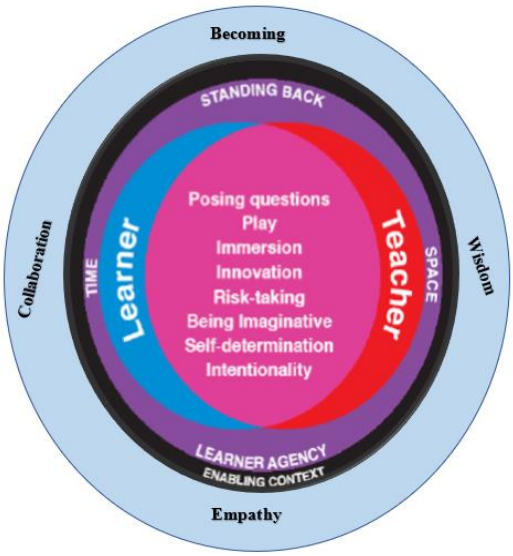
> Wisdom is not just about maximising one's own or someone else's self-interest, but about balancing… self-interest, with the interests of others… and of other aspects of the context in which one lives… such as the environment or even God. (p. 152)

Balance theory and its view of wisdom, Craft (2008) argues, may be useful in educational settings because it recognises that "wise solutions are often creative ones" (p.158). Developing a model of trusteeship in which students wisely balance their interests and those of the community at large may foster agentic individuals who develop a Possibility Thinking approach to life, enabling themselves, their community, and the world to flourish.

Craft's Wise Humanising Creativity (2013) framework adapts Possibility or 'what if' Thinking and its capacities (Craft, 2000; Craft, Cremin, et al., 2008) to meet the demands of a changing educational environment. Craft (2001, 2005) has long advocated for creativity to be recognised as a process that occurs within a range of domains. While Possibility Thinking was originally arts based, its evolution into Wise Humanising Creativity aspires to build students' creative capacities across learning areas by adapting Possibility Thinking and little c creativity for a dynamic, market-oriented and information technology-based world. Learner agency is fostered through access to comfortable learning mediums both face-to-face and digital, developing individuals' creative capacities. Essential elements of Craft's (2000) Possibility Thinking include the pursuit of novel outcomes using investigative and goal-orientated behaviour, improvisation, and imagination, while exercising self-determination, risk taking, resilience, persistence, and collaboration. Craft (2013) argues that these creative elements are inherent to a range of learning contexts, providing opportunities for developing learners who can innovate and adapt in possible futures. Craft's (2013) adaption of Possibility Thinking into Wise Humanising Creativity focuses on fostering the whole person through "playful, participative, plural creativity to develop wise humanising futures" (p. 126), making it an appropriate conception of creativity for this study.

Figure 2

Wise Humanising Creativity



Adapted from (Craft, Cremin, et al., 2012). In the Public Domain.

Currently, there remains no agreement on a definition of creativity across knowledge domains in education. The knowledge, skills, and attributes that should be prioritised to develop agentic young people prepared to successfully engage in a changing world are contested. Educators in Queensland are being asked to foster creativity in their subject areas without a common definition as a basis. Craft's (2013) concept of Possibility Thinking, driven by little c creativity, perceives creativity as an approach to successfully engage with a world of dynamic technological, economic, and societal change. It is an approach that can be personalised to suit the individual. While originating in the arts, Craft's (2005) conception of the Possibility Thinking framework has always recognised that creativity occurs in every domain. The knowledge, skills, and attributes encompassed within creativity are developed appropriately and differently by each domain. By encompassing a Possibility Thinking approach within the Wise Humanising Creativity framework, Craft (2013) provides the broader framework required by educators in all learning areas to build a common approach for integrating creativity into curriculum for the benefit of students. As Wise Humanising Creativity underpinned by Possibility Thinking has been developed within an educational context, it provides educators with a clearer understanding of how creativity can be defined in a way that is relevant for all learning areas. Wise Humanising Creativity offers a flexible frame for fostering creative knowledge, skills, and personal attributes within domain-specific understandings and practices. It also allows educators to speak a common language as they aspire to foster confident and capable individuals prepared for the world beyond school.

2.4.1 Possibility Thinking manifested in a curriculum context

Craft's concept of Possibility Thinking is an approach to everyday challenges in life, thinking 'what if' or acting 'as if' to change 'what is' to 'what might be' (Craft, 2000, p. 31). It is a set of attributes that develop personal agency through little c creativity. These attributes include, but are not limited to, imagination, play, question posing, and risk taking.

The idea of 'new' is important to Craft, and Possibility Thinking provides a route to innovation or novel solutions. Craft's early work on the concept of Possibility Thinking with little c creativity clearly delineated between creativity and innovation. In *Creativity in Schools: tensions and dilemmas* (Craft, 2005), she aligns creativity

with imaginative ideas that produce novel outcomes. Innovation, by contrast, is defined as "the implementation of new ideas to create something of value, proven through its uptake in the marketplace" (p. 20). Both concepts value the novelty of ideas and action but, while creativity might be for a range of intentions, innovation is purely for commercial purposes. In later empirical studies (Burnard et al., 2006; Craft, Cremin, et al., 2008), the approach to applying the framework for identifying Possibility Thinking was developed further and refined. The refined framework of Possibility Thinking absorbs the concept of innovation into creativity as synonymous with novelty describing "children's strong, playful connections between ideas, triggered, scaffolded and extended by thoughtful adult provocations" (p. 408). In an educational context, Craft delineates between educational innovation using creative attributes such as "question posing, imagination and risk taking… in any learning context, blending individual, collaborative and communal creativity" (p. 408) to produce novel ideas and actions and economic innovation, which is the commercial outcome of creative thinking or process.

Another essential attribute of Possibility Thinking is play (Craft, 2000; Craft, Cremin, et al., 2008). Often associated with imagination, question posing, and immersion, play is necessary to explore ideas and generate new possibilities. It develops an individual's knowledge and understanding of a domain. Play also commonly manifests itself in collaboration with other people, students or teachers, who expose the individual to new ideas or ways of working, developing their creative capacity.

Craft and her colleagues (Craft & Chappell, 2016; Craft, Cremin, et al., 2008) believe risk taking is necessary in Possibility Thinking, because it is essential for change. It develops an individual's skill within a domain and shapes their creative identity. Craft (2000) advocates for learner-centred classrooms as supportive environments for young people to safely engage with risk, developing their creative capacities and the agency to shape themselves and their learning journey. In taking this position, Craft is supported by Beghetto (2018) who advocates for educators to promote student engagement with what he calls "beautiful risk" or "actions that have the potential to make a positive and lasting contribution to the learning and lives of others" (p.19). In doing so, Beghetto believes students will also foster their own creativity in and beyond the classroom.

Beghetto (2016) also extends Craft's ideas of Possibility or 'what if' Thinking, arguing "young people must develop an unshakeable sense of possibility thinking" which will "enable people to think *and* act [author's original emphasis] in ways necessary for addressing complex, large scale, ill-defined problems" (p. 159) with a creative imagination to shape "what is" to "what might be" (p. 159). Runco (2016) echoes Beghetto's contention; cultivating UPT[1] in individuals through immersion in creative experiences is the best way to "prepare for an unseeable future" (p. 66). He maintains young people's exposure to creative learning equips them to seek novelty, play, and develop their decision-making, intrinsic motivation, and persistence, all necessary capabilities and attributes for a rapidly changing future (Runco, 2016, p. 67).

2.5 Linking creativity and attributes of Possibility Thinking across learning areas

Part of the difficulty in devising a common definition for creativity in an educational context is that the terminology used for capabilities can be the same but interpreted differently across knowledge systems. The previous section presented a model of creativity that may provide a solution for this problem in Queensland schools as they implement the QCAA 2019 Senior school syllabus suite. Wise Humanising Creativity driven by Possibility Thinking (Craft, 2013) incorporates several attributes as part of its framework that are also recognised as elements of creativity in a range of knowledge domains. This section will consider four of these: (1) innovation, (2) play with (3) immersion and (4) affective learning. It will examine how these terms are understood across knowledge systems and the influence of these understandings within subject areas. It will also consider where there might be common ground on which education can build to foster creative students.

2.5.1 Understanding the link between creativity and innovation.

Harris (2014) argues that in Australian education, the concepts of creativity and innovation have been problematised. In recent years, creativity has been separated from the arts and ideas around economic productivity have been incorporated, commodifying creativity. Harris (2016) points to Craft's research as one source for Australian education to find a way to resist the economic agenda and focus on

[1] UPT – Unshakeable Sense of Possibility Thinking.

utilising creativity to foster young people who are agentic in every aspect of their lives.

Wijngaarden, Hitters and Bhansing (2019) argue that within the creative industries, the term innovation is contested. They state that most innovation research occurs within the STEM (science, technology, engineering, and mathematics) sector. With the rise of creativity in society, the description of 'new' and 'innovative' is not as clearly understood. In industries such as mining and farming, the term innovation incorporates both process and product. So, innovation can describe a new process, without producing a new product. However, this understanding does not fit all industries. The authors (Wijngaarden et al., 2019) found in design-based sectors of creative industries, 'new' can denote the modification of the appearance of part of an item, rather than the creation of a new item. It also has individualistic, not collaborative, inferences. Drawing definitions of innovation from creative industries and applying them in an educational context will produce very different classroom teaching to Craft's approach for generating novelty.

Cropley (2015) argues that in the field of engineering education, creativity and innovation aligned with novelty is required. He contends that engineering education is focussed on producing individuals who can generate novel solutions, methods, and products to problems that arise from change. However, students are protecting their ratings by sticking to tested procedures and designs because they are afraid of the risk taking inherent to generating novel ideas and solutions. In a global environment of dynamic and rapid change, Cropley (2015) warns engineering is at risk of producing individuals unprepared to respond to future problems that would allow communities to thrive. Charyton (2015) concurs, arguing that creativity and innovation are at the heart of engineering and should be at the heart of education in this field. She draws on Csikszentmihalyi's (1999) research to argue that "the person, domain and field are relevant to understand creativity and innovation…. there needs to be acceptance of an idea, product or process within a field such as engineering and a domain such as… STEM" (p.136). Charyton (2015) advocates for the pressing need to cultivate creativity in the engineering education curriculum to improve student outcomes.

The contention in the Possibility Thinking framework (Craft & Chappell, 2016)—that innovation is aligned with novelty in the production of useful and valuable ideas and solutions—has applications within a range of knowledge systems. In an educational context, this understanding may assist educators to find continuity in their integration of creativity within the curriculum. The definition acknowledges that creative knowledge, skill and attributes are developed and applied in relevant and appropriate ways within different learning areas. One way of doing so may incorporate the Possibility Thinking element of play.

2.5.2 Understanding the link between creativity and immersive play.

Craft and colleagues (Craft & Chappell, 2016; Craft, Cremin, et al., 2008) define play as "children's highly engaged, serious, extended exploration, imagining situations generating diverse ideas and problems and solving these" (p. 408). Craft (2000) contends that play is an important aspect of identifying Possibility Thinking because it allows young people to engage their imaginations, senses, and cognitive faculties to generate new ideas and possibilities. The process of 'supposing' allows students to "entertain a hypothesis' or think or act "as if" (p. 40). Young people can pose and respond to questions and test ideas to solve them. Within the framework of Wise Humanising Creativity, Craft (2013) develops the idea of thinking 'what if' or acting 'as if' as an advantage of using Possibility Thinking in digital learning environments. In virtual learning contexts, young people experience greater independence from adult interference as they frame their own learning journey using multiple identities to explore possibilities (Chappell et al., 2017; Walsh et al., 2017). Engaging their creative imaginations as part of the play process allows them to "go beyond the obvious…seeing more than is immediately apparent" (Craft, 2000, p. 41), an advantage when preparing for a rapidly changing future.

A study (Cremin et al., 2012) of upper primary-aged children found play in an immersive classroom was extremely important to older children. Craft and Chappell (2016) describe immersion as "children's deep involvement in a benign environment combining high emotional support with high cognitive challenge" (p. 408). This is a creative learner-centred environment that encourages students to be responsible for shaping their own learning with teachers acting as facilitators. In this study (Cremin et al., 2012), the students' play episodes from Maths, Science, and Art were examined. In each subject the study documented, the elements differentiating play

from that of younger children were the strong narrative structure, the importance of peer collaboration, and the overlap between playful behaviour and imagination. These aspects of play are also identified by Craft (2013) as important aspects of play in digital environments as part of a Possibility Thinking approach, where young people can collaborate with multiple groups of peers in a range of digital spaces on a range of projects. Previous studies (Craft, McConnon, et al., 2012; Cremin et al., 2012) suggest older children and adults value collaboration and question posing in play as key attributes for developing Possibility Thinking in Wise Humanising Creativity to become agents of change.

In a study conducted with pre-adolescent girls, Dunn (2006) also found that play with older children differs from that of younger children. The key aspects of play valued by her participants were the "realness" of the dramatic play and the freedom from disruption. During sequences of play, the participants wanted to focus on the action as though it was real life and make it as lifelike as possible with as little disruption as possible. Dunn (2006) aligns with Craft's (2013; 2008) ideas on play combining with immersion, encapsulating serious engagement and extended exploration with imagination. Dunn (2006) comments that she has taken her new understanding about the importance of these two elements of play into her teaching of tertiary students. This would indicate that play may be equally important as an aspect of creativity in learning for the senior school students at the heart of this study. The findings of the studies referenced here suggest play in creativity is important in a range of learning areas, particularly when combined with the attribute of immersion.

Vygotsky advocates for creativity in education and believes play assists children to develop higher order thinking skills. As Bodrava and Leong (2015) explain, Vygotsky defines play as using the imagination to make believe. Vygotsky (2016 [1966]) perceives play as a transitional stage to making meaning of the world. The child uses their imagination to understand signs and actions they encounter, without the constraints of their operation in the external world. He believes this stage is a precursor to the development of symbolic thought and the cognitive process promoting intentional behaviour.

Vygotsky (1998 [1931]) argues play in childhood gives way to imagination in adolescence. He characterises imagination as the development of fantasy in the adolescent moving from the concrete thinking of objects in real life to the abstract thinking of visual and sensory imagery in the mind of an adolescent. Imagination provides the adolescent with freedom to develop new possibilities. The imagination, Vygotsky (1998 [1931]) believes, plays a very important role in the intellectual and emotional life of an adolescent, developing original concepts in their thinking, vital for innovation. The development of these abilities makes play and immersion critical parts of adolescent learning and development to realise their potential as agentic, adaptable adults.

Like Vygotsky, Bateson and Martin (2013) believe play stimulates many new forms of behaviour and thought. These include new ways of dealing with the world, which are learned because participants are enthusiastic and unconcerned about risk or fear of failure. Play also provides its own reward through immediate enjoyment. In the longer term, the authors contend, it develops physical, social, and cognitive skills, all important attributes of creative adults.

Root-Bernstein (2014) highlights many creative adults from both scientific and artistic fields draw links between their creative success as adults and their playful childhoods. Using their imaginations allowed them to generate insights through both word and sensory imagery. Imaginative play has allowed them to develop their creative thinking skills in response to problems and use analogy between their imaginary and the real world to test the chances of success (p. 12). Gardner (1993) supports this idea by sharing that Einstein credited the scientific discoveries he made as an adult to a playful childhood.

When linked with creativity, play is often associated with the attribute of immersion. Csikszentmihalyi (1996) dubbed this state of immersion, as “flow”. He found when creative individuals are immersed in a challenging, often risky activity albeit within their comfort zone, requiring engagement with the discovery of new ideas and concepts, they experienced effortless enjoyment (p. 110). Individuals experiencing flow find the job enjoyable and clearly defined, striking a balance between the individual’s abilities and the challenge before them, resulting in growth. The individual experiences an intense state of concentration on the task at hand, free from

distraction and any sense of the possibility of failure. Gardner (1993) states that many people engaged with creative activity experience intense states of flow from being intrinsically motivated in an activity in their chosen field. For example, Einstein had a great capacity for deep concentration and worked for hours at a time. The emotional and sensory experience of flow is its own reward and involves both cognitive and affective learning.

What is revealed by the literature is play in immersive environments is an integral part of creativity in a range of fields, including mathematics, science, and artistic pursuits. It is important for the development of cognitive skills, such as divergent thinking, social skills, and the ability to problem find and solve, and assists individuals to understand the world and their place in it. What is also common in these discussions of creativity is the activity of play is coupled with immersion in supportive learning environments. Play with immersion also encompasses both cognitive and sensory knowing.

2.5.3 Affective Learning.

Craft's (Craft, Cremin, et al., 2008) development of the concept of Possibility Thinking incorporates the element of being imaginary, as distinct from play. Being imaginary is defined as, "children engaging in what might be, designing and inventing" (Craft & Chappell, 2016, p. 408). Aligned with pursuing novelty, Craft's (2000) discussion of this component in her earlier work incorporates both a non-conscious and a conscious layer. The former layer involves using intuition, the senses, and the emotions as part of the creative process. The conscious layer is the rational faculties. Craft explains the affective elements are initially involved in the incubation of creativity from thought to action. They generate creative ideas and relate to discovery or inspiration. Craft (2000, 2005) argues that this is the case for all areas involving creative action including maths, science, and arts. In this view, she aligns herself with the theories of Dewey.

Dewey (2005 [1934]) promotes the belief that experience is an important part of living and interacting with the environment. Sensory learning is an important component of creativity because it empowers the individual to gain insight and inspiration and generate novel outcomes and ideas. Dewey (2005 [1934]) believes novelty begins with intuition by building on the individual's previous experience. It

is where “the old meets the new… the readjustments [appear] like a flash of revelation; although it is in fact prepared for by a long and slow incubation” (p. 277). New realisations bring the possibility of new connections between ideas and new solutions.

Bohm and Peat (2010) espouse aesthetic experience, including imagination and intuition, is as important to creativity and new possibilities in mathematics and science as it is in the arts. In all these fields, Bohm and Peat (2010) believe new ideas and perceptions change from moment to moment, not according to a set of rules. They argue the beauty and harmony of art and life are expressed through the equations and formulae that resolve a problem for the mathematician and the scientist. As in art, creative perception begins as imagination and intuition:

> creating a set of mental images, which imitate the form of real things…However, the powers of imagination actually go far beyond this, to include the creative inception of new forms, hitherto unknown. These are experienced not only as visual images but also through all sorts of feelings, tactile sensations, and kinaesthetic sensations, and in other ways that defy description. (p.263)

Aesthetic learning is therefore an essential component of creativity in mathematics and science as well as the arts. It appears important for education to foster young people’s understanding of and ability to utilise affective learning in every learning area to realise new possibilities. This, in turn, equips young people to flourish in every part of their lives.

2.6 Conclusion

Glăveanu (2018) remarks that “creativity is largely considered today synonymous with success” (p. 25). Creativity is perceived across industry, government, and education as a highly desirable combination of knowledge, skills, and attributes for individuals to possess. How creativity is to be defined, however, is still fiercely debated within this field of research. Education in Australia aspires to integrate creativity across all learning areas as a central priority to produce agentic young people equipped to meet the demands of a dynamic society. However, achieving favourable outcomes is hindered by the need to find a common definition for

creativity that is relevant to all learning areas within an educational context. From the QCAA 2019 Senior school syllabus suite, Queensland educators seek to develop learning programs that grow young people with the confidence, knowledge, skills, and personal attributes to engage successfully with a dynamic and rapidly changing society. Craft's (2013) Wise Humanising Creativity may provide a framework for embedding creativity across learning areas with the aspiration of fostering young people to wisely and ethically utilise their creativity for the betterment of themselves and the community at large. What is also evident from this Literature Review is the presence of creativity in each domain, that is, not exclusively within the arts. A range of knowledge systems, including Mathematics, Science, and Health aspire to develop creativity using the knowledge and skills of their own domain to seek novel solutions. Chapter three presents the methodological approach for the study, the research questions, and the interpretive research lens. It also outlines the research design, strategy, and approach used for the study. The methodology then discusses the position of the researcher, the ethics statement, and the limitations of the research.

3 Methodology

3.1 Introduction

This chapter outlines the methodological approach for this research study, introducing the questions that frame it and the way in which the study was conducted. The study has adopted a qualitative research approach described by Merriam and Tisdell (2015) as a way to "understand how people make sense of their lives and experience" (p. 24). The chapter provides an outline of the overall research design of bounded case study and the data collection methods employed for the study. The framework for data analysis is presented and the position of the researcher is established. The chapter concludes with a discussion of the limitations of the research and an explanation of the important ethical considerations for the study's completion.

3.2 Research aims and questions

This study addresses the perceived lack of consensus when defining creativity within educational contexts. The research aims to highlight senior school teachers' perspectives on the transition occurring in Queensland education, as schools strive to instil 21st century capabilities in senior school students through creative experiences, across all learning areas. The study delves into senior school teachers' perceptions of creativity and how these perceptions are integrated into curriculum planning, in and outside the arts, with the objective of helping senior students shape themselves to thrive in a rapidly changing world.

3.2.1 Research questions.

This study has one overall research question and two research sub-questions:

RQ1 In what ways can Craft's (2013) Wise Humanising Creativity framework support Queensland senior school teachers with a common understanding of creativity across all eight learning areas of the curriculum?

The research sub-questions are:

SQ 1. What meaning and attributes do teachers articulate about creativity in relation to their subject syllabus?

SQ 2: How have teachers interpreted and integrated creativity in their curriculum planning?

3.3 Interpretive Research Lens

This study focuses on how senior school teachers in Queensland understand creativity and how they have integrated it with their curriculum planning as they implemented the QCAA 2019 Senior school syllabus suite. Craft's (2013) Wise Humanising Creativity provides a suitable theoretical paradigm for the analysis of the creative learning at the centre of this research. As outlined in the Literature Review (chapter 2), Craft (2013) promotes authentic learning through Possibility, or 'what if', Thinking as an approach to learning in daily life. Possibility Thinking connects individuals to the world and provides the creative knowledge, skills, and attributes needed to evolve as creative, agentic individuals who contribute productively to the world around them. The evolution of Possibility Thinking into Wise Humanising Creativity (Craft, 2013)—with the additional focus on the growth and interconnection of human beings and the wisdom of stewardship for the outcomes of individual's creativity—provides an apt framework for the analysis of the QCAA 2019 Senior school syllabus suite, which aspires to develop creative and confident individuals to meet the challenges of the 21st century world.

This study pursues a universal definition of creativity for an educational context. Craft (2013) promotes Wise Humanising Creativity as a beneficial approach to creative learning and the development of autonomous young learners in educational contexts (chapter 2). Conceptualised by combining Possibility Thinking and Humanising Creativity with 'journeys of becoming' (Chappell, 2008; Chappell et al., 2012) and 'wise' creativity (Craft, 2008) focussing on ethical outcomes of creativity, the framework provides a more humane alternative to performative conceptions of creativity. Craft advocates for teachers to be facilitators who foster students' creative capacity by encouraging them to develop the growth mindset necessary for lifelong learning. In a constantly dynamic and globalised context, Craft (2013) points to the necessity for young people to be adaptive, agentic, and inclusive in their approach to life. Developing the creative attributes underpinning the Wise Humanising Creativity framework (Craft, 2013) provides a foundation for student learning across all eight learning areas, building their self-determination and applying their creativity for the benefit of others and the world. How the Wise Humanising Creativity framework

might provide a common understanding of creativity to support senior school teachers to achieve this aspiration provides the data to address the main research question.

The two sub-questions address the role of teachers in building students' creative capacity through their understanding of creativity and their planning of creative curriculum learning in their subject area. The two sub-questions were addressed by the questionnaire and interview data provided by the participants (chapter 5). In each case, the data has been analysed through the lens of Wise Humanising Creativity (Craft, 2013).

To help shape the analysis of data, I created a codebook (Appendix 1) that lists and defines the core features of Possibility Thinking underpinning Wise Humanising Creativity (Craft, 2013), as identified by research conducted in face-to-face (Burnard et al., 2006; Craft, 2001; Craft, Cremin, et al., 2012; Craft, McConnon, et al., 2012; Cremin et al., 2006) and virtual learning environments (Chappell et al., 2017; Craft, 2012; Walsh et al., 2017). It also includes 'humanising' personal qualities necessary for transformational change with creativity, and the 'wise' element for the ethical consideration of creative outcomes. These qualities have been applied in the analysis of the QCAA 2019 Senior school General syllabus documents included in the Syllabus Audit (chapter 4), which has informed the participant data collection tools: the questionnaire and the interview.

The codebook (Appendix 1) was created to provide consistency in the understanding of creative attributes from the Wise Humanising Creativity framework (Craft, 2013), as they were applied to the data collected from the participant questionnaire and interviews across all eight learning areas. Additionally, the codebook illustrates links to key terms used in the QCAA (2017b) 21st century skills framework underpinning the General Senior school syllabus documents. The codebook also provides a bridge between the Syllabus Audit (chapter 4) and the data analysis in the Findings (chapter 5).

3.4 Research Design

Denzin and Lincoln (2018) argue that qualitative research is "the world of lived experience, for this is where individual belief and action intersect within culture" (p. 9). A qualitative methodological approach best aligned with this study, which searches

for meaning and depth in understanding of the experiences of senior school teachers in Queensland with creativity under the new suite of Senior school syllabus documents implemented by the QCAA in 2019. Meyrick et al. (2019) argue for the value of qualitative data in addition to quantitative to provide a more complete understanding of the context in which policy is enacted. Extra detail about the experience of individuals and the commonalities of experience existing for the collective promotes "better voice for stakeholders" and "a better context for decision making" (p. 377). Specifically, the study employs bounded case study methodology, described by Merriam (1998) as "intensive, holistic description and analysis of a bounded phenomenon such as a …process or social unit" (p. 27).

Online questionnaires and one-on-one interviews were employed to collect data about the participants' understandings of creativity and its associated attributes in their subject area. The data collection instruments also provide insights into the participants' perceptions regarding the alignment of creative attributes and the QCAA 21st century skills framework (2017b) underpinning the QCAA Senior school syllabus documents. The interaction between the participants and the researcher through each stage of data collection provided opportunities for teacher participants to engage in co-constructing and interpreting understandings of their experience.

Stake (1995) maintains that bounded case study is conducted in education to understand the complexities and the uniqueness of a specific case within its real life context. Case study researchers co-construct meaning with their participants about their experiences of a phenomena by allowing them to tell their stories and exploring the insights they reveal. The inductive process of data collection foregrounds the viewpoint of the participants. Collecting several sources of data within the study ensures rich description of complex social constructions and allows for multiple voices to shape the researcher's understanding of how the participants make meaning in their world.

Craft believes teaching should develop the individual for life. Teachers, Craft (2008) argues, have "an immense responsibility for fostering creativity" (p. 23) so students can use knowledge, skills, and personal attributes to shape their own learning journey and identity. Using bounded case study methodology and methods highlights the teachers' voices about the development of their understanding of creativity and its

implementation into their curriculum planning for the empowerment of their senior school students in life. The methodological approach permits refinement of the data, exploring how teachers create learning contexts that permit students to grow, deepening their understanding of the world and empowering them to be adaptable for change within it.

3.5 Research Strategy

3.5.1 Bounded Case Study

Bounded case study is designed to focus on the detail or richness of the participants' lived experiences, making it appropriate for this constructivist, interpretivist study, illuminating "the meaning constructed by human beings as they engage with the world they are interpreting" (Crotty, 1998, pp. 42 - 43). Yin (2018) argues that bounded case study is well matched to circumstances in which it is impossible to separate the phenomenon being studied from the context. This study focuses on senior school teachers' experiences integrating creative learning into their curriculum planning and delivery of the QCAA 2019 Senior school syllabus suite across all learning areas for the empowerment of their students. Exploring the participants' experiences in context is essential to address the research question and sub-questions. Bounded case study, defined by Merriam and Tisdell (2015) as "a single entity, a unit around which there are boundaries… such as a program" (p. 38), is a highly appropriate methodology for this study which seeks to understand, in context, the creative learning experiences of senior school teachers in Queensland under the 2019 QCAA Senior school syllabus suite. The study is bounded by one program in one educational system of one state. Merriam and Tisdell (2015) state that, as with other qualitative methodologies, the researcher is the primary means of data collection and analysis, using inductive approaches and a product which is "richly descriptive" (p. 37).

Yin (2018) also comments that case study is an appropriate methodology for answering "how" and "why" questions (p. 28). This study analyses the experiences of sixteen teachers across eight learning areas in State, Independent, and Catholic schools in Queensland while they implemented creative learning through their subject area's General Senior school syllabus document to enhance the learning outcomes for their senior school students. The study also seeks to address the lack of a universal definition for creativity in an educational context. The objective of educational research is to improve student learning. Gaining a deeper understanding

how senior school teachers experienced creativity in learning with the QCAA 2019 Senior school syllabus documents is significant for teachers, policy makers, and researchers as schools work to maximise the quality of students' learning experiences and their outcomes.

Case study involves a process of collecting multiple forms of data to create a deep understanding of each case (Cresswell, 2015). Prior to the collection of participant data, the study engaged with document analysis as a data collection tool. The documents analysed in the study are the fifteen General syllabus documents from the QCAA 2019 Senior school syllabus suite for the subject areas taught by the study participants. In this study, document analysis has been termed a Syllabus Audit. Merriam (1998) comments that "documents of all types can help researchers uncover meaning, develop understanding and discover insights relevant to the research problem" (p. 118). As part of this case study research, document analysis affords another data source for the triangulation of participant data. The methodological approach to the document analysis is detailed in the Syllabus Audit methodology (4.2 on p. 46).

As the objective of this study is to give a voice to the participants, empowering them to tell their own story, it uses qualitative constructivist methods with bounded case study for data collection and analysis. Questionnaires and interviews are suitable data collection tools for case study as an inquiry methodology which is constructivist and interpretivist in nature, because the paradigm emerges from the researcher and research participants' involvement with the data, situated in the social context of its creation. Yin (2018) believes high quality case study research requires the researcher to be vigilant in the constant interaction between the issues being studied and the data collection. The researcher must be alert to taking advantage of unexpected opportunities for gaining a deeper understanding of the case (Yin, 2018). "Asking good questions", Yin (2018) advocates, is especially important in case study to engage in "a rich dialogue with the evidence" (p. 84). The researcher must be actively engaged with the data collection in order to respond flexibly to unexpected ideas from the participants and to raise further questions refining and corroborating evidence. According to Yin (2018), interviews provide essential case study evidence because "most case studies are about human affairs and actions" (p. 121). The study explored sixteen participant experiences across fifteen subject areas or cases within

State, Independent, and Catholic school sectors in Queensland. Using one program, the QCAA 2019 Senior School General syllabuses, makes it a collective bounded case study (Cresswell, 2015) to create richer insight into the creative learning experiences of these teachers.

3.6 Research Context

Recruitment of participants was conducted during the first Australia-wide lockdown for COVID-19 in 2020, when teachers were adjusting to a number of changes in curriculum delivery, such as teaching online. Under these conditions, the sampling method adopted was opportunistic (Miles et al., 2014) because it relied on recruiting teachers who could find the time, space, and energy to participate in the study. The sampling included some snowball sampling (Miles et al., 2014) to ensure participants for all eight learning areas were included.

3.6.1 Introducing the Participants

This section outlines the participants for each learning area. In total, sixteen participants were included in the study's data collection. To protect their anonymity, participants were asked to choose a pseudonym, which will be used here to identify each teacher. The participants collectively teach in the State, Catholic, and Independent sectors in Queensland. All of the participants teach in metropolitan schools. School names and locations have also been anonymised to protect the participants. Each participant is a specialist teacher for the subject area they represent and was teaching the General syllabus subjects they discuss in this study. The insights they provide about creativity and its integration into the planning and delivery of their General syllabus subject area are included in the Findings (chapter 5). The two sources of participant data collection are presented separately. The questionnaire data provides their initial understandings of creativity in relation to their subject area. The interview data presents a deeper discussion of the understandings of creativity arising from the questionnaire data, and of the planning and implementation of creativity in senor school learning within each subject area.

ENGLISH

For the English learning area, one participant, Mandy, was recruited. Mandy teaches in an all-girls Independent school. Mandy chose to provide data for General English only.

HEALTH AND PHYSICAL EDUCATION

The second learning area is Health and Physical Education. There are two General subjects offered in this learning area. They are Health and Physical Education. There was one participant, Rebekah, who represents both subjects in this learning area. Rebekah teaches in a co-educational Independent school.

HUMANITIES AND SOCIAL SCIENCES

The third learning area organised within the QCAA 2019 Senior school syllabus suite is Humanities and Social Sciences. The General syllabus subjects included for this learning area are Business and Modern History. There are three participants for the study in this learning area. One, Ian, teaches Modern History and the remaining two, Lucy and Ruth, teach Business. The participants in this learning area each teach in different educational sectors: one in an all-boys Catholic school, one in a co-educational State school, and one in a co-educational Independent school.

LANGUAGES

Languages is the fourth learning area in the QCAA 2019 Senior school syllabus suite. The language included is Japanese. Joan and Mai both teach in the Independent sector, one in a co-educational school and one in an all-girls school.

MATHEMATICS

Mathematics is the fifth learning area included in the QCAA 2019 Senior school syllabus suite. The General syllabus subjects included are General Mathematics, Mathematics Methods, and Specialist Mathematics. There are three participants in this learning area: Bob and Henry, who both teach in different co-educational schools in the Independent school sector, and Keith, who teaches in a co-educational school in the Catholic school sector. Bob and Henry predominantly teach

Mathematical Methods and Specialist Mathematics. Keith teaches General Mathematics.

SCIENCES

Sciences is the sixth learning area included in the QCAA 2019 Senior school syllabus suite. The subjects included in this research are Biology and Chemistry. Alex teaches Biology in a co-educational school in the Independent school sector and Marie teaches Chemistry in a co-educational school in the Catholic school sector.

TECHNOLOGIES

Technologies is the seventh learning area included in the 2019 QCAA Senior school syllabus suite. Design was the subject area included in the data collection for this learning area. There is one participant in this data sample, Elle, who teaches in a co-educational high school in the State education sector.

THE ARTS

The Arts is the last of the eight learning areas included in the QCAA 2019 Senior school syllabus suite. Three subjects were included for this learning area. They were Drama, Music, and Film, Television and New Media. Three participants have been included, one for each of these subjects. John teaches Drama in a co-educational school in the Independent school sector, Jane teaches Film, Television and New Media in a co-educational school in the State school sector, and Huia teaches Music in a co-educational school in the Independent school sector.

3.7 Research Approach

The study delved into the experience of sixteen teachers across eight learning areas in schools in Queensland. The participants teach in the three major schooling systems in Queensland: State, Independent, and Catholic. The choice of arts and non-arts subjects included in this study was dependent on school offerings and the availability of subject teachers.

Data collection commenced in 2020 while Queensland schools were closed, and learning moved to online mode as part of the first COVID-19 Australia-wide lockdown. As a result, teachers suffered an increased burden for planning and

delivering curriculum and less time for engaging with activities outside their core business. Recruitment of participants for the study, consequently, relied on teachers who felt they had the time and energy to engage with the study, and the use of opportunistic sampling (Miles et al., 2014). Where additional participants were required to ensure all learning areas were included, snowball sampling was utilised (Miles et al., 2014). The study focussed on teachers' voices and the experience of implementing creative learning under the QCAA 2019 Senior school General syllabus suite. There were two stages of participant data collection. The first stage was an online questionnaire which was used to ascertain the participant teachers' understandings of creativity and associated attributes within their subject areas. The questionnaire also provided some initial information regarding the possible alignment between creative attributes, included in Craft's Wise Humanising Creativity Framework (Craft, 2013), and the QCAA 21st century skills framework (QCAA, 2017b) underpinning the syllabus documents. The second data collection instrument was a one-on-one, semi-structured interview. The purpose of the interview was to explore the learnings from the questionnaire in greater depth and how they were applied in curriculum planning. As social distancing conditions resulting from COVID-19 relaxed, participants could choose to participate in the interview either online via Zoom, or face-to-face. Particularly under COVID-19 conditions, the process was designed to cause the least possible disruption for the participants. Each stage of the data collection was conducted once. Both the questionnaire and the interview were designed to capture teachers' voices and represent it in depth in response to the research question and sub-questions.

This process also provided flexibility so that the interview questions could be modified and adapted in response to emerging understandings from the questionnaire data collection instrument (Brinkmann & Kvale, 2015). The following Table 1 illustrates the relationship between the research question and sub-questions and the data collection methods.

Table 1 Research Plan

Location or venue for data collection	The study delves into the experience of senior school teachers from the State, Independent, and Catholic sectors of education in Queensland as they integrated creative learning with the implementation of the QCAA 2019 Senior school syllabus suite. It responds to the lack of a universal definition for creativity within the context of education. Data collection via the questionnaire was conducted online. The interviews were conducted online or face-to-face, as the participant chose.		
Indicative concept linking research plan to research questions	Research question 1: In what ways can Craft's (2013) Wise Humanising Creativity framework support Queensland senior school teachers with a common understanding of creativity across all eight learning areas of the curriculum?	Research sub-question 1: What meaning and attributes do teachers articulate about creativity in relation to their subject syllabus?	Research sub-question 2: How have teachers interpreted and integrated creativity in their curriculum planning?
Data required to address question	Through the lens of Craft's (2013) Wise Humanising Creativity, participant understandings, values, and beliefs about what constitutes creativity across all eight learning areas and whether they believed these capabilities are instilled in learning activities within each subject under the QCAA 2019	Participant understandings, values, and beliefs and assumptions about creative knowledge, skills, and attributes within curriculum planning and delivery in their subject area and the subsequent learning outcomes for senior students.	Participant interpretation of creativity and its application in the planning of curriculum for senior students in their subject area, using the QCAA 2019 Senior school General syllabus document.

	Senior school General syllabus suite. This provided insights into developing a common definition for creativity in an educational context. The researcher's understandings of the data for each participant (Yin, 2018).	The researcher's understandings of the data for each participant (Yin, 2018).	The researcher's understandings of the data for each participant (Yin, 2018).
Recording and Collection of evidence	Online questionnaire data and online or face-to-face interview data from participants in all eight learning areas. The questionnaire provided data revealing the participant's understanding of creativity and its attributes. It sought to understand whether Craft's (2013) Wise Humanising Creativity framework aligns with QCAA 21st century skills framework (QCAA, 2017b) and also provides insights for a common definition of creativity in education.	Open and closed questions on the questionnaire regarding definitions of creativity and associated attributes. Interview data which explored the participant understandings of creativity in their subject area in more depth.	Questionnaire data regarding the process and support participants received in the implementation of their subject area's General syllabus document. Interview data regarding the teacher participant's experience of integrating creative learning with the implementation of the General syllabus document in their subject area.

3.7.1 Questionnaire

The first round of data collection completed by each participant was an online questionnaire (see Appendix 2). In this qualitative study, it allowed for a broader data set to be collected about how the participants understood creativity and its attributes, and any commonalities that provided grounds for a common definition of creativity across learning areas. The questionnaire also provides insights regarding the alignment of understandings of creativity between Craft's (2013) Wise Humanising Creativity and the QCAA 21st century skills framework (2017a) underpinning the Senior school syllabus documents. This information was useful in constructing questions for the one-on-one, semi-structured interviews.

The questionnaire was distributed electronically. It was designed to take no more than 20 minutes to complete at a time that was convenient to the participant. The questionnaire had to be completed and returned by each participant before participating in an interview. The questionnaire contained a mix of open and closed questions. Foddy (1999) promotes the use of open questions in qualitative research, because "they allow the respondents to say what is really on their minds without being influenced by suggestions from the researcher" (p. 127). Fowler (2014) adds that open questions can produce data that is unexpected. Allowing the participants to offer unfettered data is a key component of qualitative constructivist, interpretivist methods in education research and critical to the aims of this study.

Closed questions are useful when comparing answers across groups (Fowler, 2014). Using closed questions for this study has provided comparable information about senior school teachers' understanding of creative attributes and the possible alignment of these attributes with the skills included in the QCAA 21st century skills framework (QCAA, 2017b) as they implemented the QCAA 2019 General Senior syllabus document in their subject area. The questionnaire provides data to address the main research question regarding Craft's (2013) Wise Humanising Creativity as a possible common definition of creativity across all learning areas in an educational context. It also contributes data for sub-question one regarding the meaning and attributes senior school teachers ascribe to creativity in their subject areas and sub-question two regarding how teachers have interpreted and integrated creativity into their curriculum planning. The questionnaire produces a cross section of data to compare across all eight learning areas and, with the interview data, provides a

means of triangulation as well as revealing patterns for coding in response to the research question and sub-questions.

3.7.2 Interviews

The questionnaire data supplied by each teacher participant was used to construct the questions for their interview, which delved into the participant's understandings about creativity and their experience of implementing the General syllabus document for their subject area (Appendix 3). The participants were required to complete both a questionnaire and an interview before their data could be included in the study. The interviews were approximately one hour in length. A single interview was conducted with each participant to reduce the inconvenience for participants who were responding to dynamically changing teaching conditions. In Queensland, as social distancing requirements changed in relation to COVID-19 participants were able to choose whether it was more convenient to conduct their interview online or face-to-face. Twelve of the sixteen participants chose to conduct their interview face-to-face. Yin (2018) says the case study interview can allow the researcher to "capture an interviewee's own sense of reality and its meaning" (p. 120), making it an appropriate method of data collection for this interpretivist study.

3.8 Approach to Data Analysis

This study takes a constructivist bounded case study approach. Therefore, the data analysis is an interpretation of the participants' experiences with creative teaching and learning and how it is utilised to empower senior school students to thrive in life. As outlined in section 3.7, multiple sources of data were collected from sixteen participants across eight learning areas and three educational sectors within the Queensland education system. A broad cross section of data was gathered from the participants who responded to an online questionnaire about their understandings of creativity and its attributes in their subject area. A deeper exploration of the data was enabled by one-on-one semi-structured interviews.

Consistent with case study method, the open-ended questions and the one-on-one interviews were initially coded inductively and then deductively. Inductive coding used colour coding of open codes to capture actions and processes. Miles et al. (2014) argue that inductive coding is "better grounded empirically… and [satisfies] other readers who can see the researcher is open to what the site has to say rather

than force fit…pre-existing codes" (p.81). The closed questionnaire items were analysed using computer software. Questionnaire and interview data have been presented separately in the Findings (chapter 5).

A codebook (Appendix 1) has also been developed and utilised as a lens in the analysis of data. It has ensured consistency in the interpretation of creative attributes from Wise Humanising Creativity (Craft, 2013) which were applied as a lens to the analysis each of the eight learning areas and illustrates possible links with key terms used in the QCAA (2017b) 21st century skills framework underpinning the General Senior school syllabus documents. The codebook also forms a bridge between the theoretical literature and the findings.

Deductive coding of the open questions on the questionnaire and the interviews used Craft's (2013) Wise Humanising Creativity framework as a theoretical lens for each participant's understanding of creative learning in their subject area. The deductive coding used Schön's (1983) Reflection in Action approach. Refining the coding in this way allows the qualitative researcher to look for patterns in the development of themes and refine ideas in each new iteration of the data collection process to create a clear map of emerging ideas "of what is happening and why" (Miles et al., 2014, p. 93). Using inductive and deductive coding refines the researcher's understanding of the data, while remaining flexible (Miles et al., 2014, p. 93). This approach to data analysis is appropriate for an interpretivist study of the meaning that is being created about a phenomenon.

The data analysis has been designed to foreground the teachers' voices regarding their curriculum planning experiences with creativity and their perceptions about its impact on the learning outcomes for their students. The teachers' insights have the potential to assist other teachers, school administrators, and policy makers to fine tune curriculum delivery and improve student outcomes in the future. Reflection on their own learning journey will also assist these participants in developing their own understanding and delivery of curriculum with creativity.

3.9 Position of the Researcher

As researcher, I bring to this study an extensive background as an arts and humanities educator. I also have substantial experience as a Head of Faculty in a high school setting. My commitment as an educator to utilising creativity to grow

confident and creative individuals was the impetus for this study. My background as an educator provides me with a deeper understanding of pedagogical practices, educational traditions, and curriculum requirements, enabling me to exercise greater insight into classroom learning experiences involving creativity. It allows for deeper perception of the qualities of Craft's (2013) Wise Humanising Creativity when analysing the data and understanding the benefits for students that result from creative learning.

The position taken within this study was as a researcher and not as a practitioner or educator. In qualitative research, the researcher's purpose is to collect and analyse data from the participants as they make meaning of their lived experience (Merriam & Grenier, 2019). In this interpretivist study, as researcher I have co-created meaning with the participants about their perceptions, beliefs, values, understanding, and experiences of teaching with creativity in a range of subject areas, and how they believe their planning and curriculum delivery with creativity empowers senior school students to thrive in life. Qualitative research is not value free, because it highlights meaning created from the participants' experience of a phenomena (Merriam & Grenier, 2019). The outcome of the study is a written thesis.

3.10 Research Ethics Statement

This study has been granted ethical clearance by the University Human Research Ethics Committee (UHREC): approval number 1700000563. The UHREC considered the project to be low risk, as none of the participant groups would experience risks beyond their everyday experience due to participation in this research.

3.11 Limitations of the Research

As a qualitative study, this research is a snapshot of a moment in time and is not generalisable. The study has provided evidence about the experience of sixteen senior school teachers with one program in Queensland and may not necessarily represent the experience of teachers in other schools or educational systems. As teachers gain more experience with creativity and its attributes, as well as with this suite of Senior school syllabus documents, their understanding of how to utilise creativity in learning successfully to empower their senior school students will also change. The fact that all schools were located in Queensland metropolitan locations

needs to be noted as a limitation of the study because findings may not be directly transferrable to Queensland regional, rural, or remote schools. Teachers and students in these locations may experience further constraints resulting from travel time and restricted access to learning resources and reliable Wi-Fi connections.

Administrators, Heads of Faculty, and teachers transitioned to implementing the new QCAA 2019 Senior school syllabus documents under considerable time pressure. This was exacerbated by the unprecedented conditions arising from the COVID-19 pandemic. Access to teachers would normally be restricted to a degree by other school activities, but the lockdown of school campuses in 2020 greatly diminished access to educators. Completion of this study was due to the generosity and energy of the sixteen participants who valued the study's potential outcomes for their students and their own teaching practice. It was necessary to protect the participants by being flexible and sensitive in negotiating time for data collection. This was also important to ensure the veracity of the data. Individuals under pressure may not give careful thought to their responses, impacting the quality of the data collected.

3.12 Conclusion

This chapter has outlined the methodological framework and the research plan selected for this study which considers how Craft's (2013) framework for Wise Humanising Creativity provides insights into the engagement with creativity for teachers and curriculum leaders to enhance learning for senior school students in Queensland across all eight learning areas. It also explores how senior school teachers in Queensland integrated creativity into learning during the implementation of the QCAA 2019 Senior school syllabus suite across all eight learning areas. It examines how senior school educators perceive creativity, as well as how they utilise it in their subjects area to empower their students to thrive in life. Consistent with the focus of this qualitative study, a bounded case study methodology using case study methods was selected to allow teachers to voice their own experience, attitudes, values, perceptions, and beliefs. This constructivist, interpretivist study explores the value of creativity in education for senior school educators, providing possibilities for maximising the benefits of curriculum for senior school students in schools. To this end, a range of data collection methods were employed providing both breadth and depth to the body of data that was analysed in response to the research question and sub-questions. Member checking and triangulation has ensured accuracy of the

data collected from participants, as well as adding rigour to the processes of data collection and analysis. The data analysis uses Craft's (2013) Wise Humanising Creativity underpinned by Possibility Thinking (2000; Craft, Cremin, et al., 2008) as the theoretical lens for the interpretation of creativity and creative learning in this process.

The next chapter presents an audit of QCAA 2019 General syllabus documents for evidence of how creativity and its attributes are included across each of the eight learning areas. It considers whether each subject area aspires to produce young people equipped for a wellbeing or economic innovation outcome.

4 Syllabus Audit

4.1 Introduction

As an educator in Queensland schools, I specialised as an arts and humanities teacher in Drama and English. For this study, I interviewed senior school teachers in a range of subject areas across all eight learning areas, to ask questions about their understanding of creativity and its integration in their curriculum planning. In order to do this, it was necessary for me to have knowledge of the syllabus documents across the learning areas, and this audit highlights questions about where creativity is represented within each subject. This chapter provides an overview of where references to creativity exist, and are absent from, the 2019 Queensland Curriculum and Assessment Authority (QCAA) General Senior Syllabus documents in both arts and non-arts subjects. The audit at section 4.3 (p. 48), investigates how creative knowledge, skills, and attributes are included across the QCAA syllabus documents for all General arts and non-arts subjects used in Queensland schools from 2019. Only the fifteen subject areas represented by the research participants have been included in this chapter. While the Literature Review (chapter 2) provides an understanding of what creative knowledge, skill, and attribute development may entail within knowledge systems in a global sense, the audit provides context for how creativity manifests locally in knowledge systems within senior school education in Queensland. The analysis of the audit focuses attention on tensions existing in the interpretation of creativity across learning areas, as well as understandable disciplinary differences and intriguing absences in some sections of the syllabus documents. Traditionally, creativity has always been associated with The Arts. However, the audit foregrounds aspects of creativity in each of the subjects across every learning area. This suggests that the binary between arts and non-arts subjects is a false one and can be dismissed. The audit highlights opportunities provided by the school curriculum to develop senior school students' creative capacity as an approach to their daily lives. It also provides opportunities for me to explore the literature further and improve my curriculum and knowledge system literacy in preparation for the conversations I had with teachers in the field.

QCAA Senior school syllabus documents have been implemented in most State, Independent, and Catholic schools in Queensland for years 11 and 12. There are 77

syllabuses on offer for students who have a higher education (General) or vocational (Applied) focus for their post schooling future. These are organised into eight learning areas: English, Health and Physical Education, Humanities and Social Sciences, Languages, Mathematics, Sciences, Technologies, and The Arts. This chapter audits fifteen documents across all eight learning areas. Only General, not Applied, syllabus documents have been included in the audit, because the majority of senior students will study at least one of these. Where participants were available, three syllabus documents have been included for each learning area to ensure the widest possible coverage of knowledge systems, applied skills, and personal attributes. The inclusion of multiple subject areas also provided a meaningful cross section of the population of senior school students studying in each learning area. Learning area and subject titles have been capitalised to align with QCAA formatting.

For the learning area of English, General English has been included because the number of students studying this subject is the most representative across the senior student population. In the learning area of Health and Physical Education, only two General syllabus documents were available. Within the learning area of Humanities and Social Sciences, Business is one of the newly introduced subjects in this Senior school syllabus suite. Its focus is innovation within the business world. Modern History was chosen because of its focus on human interconnectedness in the modern world and personal attributes, such as empathy. Within Languages, Japanese has been included and is one of the most popular Asian languages studied in Queensland schools. In the learning area of Mathematics, the three subjects most likely to be studied by the majority students have been chosen. This also includes levels of specialisation within this learning area. In Sciences, Biology and Chemistry have been included, as they are two of the three most likely subjects to be studied. I sampled Design from the learning area of Technologies. Design is another of the newly introduced subjects in this syllabus suite and has a focus on innovation for human wellbeing. From The Arts, Drama has been chosen as the performing artform I taught and know best, Music as a popular performing artform, and Film, Television and New Media as a visual art that embraces information technology as its foundation.

4.2 Methodology for auditing the syllabus documents

To undertake the audit of QCAA Senior school syllabus documents, it was clear from the outset that a systematic approach was needed. Each subject area chosen is listed vertically within each of the eight disciplines nominated by the QCAA. Each subject syllabus has also been divided into three parts: Course Overview, Units of Work, and Assessment. The qualities of Possibility Thinking as identified by Craft (2000, 2013; Craft, Cremin, et al., 2008) were listed horizontally across the top of the table.

My audit began with the English syllabus and the Drama syllabus. The approach allowed for calibration of the table with the two subjects with which I am most familiar. Terminology that was the same as, or seemed to indicate, a specific quality listed across the top of the table was noted in the table and recorded in the comments column. It became apparent that there were personal attributes or aesthetic qualities indicated in the syllabus documents that were not accommodated by the table. To overcome this difficulty, the table was expanded and modified using additional qualities found in the Wise Humanising Creativity framework (Craft, 2013), which focusses on human wellbeing and includes Craft's conceptualisation of Possibility Thinking. Craft (2013) maintains that, in this form of creativity, one of the differentiating features is the need for individuals to act ethically. Craft's (2000; Craft, Cremin, et al., 2008) work with her colleagues on creativity also emphasises the importance of sensory, as well as cognitive, learning as part of the creative process. The table was, therefore, modified. Personal attributes, including resilience, persistence, and intrinsic motivation, and social skills such as collaboration and teamwork were placed in one column. Wise Creativity or ethical motivation and aesthetic learning were included as additional qualities and columns. After these modifications, the syllabus documents that had already been audited were revisited to ensure that all qualities had been applied consistently to each document. These qualities were also used to analyse participant data in this study.

Above the table at section 4.3 is a key which defines the traits of each of the qualities of Wise Humanising Creativity encompassing Possibility Thinking as defined by Craft (2000, 2013; Craft, Cremin, et al., 2008). After completing further syllabus documents, it was apparent that I was ticking the column for a quality when only one of the descriptors was present. For example, within the elaboration for 'immersion'

found in Craft, Cremin, et al. (2008) is the descriptor ‘cognitive challenge’. All the syllabus documents are underpinned by a set of 21st century skills (QCAA, 2017b), based on “national and international research about the skills students need in the 21st century” (p. 1). In the light of this document, it became evident that, rather than identifying creative thinking capabilities, selecting one criterion from each description found in Craft, Cremin, et al. (2008) was identifying critical thinking capabilities. These capabilities may be but are not necessarily indicative of creativity. Therefore, another modification to the process was necessary. For a quality to be recorded in the table, multiple descriptors for any quality needed to be indicated in the language of the syllabus. Again, all previously audited syllabus documents were recoded to ensure that qualities had been identified using a consistent process. Craft (2013) includes two extra attributes in her work on Wise Humanising Creativity: Development and Intentional Action. These were first included in a study by (Craft, Cremin, et al., 2012) and no evidence for these qualities was detected in that study. Additionally, in the data analysis for this study, Development aligned with Imagination and Intentional Action coincided with Self-Determination. Thus, I did not include them in the table as separate qualities but incorporated them in the coding for Imagination and Self-Determination.

The process of creating a reliable instrument to audit the syllabus documents raised questions for me about how creativity was understood within some knowledge systems and what outcomes determined the focus of its inclusion in subject areas. It also highlighted questions for investigation and assisted in framing the questions used in the data collection process. The next section presents the audit for the subject areas included in this study for each learning area.

4.3 Syllabus Audit

Key for Syllabus Audit: Attributes of Wise Humanising Creativity used with little c creativity. (Craft, 2000, 2013; Craft, Cremin, et al., 2008)

PLAY (P): exploring, experimenting, "acting 'as if' (Craft, 2013, p. 128), student-centred learning, problem solving and seeking, necessary to the process of develop public and private skills, e.g., empathy. Involves body, imagination, and senses.

POSING QUESTIONS (PQ): question posing and receiving divergent and convergent thinking, being open to possibilities, curiosity, problem solving and problem seeking, "investigative behaviour" (Craft, 2013, p. 128).

IMAGINATION (IM): imagining, being imaginative, discerning, discerning the quality of ideas, content, tasks, non-conscious level of creative process, thinking "as if" (Craft, 2013, p. 128).

IMMERSION (IMM): supportive learning environments, flow, cognitive challenge, holistic engagement with cognitive and sensory knowing, includes Development (Craft, 2013, p. 128).

INNOVATION (INN): connections between ideas, adaption using own way, knowledge and traditions of a domain, transformational process of 'what is' to 'what might be' (Craft, 2013, p. 128).

RISK TAKING (RT): independence, risks, stepping out of comfort zone, becoming comfortable with ambiguity, includes Intentional Action (Craft, 2013, p. 128).

SELF-DETERMINATION (SD): "self-directed or self- chosen actions" (Craft, 2013, p. 128). Shaping self. Includes 'journeys of becoming' (Chappell, 2008; Chappell et al., 2012).

PERSONAL ATTRIBUTES (PA): personal capacities including resilience, intrinsic motivation, and persistence. Social skills such as collaboration and teamwork.

WISE CREATIVITY (WC): development of empathy and respect for diverse values and viewpoints, shaping ‘good’ creativity (Craft, 2008), developing stewardship for creativity outcomes beneficial for ‘the common good’ (Craft, 2008).

AFFECTIVE LEARNING (AL): sensory or aesthetic learning. Includes intuition, emotions, spiritual level of creative process.

Subject areas	**Wise Humanising Creativity (Craft, 2000, 2013; Craft, Cremin, et al., 2008)**										**Comments**
	Knowledge and skills							Personal attributes and aesthetic experiential learning			
	Play	Posing questions	Imagination	Immersion	Innovation	Risk Taking	Self Determination	Personal attributes	Wise creativity	Aesthetic learning	
English											
English General											
Course Overview		✓	✓		✓		✓	✓	✓	✓	Intrinsic motivation inferred. All qualities possible but not inevitable. PQ, IM, INN, SD, PA, WC (empathy), AL.

Units of work		✓	✓			✓	✓	✓	✓	✓	PQ: Reflection only on feedback, no personal reflection. IM, RT, SD, PA, WC, AL: creation of imaginative texts.
Assessment		✓	✓		✓	✓	✓	✓	✓	✓	PA, WC: empathy, AL through aesthetic devices. PQ, IM, INN, RT, SD: adapting one text type to another. IM: discerning quality of ideas.

Health and Physical Education											
Health											
Course Overview	✓	✓	✓			✓	✓	✓	✓	✓	P, PQ, IM, RT, SD, PA, WC, AL. (QCAA, 2018g, p. 1). "develop the physical, intellectual, social, emotional and spiritual capacities… to create lifelong health, learning and active citizenship." "resilience is a personal health resource". "role of peers and families". "respectful relationships beyond school". Course will highlight… "empathic approaches to bring about change." "role of community". "health agenda… future focussed… develop 21st century skills empowering

											students to be critical and creative thinkers, with strong communication skills and collaboration skills equipped with a range of personal, social and ICT skills." This syllabus is aimed at encouraging human flourishing on individual and community levels.
Units of work	✓	✓	✓	✓	✓		✓	✓	✓	✓	P, PQ, IM, IMM, INN, SD, PA, WC, AL: Uses PERMA framework (Seligman, 2011) to bring about change to thrive. Methodological approach to delivering unit AIM – science based. Units use inquiry based approach.
Assessment		✓	✓	✓	✓	✓	✓	✓	✓	✓	IA 1-PQ, IM, IMM, INN, RT, SD, PA, WC, AL (QCAA, 2018g, p. 48). Requirement for students to interact with others to bring about social change.

Physical Education											
Course Overview	✓	✓		✓	✓		✓	✓	✓	✓	P, PQ, IMM, INN, SD, PA, WC, AL. (QCAA, 2018k, p. 1) "… enable students to explore and enhance their own and others' physical activity in diverse and changing contexts". Components to be developed: "personal, social and community health". "movement and physical activity". "Arnold's (1979, 1985, 1988) seminal work provides basis for learning in three dimension about, through and in movement contexts". Suggests embodied play: "Students learn experientially through three phases of an inquiry approach".

											"Through their purposeful and authentic experiences, students gather, analyse and synthesise data to devise strategies to optimise engagement and performance." "PE fosters values and knowledge in and across disciplines and builds students' capacity to be self-directed… lifelong learners". "developing ethical and moral understandings when investigating performance".
Units of work	✓	✓				✓	✓	✓	✓		P, PQ, RT, SD, PA, WC. explores issues of psychology and equity. Explore barriers and enablers. WC, PA ethics and integrity and tactical systems.
Assessment		✓	✓		✓		✓	✓	✓		IA 1: PQ, IM, INN, SD, (QCAA, 2018k, p. 48) project folio or Investigation.

											IA 2: PA, PQ, INN, WC. Report research ethical dilemma. IA 3: PQ, IM, INN (QCAA, 2018k, p. 58) multimodal presentation.

Humanities and Social Sciences											
Business											
Course Overview	✓	✓			✓		✓	✓	✓		P, PQ, INN, SD. (QCAA, 2019a, p. 1). "…as a dynamic and evolving discipline, it is responsive to environmental changes". "Business is relevant in a rapidly changing… innovation-driven world". "students investigate the business life cycle… developing skills in examining business data…". "integrates an inquiry approach with authentic case studies". "students become critical observers of business practices…investigating business situations".

											"use analytical tools to …analyse, interpret and synthesise business data … students evaluate strategies…". SD, WC, PA: "fosters…success while being mindful of social and ethical values and responsibilities". "opportunities to develop interpersonal and leadership skills through individual and collaborative activities". "develops students' confidence and capacity to participate… in a global workforce".
Units of Work	✓	✓	✓	✓	✓	✓	✓	✓	✓		P, PQ, IM, IMM, INN, RT, SD, PA, WC Exploring fundamental business concepts, using strategic tools, e.g., SWOT analysis, determining stakeholder satisfaction, examining and evaluating authentic business models, and

											communicate meaning to suit audience and purpose. P, PQ, INN, PA WC. Exploring the growth stages of the business life cycle, interpreting the implications of establishing a business, strategies to establish a business, evaluation of effectiveness, efficiency, and stakeholder satisfaction. P, PQ, INN, SD, PA, WC. Exploring practices used by mature businesses. Investigate diversification strategies for global markets and competitive advantage, efficiency, and stakeholder satisfaction. Students propose recommendations for business strategies. P, PQ, IM, INN, RT, SD, PA, WC Investigates the challenges for business post-maturity stage in

											business lifecycle, leadership and management skills for repositioning or transforming a business, evaluation of effectiveness, and stakeholder satisfaction.
Assessment	✓	✓	✓	✓	✓	✓	✓	✓	✓		IA1: examination of business fundamentals (QCAA, 2019a, p. 33). P, PQ, IM, INN, SD, PA, WC. IA2: a business report (QCAA, 2019a, p. 39). P, PQ, IM, IMM, INN, RT, PA, WC. IA3: extended response feasibility report and an examination. (QCAA, 2019a, p. 49). P, PQ, INN.
Modern History											
Course Overview		✓	✓		✓		✓	✓	✓		(QCAA, 2018i, p. 1) WC: "empathise with others making meaningful connections between past, present and possible futures."

											INN: organisation around the four forces that shape world: ideas, movements, national and international experiences. PQ: inquiry model “critically literate citizens”. (QCAA, 2018i, p. 2) Pathways: PQ, IM, PA, WC, PA: “when they need to understand situations, place them in perspective, identify causes and consequences, acknowledge viewpoints of others, develop personal values, make judgements and reflect on their decisions”. (QCAA, 2018i, p. 3) PQ, INN, IM, SD inquiry based learning: initiated by problems and questions, builds student knowledge, active approach where student is central. “Students gain mastery, confidence and independence”.

Units of work		✓	✓		✓		✓	✓	✓		U1: PQ, IM, INN, SD, PA, WC: assumptions, beliefs, views, opinions of significance.
Assessment		✓			✓		✓	✓	✓		IA 1: PQ, INN, SD, PA, WC: Examination historical stimulus and investigation of one topic.

Languages											
Japanese											
Course Overview	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	(QCAA, 2019c, p. 1) P, PA: "…language… to achieve personal communicative needs… to express, negotiate, interpret and understand the world around them". P, PQ, IM, IMN, INN, RT, SD, PA, WC, AL: "Students do not simply learn a language – they participate in a range of interactions in which they exchange meaning and become active participants in understanding and constructing written, spoken and visual texts". SD, PA, WC: "fosters intercultural understanding". INN: Learning a range of text types, "the students rearrange their thinking to accommodate other linguistic and

											intercultural knowledge and conventions". P, PQ: "… are the skills of critical and creative thinking, intellectual flexibility, problem-solving". SD: "additional language acquisition must position students at the centre of their own learning. When students communicate their own aspirations, values, opinions, ideas and relationships, personalisation of each student's learning creates a stronger connection with the language. Activities and tasks are developed to fit within the student's life experiences". P, PQ, IM, IMN, INN, SD, PA, WC, AL: "Additional language acquisition contributes to and enriches intellectual, educational, linguistic, metacognitive, personal, social and cultural development".

											SD, PA: "… approaches to learning…incorporating … self-management".
Units of work	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	P, PQ, IM, IMM, INN, RT, SD, PA, WC, AL: Japanese-speaking communities, schools, homes and peer-group contexts. Understanding the world. Values and attitudes to Japanese culture. Diverse cultural values. Student's place in society. How they retain a sense of connectedness in society. How a sense of identity is linked or challenged by their place in society. P, PQ, IM, IMM, SD: end of school celebrations and planning for future and comparing it with Japanese student expectations.

Assessment		✓	✓	✓	✓		✓	✓	✓	✓	IA1: exam roles and relationships (QCAA, 2019c, p. 35). PQ, IM, IMM, INN, SD, PA, WC. IA2: Exam: Connecting with peers as above (QCAA, 2019c, p. 39). PQ, IM, IMM, INN, SD, PA, WC. IA3: extended response with multimodal and stimulus response and open-ended response to teacher questions in conversation (QCAA, 2019c, p. 50). PQ, IM, IMM, INN, SD, PA, AL External exam: response unseen (QCAA, 2019c, p. 57). stimulus, texts, questions, scenarios, problems. P, PQ, IM, IMN, INN, SD, PA, WC.

Mathematics											
General Mathematics											
Course Overview		✓		✓	✓		✓	✓	✓		PQ, IMM, INN, SD, PA, WC. (QCAA, 2018f, p. 1) "Mathematics is creative, promotes curiosity requires initiative." "Students will develop their ability to collaborate and their sense of personal and social responsibility." "demonstrate initiative when facing a challenge". "practicing essential maths routines…investigating scenarios, modelling the real word… solving problems." "when facts and concepts come to mind readily, students are able to make more complex use of knowledge to successfully formulate, represent and problem solve."

											"students will learn to ask appropriate questions, map future pathways, reason complex solutions." "they will develop the ability understand, analyse and take action regarding social issues in the world." "with a solid foundation… students can be asked to apply higher level cognitive processes in more complex and unfamiliar situations".
Units of work		✓			✓				✓		PQ, INN, WC. Units of work require mathematical procedure. However, the application of these procedures to real world situations includes the possibility of creative problem solving and innovation and empathy. E.g., budgeting for low income households to improve their wellbeing.

Assessment		✓	✓		✓	✓	✓	✓			PQ, IM, INN, RT, SD, PA: Modelling and problem solving. Discerning the quality of ideas and tasks. Posing and responding to questions. Divergent and convergent thinking. Topic 4.6 (QCAA, 2018f, p. 28) offers the opportunity for group work – learning together, problem solving, imagination.
Mathematical Methods											
Course Overview		✓	✓	✓	✓	✓	✓	✓	✓		PQ, IM, IMM, INN, RT, SD, PA, WC (QCAA, 2018h, p. 1). "Mathematics is creative, promotes curiosity requires initiative". "Students will develop their ability to collaborate and their sense of personal and social responsibility".

											"Demonstrate initiative when facing a challenge". "statistics necessary for describing and analysing variation and uncertainty". "Statistics and calculus the basis for developing effective models of the world and solving complex maths problems". (adaption) "Students undertaking Mathematical Methods will see connections between mathematics and other areas of the curriculum to apply their mathematics skills to real world problems".
Units of work											Seem to be purely mathematical method.
Assessment		✓			✓		✓				IA1 (QCAA, 2018h, p. 30): PQ, INN, SD: opportunity for group work with a real world scenario.

Specialist Mathematics											
Course Overview		✓		✓	✓	✓	✓	✓	✓		PQ, IMM, INN, RT, SD, PA, WC (QCAA, 2018l, p. 1). "Mathematics is creative, promotes curiosity requires initiative". "Students will develop their ability to collaborate and their sense of personal and social responsibility". "Demonstrate initiative when facing a challenge".
Units of work		✓									PQ- solving problems with unknown angles.
Assessment		✓	✓		✓		✓	✓			IA1: (QCAA, 2018l, p. 31) PQ, IM, INN, SD, PA Applying mathematics to a real world context. Opportunity for group work, although work must produce individual, unique responses. E.g., best Monopoly squares to buy.

Sciences											
Biology											
Course Overview	✓	✓	✓	✓	✓		✓	✓	✓	✓	P, PQ, IM, IMM, INN, SD, PA, WC, AL (QCAA, 2018a, p. 1). "uses creative and critical reasoning in order to acquire better and more reliable knowledge". "collaborative learning building on previous knowledge" Indications this is for the wellbeing of society". "students will learn skills required for scientific investigation of questions". "responsible citizenship" "Develop a curiosity about life". "a respect for living things and the environment" "understand the flow of matter and energy between systems,

											biological models and concepts.”
Units of work	✓	✓		✓	✓		✓	✓			P, PQ, IMM, INN, SD, PA: re: animals, care of participants, informed consent, anonymity, and confidentiality. “appreciate science as a human endeavour – the nature and development of science” (QCAA, 2018a, p. 17). “through the investigation of these contexts students may explore the ethical considerations to apply to living organisms in this research”. “Collaborative experimental work helps students develop communication, interaction, character and management skills”.
Assessment											“It is the prerogative of the teacher to decide how science inquiry skills are developed” (QCAA, 2018a, p. 11).

											(opportunity to teach for creativity).
Chemistry											
Course Overview	✓	✓	✓		✓			✓	✓		P, PQ, IM, INN, PA, WC (QCAA, 2018b, p. 1). "collaborative process, whereby new knowledge is gained, essential for the cooperative advancement of science, technology, health and society in 21st C". "applying aspects of knowledge and skills to understand scientific discipline and how it may impact society". "appreciate science as a human endeavour – the nature and development of science". "Science can be used to develop and evaluate projects economic, social and environmental impacts to design action for sustainability". "international collaboration required… when solving big

											problems in Asia Pacific region".
Units of work		✓	✓	✓	✓		✓				PQ, IM, IMN, INN, SD. "Students conduct investigations to develop their understanding of …properties and materials and structure and properties" (QCAA, 2018b, p. 18). "Collaborative experimental work also develops student's communication, interaction and self-management skills" (QCAA, 2018b, p. 18).
Assessment		✓	✓		✓						IA1 (QCAA, 2018b, p. 47): PQ, IM, INN. Research investigation: connecting ideas, adaption. Divergent and convergent thinking, curiosity. Discerning quality of ideas.

Technologies											
Design											
Course Overview	✓	✓	✓	✓	✓	✓	✓	✓	✓		P, PQ, IM, IMM, INN, RT, SD, PA, WC (QCAA, 2019b, p. 1). "Technologies have been an integral part of society for as long as humans have had the desire to create solutions to improve their own and others' quality of life. Technologies have an impact on people and societies by transforming, restoring and sustaining the world in which we live". "Australia needs enterprising and innovative individuals with the ability to make discerning decisions concerning the development use and impact of technologies". "… these individuals need to work independently and cooperatively to solve complex, open-ended problems".

											"Design… focuses on the application of design thinking to envisage creative products, services and environments in response to human needs, wants and opportunities". "Designing is a complex form of problem solving that uses divergent and convergent thinking strategies that can be practised and improved". "Designers are separated from the constraints of production processes to allow them to appreciate and exploit innovative ideas". "students will… experiencing design…consider the role of the client and the influence of economic, social, cultural issues. They will use a collaborative design approach". "… context of human-centred design…designing with empathy…for the needs and

											wants of an identified person or group". "Students will…experience designing in the context of sustainable design. They will use redesigning… to design for an opportunity". "The teaching and learning approach…[is]…grounded in problem-based learning framework". "Students communicate design proposals to suit different audiences".
Units of work	✓	✓	✓	✓	✓		✓	✓	✓	✓	P, PQ, IM, IMM, INN, SD, PA, WC. Unit 1: "Experiencing design…consider the role of the client and the influence of economic, social cultural issues. They will use a collaborative design approach" (QCAA, 2019b, p. 1). Unit 2: "students will … experience designing … considering the role of the client

											and the influence of economic, social and cultural issues. Unit 3: "… context of human centred design…designing with empathy…for the needs and wants of an identified person or group" (QCAA, 2019b, p. 1). Unit 4: "Students will… experience designing in the context of sustainable design. They will use redesigning… to design for an opportunity" (QCAA, 2019b, p. 1).

Assessment	✓	✓			✓				✓		IA1: Exam. PQ, INN: “assesses the application of a number of cognitions to a design problem” (QCAA, 2019b, p. 34). IA2 and IA3: Project: P, PQ, INN, WC: “design project…requires the application of cognitive…and creative skills” (QCAA, 2019b, pp. 37, 46). “explore and develop a response to a stakeholder’s need or want” (QCAA, 2019b, pp. 37,46).

The Arts											
Drama											
Course Overview	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	P, PQ, IM, IMM, INN, RT, SD, PA, WC, AL (QCAA, 2018c, p. 1). "interrogates the human experience by investigating, communicating and embodying stories, experiences, emotions and ideas". "allows students to look at the past with curiosity". "explore inherited traditions of artistry… inform their practice and shape their world". "involves students in imaginative meaning-making processes". "the range of purposes and contexts and audiences…allow students to… experience, reflect… understand different

											perspectives… and the world in which they live". "provoking alternative ways of seeing, thinking and doing". "know the world collectively and individually". "know the world in our own way". "innovation and creative thinking are at the forefront of this subject".
Units of work	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Unit 1 P, PQ, IM, IMM, INN, SD, PA, WC, AL (QCAA, 2018c, p. 26). "tell stories and share understandings of human experience." "students work independently… and collaboratively". "manipulate and shape dramatic languages".

											“make and respond to dramatic works”. Unit 2: P, PQ, IM, IMM, INN, RT, SD, PA, WC, AL (QCAA, 2018c, p. 30). “reflect on lived experience”. “informing and challenging audiences, understanding and empathising with … others’ experiences”. “documenting and celebrating what it means to be human”. Unit 3: P, PQ, IM, IMM, INN, RT, SD, PA, WC. (QCAA, 2018c, p. 34). “explore how drama can be used to challenge”. “investigate dramatic styles”. “that question their world and advocate change”.

Assessment	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	IA1: P, PQ, IM, IMM, INN, RT, SD, PA WC, AL (QCAA, 2018c, p. 37). "demonstration of cognitive, creative and expressive skills". "Interpret purpose and context to …communicate dramatic meaning". IA2: PQ, IM, IMM, INN, SD, PA, AL (QCAA, 2018c, p. 40). Task requires application of "problem solving process requiring cognitive, technical and creative skills and theoretical understandings". "document the iterative process … to develop a solution to a dramatic stimulus".
Music											
Course Overview	✓	✓	✓	✓	✓		✓	✓	✓	✓	P, PQ, IM, IMM, INN, SD, PA, WC, AL (QCAA, 2018j, p. 1).

											“provoking alternative ways of seeing, thinking and doing”. “Make connections and new meaning”. “Work collaboratively and independently”. “Reveal a sense of who we are and who we might become”. “Empathy through cultural heritage and knowledge of other cultures”. “Personal expression – of intellect, imagination and emotion”. “Students realise music ideas through the demonstration and interpretation of music elements and concepts to convey meaning and/or emotion to an audience”. “In an age of change, Music has the means to prepare students for a future of unimagined possibilities”.

											Innovation knowledge of ASTI (Aboriginal and Torres Strait Islander) knowledge and culture.
Units of work	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	P, PQ, IM, IMM, INN, RT, SD, PA, WC, AL. Unit 3 (QCAA, 2018j, p. 28) 'make and respond'. Play with elements. Flow, cognitive challenge, knowledge of styles and genres adaption, connection of ideas, developing musicianship. Experiencing and playing musical elements and compositions. Curiosity about musical elements and how they work and how they can be combined in composition. Explore own musical identity.

											Also developing cultural, political, social, and personal capacity through identity. Using and challenging music traditions to create new meanings.
Assessment	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	IA 1 (QCAA, 2018j, p. 35) Composition and performance. All qualities present. IA 2 and IA 3 (QCAA, 2018j, pp. 39,46) integrated project – all qualities.
Film, Television and New Media											
Course Overview	✓	✓		✓	✓		✓	✓	✓	✓	(QCAA, 2018e, p. 1) SD, INN, PQ "fundamental to self-expression and understanding". "Education and cultural exchange" Understanding divergent points of view.
Units of work	✓	✓	✓		✓		✓	✓			P, PQ, IM, INN, SD, PA

											Unit 1, 2 and 3 (QCAA, 2018e, pp. 23,26, 29). Describes processes of adaption – using symbols etc to create meaning about the world. Skill development by experimenting with medium. Describes divergent and convergent thinking. Describes discerning the quality of ideas. Describes students developing responsibility for own learning.
Assessment	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	IA 1 (QCAA, 2018e, p. 32) case study production or analysis of media product. Involves all qualities. IA 2 (QCAA, 2018e, p. 35) Multi-platform project. All qualities present. IA 3 (QCAA, 2018e, p. 42) Stylistic Project. All qualities present.

4.4 Analysis of the Audit

Analysing the syllabus document audit for creativity and its qualities highlights some interesting inclusions and absences within learning areas. It also provokes questions about how terminology that may be connected to creativity is used in each subject area syllabus document. As previously noted, the audit did not include the entire suite of 77 syllabus documents, but a selection of fifteen General syllabus documents across each of the eight learning areas designated by the QCAA. As indicated previously, it is difficult to find a consistent definition for some creative qualities to apply in the analysis across learning areas. Understanding the nature of some of the listed qualities within each learning area needs to be addressed in the study's data collection process. It is also important to consider senior school teachers' understanding and application of creativity across the suite of subject areas they are teaching, in order to address the research questions. These understandings and applications impact on senior school teachers' ability to include them in their curriculum planning for the empowerment of senior students with the knowledge, skills, and attributes identified by education (QCAA, 2017b), government (ACARA, 2016b), and industry (Foundation for Young Australians, 2016) as necessary for success in the 21st century.

Another problem arises in the application of terms across different syllabus documents. Innovation is a term that is used in every syllabus audited. However, it is clear from the context within each syllabus that it indicates different understandings. In The Arts, English, and Humanities and Social Sciences, innovation is synonymous with new. It is used to indicate novel ideas, solutions, or products created by the students. However, in STEM subjects, innovation denotes the product or outcome of creativity as a process. The definition aligns with understandings of innovation, stemming from creative industries and an economically driven agenda (Harris, 2016; Wijngaarden et al., 2019). A third interpretation of innovation is apparent in subject syllabus documents which declare a grounding in human wellbeing, such as Health. In this syllabus, innovation is synonymous with an individual's and community's ability to adapt. The range of understandings of this term indicate that there is slippage in how terminology is applied across the suite of syllabus documents. Within an educational context, the lack of a common definition of creativity and its qualities is problematic for educators' consistency in implementing new programs.

It is also important to highlight the purpose of the syllabus documents. These QCAA documents provide guidelines for Queensland school administrators and teachers pertaining to the knowledge, skills, and attributes to develop in senior school students. They are not a framework for pedagogical delivery. The focus, therefore, is *what* is taught, not *how* it is taught. When investigating the documents for evidence of creativity in the curriculum, it is only possible to highlight what is explicitly mandated for teachers to deliver. At this stage of the study, it is not possible to account for creative knowledge, skills, or attributes that may be imparted by teachers' pedagogical approaches to the curriculum. Some evidence of the impact of educators' classroom approach did come to light during the data collection phase of this study. The next section analyses the audit and highlights where potential points of interest exist for the data collection phase of the study.

4.4.1 Analysis by learning area and subject.

The analysis of the syllabus audit is organised according to the learning areas designated by the QCAA. These are English, Health and Physical Education, Humanities and Social Sciences, Languages, Mathematics, Sciences, Technologies, and The Arts. In the audit, English includes the subject General English. Health and Physical Education includes both Health and Physical Education. This is followed by Humanities and Social Sciences which includes Business and Modern History. Languages focuses on Japanese. The learning area of Mathematics includes three subjects: General Mathematics, Mathematical Methods, and Specialist Mathematics. It is followed by Sciences, specifically Biology and Chemistry. The Technology learning area included Design. The final learning area, The Arts, includes the subject areas of Drama, Music, and Film, Television and New Media.

The 2019 QCAA syllabus suite prepares senior school students for life, with a strong focus on individual and community wellbeing. This is particularly interesting when juxtaposed against Craft's (2000; Craft, Cremin, et al., 2008) little c approach to creativity underpinned by Possibility Thinking in the Wise Humanising Creativity framework (Craft, 2013), which aspires to empower young people to shape every part of their life journey. In the context of 21st century education, Craft's development of Wise Humanising Creativity (2013) fosters Possibility Thinking attributes in agentic young people who are ethical, empathic, and pursuing novelty

for their own growth and the betterment of others. All fifteen syllabus documents audited contribute in different ways to achieving this vision.

4.4.1.1 English.

The Rationale of the General English (QCAA, 2018d) syllabus places emphasis on the learning areas ability "to provide opportunities for students to be empowered as … creative and critical language users" (p.1). The 21st century skills (QCAA, 2018d, pp. 7,8) which underpin the syllabus documents, differentiate between the convergent thinking skills of critical thinking and the divergent thinking skills of creative thinking. The unit descriptions require students to "investigate" and "analyse" texts (QCAA, 2018d, p. 22) which align with the critical thinking skills listed in the 21st century skills in the document. The Unit Outlines and the Assessment Tasks also require students to create "transformations or adaptions" of texts (QCAA, 2018d, p. 23) and Assessment Tasks highlight creating texts that "create representations of concepts, perspectives" (QCAA, 2018d, p. 46), aligned with creative thinking. Both convergent and divergent thinking are key components of question posing, a key driver of Possibility Thinking (Chappell et al., 2008). In the unit descriptions, critical and creative thinking are coupled with developing personal attributes, such as resilience and wise creativity, which includes ethics and developing an appreciation for the perspectives of other cultures and world views. Developing empathy and an ethical perspective are key components of Wise Humanising Creativity (Craft, 2013).

Despite its strong emphasis on creative thinking and question posing, there is little emphasis on collaborative learning. The 21st century skills (QCAA, 2017b) embrace the importance of collaborative learning and the individual's ability to work with others pursuing novel outcomes. The General English syllabus's Rationale (QCAA, 2018d) states that "all senior secondary English subjects aim to develop students' critical and creative thinking, both independently and collaboratively" (p. 9). Yet, the units of work do not require students to work collaboratively, only independently. The syllabus document repeatedly aspires to prepare students for success in a 21st century world, developing their sense of "empathy for others" (p.1) and an "appreciation for different perspectives of others" (p.1). Yet working with others to develop these attributes is not mandated.

Collaboration also provides opportunities for play and immersion (Craft & Chappell, 2016). These processes provide students with deeper engagement with cognitive challenges and aesthetic techniques, leading to a love and enjoyment of language, as outlined in the syllabus Rationale (QCAA, 2018d). This aspect of literacy is as important as cognitive skills for preparing young individuals for a complex and rapidly changing world.

4.4.1.2 Health and Physical Education

The Health and Physical Education syllabus documents foreground human flourishing as the objective in the Rationales, Units of Work, and Assessment Tasks of both courses of study. As with previous syllabus documents, the chosen approach is inquiry based learning. The Health syllabus also explicitly integrates into its Rationale, Units of Work, and Assessment Tasks the PERMA model developed in the field of positive Psychology by Seligman (2011). The acronym symbolises the elements Seligman identified as necessary for human wellbeing. These include Positive emotion or a sense of happiness, Engagement or flow, as it was coined by Csikszentmihalyi (1996); Relationships with others; Meaningful work to do; and a sense of Achievement. This model contains qualities that are important to individuals who engage with a creative approach to life. Possibility Thinking (Craft, 2000; Craft, Cremin, et al., 2008) includes immersion as an important component of deep cognitive challenge in a learner-centred environment. This engenders a sense of flow from which the learner derives a love of learning and intrinsic motivation (Csikszentmihalyi, 1996). The Health syllabus (QCAA, 2018g) creates authentic learning experiences by framing the units of work around real life issues. It asks students to develop strength-based solutions for healthy living for themselves and the community. The connectedness and human wellbeing at the heart of this syllabus align with the humane intentions of Wise Humanising Creativity and developing agentic citizens at the centre of Possibility Thinking.

Physical Education's General Senior Syllabus (QCAA, 2018k) also pivots on the development of solutions 'for the greater good' by engaging students with the development of movement plans in a range of contexts. Physical Education, founded on the work of Arnold (1979, 1985, 1988), explores the interdependence of the three dimensions of movement: in, though, and about. Students work with Arnold's theory in a range of movement contexts enhancing their understanding of the fundamental

concepts and principles of enhancing movement performance such as biomechanics, psychological factors, and barriers. Learning with others, using an inquiry learning approach, develops a sense of connectedness for students with each other, and with authentic, real life learning. The sense of individual self-awareness and connectedness with the world central to this learning area is similarly developed within the Language syllabus documents.

4.4.1.3 Humanities and Social Sciences

Humanities and Social Sciences is unique among the learning areas in the organisation of the syllabus Rationales. In the other seven learning areas, subject syllabus Rationales begin with a statement of aspirations for the learning area as a whole, followed by more detailed information about student development in the subject area. In the Humanities and Social Sciences syllabus documents, the aspirational statement for the learning area has been omitted. Henderson and Bourke (2016) note while, "knowledge and understanding and thinking skills… are common across all syllabuses, they are not necessarily described in the same way" (p. 8). The Rationale in each syllabus document only highlights the aims and objectives for each subject. However, similarities exist in the student learning outcomes the subjects in this learning area pursue through creativity, empowering students to engage with dynamic societal change.

Business and Modern History cultivate individuals who can connect and interact meaningfully with others on an individual, community, and global level, creating personalised and sustainable possible futures. Business is one of the new subjects introduced with this syllabus suite. It replaces two subjects: Business Organisation and Management and Business, Communication and Technologies. The Business syllabus (QCAA, 2019a) focuses on using business skills to empower students to successfully respond to a world that is dynamically changing economically, environmentally, technologically, and socially. Within a business context, students are equipped with the skills and attributes to "contribute meaningfully to society" (p.1) in a range of contexts. Using inquiry based learning, students are encouraged to "investigate the business life cycle" and "become critical observers of business practices" (p. 1), innovating ways to enhance the outcomes for particular businesses. Students are also encouraged to develop personal, social, and ethical attributes to

become “socially and ethically responsible members of the business community” (p.1), as well as critically literate citizens.

The Modern History syllabus (QCAA, 2018i) highlights students’ ethical connectedness with others by learning about other cultures and historical events. In the Rationale, students are placed at the centre of their own learning and encouraged to “engage with inquiry to become critically literate citizens” (QCAA, 2018i, p. 1.) who exercise self-determination as they “gain mastery, confidence and independence” (QCAA, 2018i, p. 11) across a range of knowledge and skills. The syllabus (QCAA, 2018i) encourages students to develop the imagination, personal attributes, ethics, and ability to pose questions in order to “inquire about situations, place them in perspective, acknowledge the viewpoints of others, develop personal values, make judgements and reflect on decisions” (p. 2), all critical components of a creative approach to life.

The Humanities and Social Sciences place a strong emphasis on empowering individuals to transform ‘what is’ to ‘what might be’ (Craft & Chappell, 2016), empowering them through inquiry learning to create novel solutions for the world’s ‘macro problems’ (Beghetto, 2016). Both syllabus documents accentuate harnessing students’ ability to shape themselves and engage with others in collective action and democratic participation for the wellbeing of themselves, others, and the environment.

4.4.1.4 Languages

Languages adopts a uniform approach to developing student self-awareness and their connectedness with the world. The Japanese (QCAA, 2019c) syllabus document embraces the development of students’ self-determination through ‘becoming’ (Chappell et al., 2012). Initially, the focus in Units of Work and Assessment Tasks is the student’s own culture and its impact in shaping their ideas and aspirations. Interconnectedness with the community and the wider world is developed in following units using immersion in cultural experiences to explore diverse ways of life and values. The learning area’s Rationale aspires to use collaborative learning to “enrich intellectual, linguistic, metacognitive, personal, social and cultural development” (QCAA, 2019c, p. 1). The objective embraces creativity to develop agentic young people who meaningfully impact the world around them.

4.4.1.5 Mathematics

Perhaps unexpectedly, the Mathematics syllabuses all declare "Mathematics is creative, promotes curiosity… promotes initiative" (QCAA, 2018f, p. 1), qualities embraced to develop agentic young people. The documents' Rationales also aspire to "develop the ability to collaborate and students' sense of personal and social responsibility" (QCAA, 2018h, p. 1), valuing the social skills and novel outcomes for the wellbeing of all, as highlighted In Wise Humanising Creativity (Craft, 2013). In all three syllabus documents, the development of question posing using real world issues is central to the Rationale, Units of Work, and Assessment Tasks. The General Mathematics syllabus is designed for students to "develop the ability to understand, analyse and take action regarding social issues in the world" (QCAA, 2018f, p. 1). The 2019 Mathematical Methods General Senior Syllabus (QCAA, 2018h) uses mathematics skills, in connection with other parts of the curriculum, to solve real world problems. In the units of work, students link ideas, pose questions, and work in a range of modes to seek novel solutions for the wellbeing of everyone. Specialist Mathematics particularly highlights in the Rationale its use of collaborative activities to develop personal qualities in individuals, such as "resilience and initiative when facing a problem." (QCAA, 2018l, p. 1).

4.4.1.6 Sciences

In their Rationale, the Science syllabus documents are underpinned by the benefits of "the collaborative process whereby new knowledge is gained essential to the cooperative advancement of science, technology, health and society in the 21st century" (QCAA, 2018a, p. 1). Biology and Chemistry use collaboration differently to achieve this learning outcome. Biology champions collaboration to develop a student's "communication, interaction, character and management skills" (QCAA, 2018a, p. 20). In Chemistry, there is no mention of character. The term 'character' is drawn from the 21st century skills framework (QCAA, 2017b) of Personal and Social Skills considered desirable for young people to develop. Within the syllabus documents, character is defined as "resilience, mindfulness, open and fair-mindedness, self-awareness" (QCAA, 2018b, p. 9). The term 'mindfulness' seems opaque regarding specifically which personal attributes the collaborative work in Biology will be developing. There is no guarantee all teachers will interpret the term precisely the same way. Using definitive terms such as focus, tolerance, or observant

might give teachers a clearer understanding of the qualities they are intending to develop in their students.

The Sciences syllabus documents are also underpinned by the Science as Human Endeavour (SHE) framework. The framework promotes student understanding of "nature and development of Science" and its "use and influence on society" (QCAA, 2018b, p. 13). The SHE framework promotes shaping students who can communicate clearly and work cohesively with a team, locally and internationally, to develop innovative and sustainable creative outcomes for the world. SHE aspires for senior school Science students to develop an understanding of the impact of ethics, economic and technological change on scientific advancements, and the opportunities for enhancing the lives of individuals and the wider community through partnerships with other knowledge domains such as Geography and Information Technology. The SHE framework is not assessed, though teachers are encouraged to use it in the choice of topics for Units of Work and when initiating research investigations.

4.4.1.7 Technologies

Societal wellbeing also underpins the Technologies syllabus documents. The learning area goal is for students to "create solutions to improve the quality of their own and other people's lives" (QCAA, 2019b, p. 1), focussing on wellbeing by "transforming, restoring, sustaining the world in which we live" (QCAA, 2019b, p. 1).

Like Business, Design is a new subject included in this syllabus suite. Design replaces two subjects: Graphics and Industrial Technologies Studies. Through Design, the Technologies learning area uses "the problem-based learning framework… to solve complex, open-ended problems… using convergent and divergent thinking… and exploit innovative ideas" (QCAA, 2019b, p. 1). The Design syllabus highlights a distinctly human-centred focus for innovation and aspires to equip students with critical and creative thinking skills and imagination to innovate creative solutions for "human needs, wants and opportunities" (QCAA, 2019b, p. 1). In the Units of Work, the progression of curriculum units empowers students to work independently and collaboratively with a diverse range of clients, addressing a variety of economic, social, and cultural issues. Later units specifically

focus on human-centred and sustainable design, engaging students as empathetic problem solvers. Design aspires to foster intrinsically motivated students, developing the resilience and persistence required in the iterative design process, experimenting and risk taking in pursuit of the best solutions.

4.4.1.8 The Arts

The Arts continues the focus on developing agentic young people through creativity and a Possibility Thinking (Craft, Cremin, et al., 2008) approach. The subjects within this learning area use inquiry learning to "provoke alternative ways of seeing, thinking and doing" (QCAA, 2018c, p. 1) and the "personal expression of intellect, imagination and emotion" (p. 1). The Drama General Senior Syllabus Rationale promotes diversity of thinking through the recognition of "multiple ways to understand the world, collectively and as an individual" (p. 1). It promotes self-determination for students, encouraging them to understand that individuals know the world "in our own way" (p.1), which also develops resilience.

The Music syllabus Rationale argues that Music allows students to shape themselves and the world around them by "revealing who we are and who we might become" (QCAA, 2018j, p. 1). It also looks to foster interconnectedness with others by developing "empathy through cultural heritage and knowledge of other cultures" (p. 1) in both independent and collaborative learning experiences. The Music syllabus highlights its uniqueness and the centrality of affective learning, "using sound and silence as a means of personal expression" (p. 1).

The syllabus Rationale for Film, Television and New Media highlights these mediums as fundamental to our "self-expression and understanding of the world" (QCAA, 2018e, p. 1) and "engaging meaningfully in local and global participatory cultures" (p. 1) to "develop a respect for diverse perspectives and a critical awareness of … a diverse range of global contexts" (p. 1). In common with other arts subjects, Film, Television and New Media seeks to develop individuals while they are also shaping the world around them, pursuing novelty in ideas, products, and solutions.

The analysis of the 2019 QCAA General Senior Syllabus documents reveals some interesting approaches to creativity in senior school curriculum in Queensland schools. It provokes further investigation into the teacher experience of planning

curriculum using the QCAA 2019 Senior school syllabus suite and how students are being prepared for a future focussed on their own and others' wellbeing. It also raises further questions for inclusion in the participant data collection of this study about creativity and its qualities.

4.5 Implications for the Study

The process of the syllabus audit raises questions about the nature or context of some of the qualities used to discern creativity, for instance, the nature of play. Research led by Craft, (2000; Craft & Chappell, 2016; Craft, Cremin, et al., 2012) was conducted with early childhood or primary school aged children. In this context, the researchers describe 'play' as an activity occurring with other people. In Craft's (2013) studies involving Wise Humanising Creativity, the cooperative, collaborative, or community context is still integral to the activity of play. However, questions were raised for me about whether senior school students play. Is this an activity that perhaps occurs in collaborative, embodied subjects, such as Drama, but not in methodical subjects, such as Chemistry? Do senior school students 'play' or 'experiment'? Is play denoted differently in Science than in Drama? Hudson (as cited in Craft, 2000) comments that Einstein saw play as an integral part of his scientific process. Is the delineation between play and experimentation based around group and individual activity, rather than knowledge systems? For the purposes of this study, play has been identified as it is defined in Craft's (2000; Craft, Cremin, et al., 2008) studies, as a group process. Using this process, questions are also raised about other descriptors within the framework, such as immersion and innovation. These questions informed the data collection phase of the research.

One further area of interest highlighted by the process of the syllabus audit was my lack of understanding of some learning areas and bias stemming from a background in the arts, specifically Drama, and English. In attempting to audit syllabus documents foreign to my own educational background or experience, such as Chemistry or Design, questions arose as to whether creativity was omitted from these syllabus documents or whether I did not have enough expertise in the subject area to identify it. Would a specialist in these subjects recognise creative qualities that were not apparent to me? In order to maintain consistency in the process of auditing across all documents, I used the same understandings of each quality in each

subject. Questions and gaps in understanding raised here were incorporated into the instruments used to collect data in the field.

The syllabus audit was conducted to ascertain the ways in which creativity is integrated in QCAA 2019 Senior school syllabus documents in arts and non-arts subjects. The audit and the analysis highlighted that all the subject areas included intend to develop students' creativity. All of the elements of creativity identified by Craft (Craft, 2000, 2013; Craft, Cremin, et al., 2008) to recognise Wise Humanising Creativity underpinned by Possibility Thinking are evident across the syllabus documents in various combinations in each learning area. This insight suggests The Arts are not the only area of the curriculum to develop creativity, as many educators have traditionally believed. In fact, regarding the development of creative knowledge, skills, and attributes, the delineation between arts and non-arts subjects is an artificial one. Each subject develops creativity with the framework of knowledge, skills, and attributes of its discipline, equipping learners as agentic individuals with a range of approaches to problem solving and the pursuit of novelty.

An important awareness identified by the audit is the primary objective for developing creativity across of all of the subject area syllabus documents is individual and community wellbeing. Where my previous experience and research would have suggested that arts subjects were the wellspring of a wellbeing focussed approach, the audit clearly dispels this belief. The development of personal attributes, such as resilience, curiosity, and empathy, are integrated into each learning area. Likewise, within the Rationales, Units of Work, and Assessment Tasks of each learning area, students are encouraged to engage with an understanding of a diverse range of people and to design outcomes that will improve the quality of their own lives and those in the local and global community. This makes the Wise Humanising Creativity (Craft, 2013) framework of creativity a perfect fit for this study.

As a result of the audit, the idea that learner-centred classrooms were predominantly the province of The Arts has been reassessed. The audit clearly indicates most learning areas use inquiry based learning and the remainder, such as Technologies, use a problem based learning approach. Both pedagogical approaches empower individuals to be agentic learners who shape the questions they pursue and develop

their own responses to problem solving and tasks. In each case, the expectation is that students will participate in a range of individual, collaborative, and communal tasks that immerse them in creative learning and developing their understanding of themselves and the world around them. The intention is that students will also develop their understanding of creativity itself. Enhancing their knowledge of creativity's elements and processes allows students to apply more effectively Possibility Thinking as a creative approach in their lives.

The study reveals commonalities and differences in the understanding of creativity across the learning areas. The data collection phase highlights how creativity and its attributes operate in practise within each learning area and where slippage in the understanding of terminology still exists. The slippage of terminology is problematic for educators who are grappling with the concept of creativity and how to integrate in their programs and pedagogy, without a common understanding of what it is. These questions helped to shape and inform the data collection tools for the study, in order to address more effectively the study's research question and sub-questions and how senior school teachers integrate creativity in curriculum to empower senior school students for life.

4.6 Conclusion

The Syllabus Audit provides important information for the development of the data collection tools and enhances my understanding of the implications of creative learning in subject and learning areas outside my expertise as an educator. It presents the understandings of creativity in each of the eight learning areas and the priorities for developing creative attributes across the learning areas with respect to knowledge, skills, and personal attributes. The syllabus documents present the aspirations for building senior students' creative capacity and what senior school teachers are required to deliver with respect to curriculum. The Findings (chapter 5) illustrate how senior school teachers delivered creative learning and curriculum under the 2019 Senior school syllabus suite. The next chapter articulates the findings from the participants' questionnaire and interview data in response to the research question and sub-questions. The chapter presents the analysis of the participant data and its connection with the syllabuses' aspirational information for creative learning in each learning area presented in the Syllabus Audit (chapter 4). The Findings present the understandings of creative attributes in each learning area and their

consistency in relation to the understandings presented in the codebook (Appendix 1). The synthesis of the syllabus data and the participant questionnaire and interview data provides a clear picture of the lived experience of the participants as they implemented creative learning and curriculum to enhance student outcomes across all eight learning areas.

5 Findings

5.1 Introduction

The research question for this study investigates how the Wise Humanising Creativity framework (2013) might provide a common understanding of creativity to support its integration by educators using the QCAA 2019 Senior school syllabus suite. This chapter presents the analysis of participant data foregrounding teachers' voices about their understandings of creativity and its integration in curriculum planning with the implementation of the new Senior school syllabus documents. The analysis of the participants' questionnaire (Appendix 2) and interview data (Appendix 3) makes explicit links to the codebook (Appendix 1) and to key ideas that appear in the Literature Review (chapter 2). The thematic analysis of the questionnaire and interview data is presented for the eight learning areas included in the study. For clarity, the questionnaire and interview data are discussed separately under each learning area section. The questionnaire data provides insights into the participants' understandings of creativity within their subject area, the alignment with the QCAA 21st century skills framework (QCAA, 2017b), and any potential grounds for a common definition of creativity across subject areas. The interview data delves into the participants' understandings of creativity in greater depth and explores the teachers' experiences of implementing the General syllabus document for their subject area. The learning areas are presented alphabetically, as they are by the QCAA. They are English, Health and Physical Education, Humanities and Social Sciences, Languages, Mathematics, Sciences, Technologies, and The Arts. Participant responses only pertain to the General (tertiary focussed) syllabus documents in the participant's subject area.

5.2 English

The first analysis in this chapter is of the learning area known as English and the subject area known as General English. For 21st century learners, the General English syllabus aspires to prepare students for a multi-faceted and rapidly changing world in which "complex demands are placed on citizens to be literate… across a range of modes and mediums" (QCAA, 2018d, p. 1). Through creative learning, students are empowered to manipulate language features, such as aesthetic devices and text types, enhancing their ability to communicate effectively with a diverse range of audiences.

This develops adaptable, innovative individuals for the 21st century world. For the English learning area, one participant, Mandy, was recruited. Mandy teaches in an all-girls school in the Independent sector.

5.2.1 Questionnaire Data

Mandy's questionnaire responses reveal her understanding that creativity is essential to success in General English. Mandy states that "creativity is an integral part of our subject. …[it] is vital to success in assessment, as well as being a significant feature of classroom activities and class ethos". The questionnaire presented participants with a list of attributes often associated with creativity, drawn from Craft's (2013) Wise Humanising Creativity. Mandy was asked to identify the qualities she deemed important for student development in her subject area. Mandy chose play, question posing, curiosity, risk taking, innovation and pursuing novel outcomes, affective learning, imagination, ethical motivation or wise creativity, collaboration, resilience, persistence, and intrinsic motivation. Immersion is the only attribute listed on the questionnaire not recognised by this participant. Like Craft (2013), Mandy highlights creative attributes as important for student development in an educational setting, suggesting a shared focus on developing human potential. The creative attributes highlighted by Mandy in this response include question posing and curiosity, innovation, and pursuing novel outcomes. This suggests her intention to use creativity in General English to develop her students' creative capacity for self-determination and problem solving. These understandings of creativity may begin to provide a foundation for a common definition of creativity with other learning areas.

The questionnaire asked participants to provide a definition for a selection of terms associated with creativity including innovation, play, immersive learning, affective learning, and character. Mandy defines innovation as, "the ability to come up with new ideas and ways of understanding. Proposing new solutions and pathways". Mandy's understanding of innovation within an educational context, as new or novel, reflects Craft's (2013) definition of educational innovation and the novelty of ideas, processes, and products within the Possibility Thinking approach, underlying Wise Humanising Creativity and included in the codebook for this analysis (Appendix 1). Valuing novelty as part of student's creative capacity promotes the development of their agency as lifelong learners who transform problems into solutions. The commonality of understanding between Craft and Mandy suggests less risk of

slippage in the understanding of innovation when pursuing a common definition of creativity for an educational context.

The questionnaire presented participants with other terms commonly associated with creativity, such as play. Mandy describes "both planned and self-directed … activities which allow enjoyment, amusement and experimentation". Craft's (2013) definition of play, outlined in the codebook, connects play with student-centred and, ideally, student-directed classroom learning activities, deeply engaging students in extended exploration of an aspect of their learning. Like Craft (2013), Mandy's inclusion of terms such as experimentation and self-directed, suggest she aligns play with question posing and responding and self-determination, as students pursue their own way of understanding and applying a concept. Aligning with Craft, Mandy also implies a connection between play and intrinsic motivation of students involved with the experimentation, suggesting play is a central component of creativity in General English.

Although Mandy did not recognise immersion as an attribute of creativity in the previous questionnaire response, she did provide a definition for the attribute in this question. Mandy identified immersion as "students … involved in an interactive learning environment which allows them to experience a unique perspective". The focus on a student-centred environment of discovery learning highlights a close alignment with play. The codebook also points to Possibility Thinking (Craft, Cremin, et al., 2008) linking play and immersion in classrooms, supporting high cognitive and sensory experience and deep understanding within the learner. The strong link between play and immersion for Craft, Cremin, et al. (2008) and Mandy points to General English students gaining a deeper understanding of concepts through focussed cognitive and sensory engagement with collaborative discovery in a supportive and safe learning environment. Mandy's focus on an interactive environment where students experience particular perspectives implies students' self-determination is fostered through 'journeys of becoming' (Chappell et al., 2012, p. 22) because they grow their creative identity as they shape their work.

Mandy's definition of affective learning recognises an aesthetic experience in General English. She describes it as "how students feel when they are learning. Considering their own values and beliefs". Mandy's understanding of affective

learning highlights the central focus in General English on aesthetic language features as sensory communication tools. The focus on students' consideration of their values and beliefs in Mandy's definition suggests her understanding of affective learning aligns with self-determination and identity formation. This understanding reflects the General English Syllabus Rationale aspiration to develop student capacity to "interpret and create texts for personal, cultural, social and aesthetic purposes" (QCAA, 2018d, p. 1), allowing them to "engage with diverse texts to help them develop a sense of themselves, their world and their place in it" (QCAA, 2018d, p. 1). This aspect of Mandy's definition also correlates with Wise Humanising Creativity (Craft, 2013) implying a link between affective learning and the development of empathy and the ethical impact of an individual's creativity on others, while shaping their own identity. The alignment between the understandings of affective learning presented by the theorist, the participant, and the syllabus's aspirations suggests less risk of slippage in the application of these terms within an educational context and more reason for confidence in building a common definition of creativity across learning areas.

The next section of the questionnaire data explores the alignment between Mandy's understanding of creativity and its outcomes and the understandings presented in the QCAA's 21st century skills (QCAA, 2017b) underpinning the subject syllabus documents. Mandy envisaged no obstacle for the inclusion of creativity in General English because the syllabus is written "with creativity in mind". Mandy identified interconnections between Craft's (2013) creative attributes and the qualities presented in the QCAA 21st century skills framework (QCAA, 2018d). Participants were asked to tick the creative indicators they recognised as present in the Units of Work and the Assessment guidelines of their subject area syllabus.

The QCAA's 21st century skills framework (QCAA, 2017a) organises creative attributes into four categories. The first of these is Critical Thinking, which includes qualities such as analytical thinking, problem solving, and reflecting and evaluating. Creative Thinking is the second category and includes qualities such as curiosity and imagination, innovation, and seeing and making new links. The third category is Collaboration and Teamwork, encompassing qualities such as interacting with others, recognising and applying diverse perspectives, and community connection. Lastly, Personal and Social Skills includes indicators such as character,

adaptability/flexibility, citizenship, and ethical (and moral) understanding. Mandy has indicated she recognises the presence of all of these qualities in the Units of Work and Assessment, with the exception of community connection in Assessment.

An argument exists in the creativity in education literature (Craft, 2005; de Bruin & Harris, 2017) that high stakes testing impedes the development of creative capacity in learners. However, Mandy indicates that creativity in English is not impeded by external assessment. As Mandy notes, "we have had to ensure that there is time and means for creativity, but it has been possible for us to do both". Time constraints for curriculum delivery have been addressed within the planning and resourcing of the program to allow students "safe space to engage with and enjoy creative experiences". For this participant, it appears creativity is essential for students' academic success.

In addition to academic success, Mandy's questionnaire responses indicate she perceives creativity to be critical for young people's development beyond the classroom. Using a Likert scale to respond to a set of statements about how well prepared participants felt to develop creative attributes in their students, Mandy indicates that she strongly agrees creativity is empowering senior students to meet real world challenges, now and in the future. She also strongly agrees that experiential, collaborative learning engaged individuals in risk taking and seeking novel outcomes, fostering senior students as agentic individuals who seek self-determination. Mandy's data indicates she believes creative learning is more authentic and develops individuals to thrive in every part of their lives. The participant's responses align with the outcomes for senior school students promoted by the QCAA (2018d) in the syllabus documents. The common understandings about creativity indicate the possibilities for developing student creative capacity through curriculum in this subject area.

In her questionnaire responses, Mandy prioritises the development of student self-awareness, described in the syllabus documents as character (QCAA, 2017a). Mandy recognises character as "the development of a student's sense of self and a consideration of their own values and beliefs". The term character is included in the Personal and Social Skills within the QCAA 21st century skills to be developed in students, through "resilience, mindfulness, open and fair mindedness, self-

awareness" (QCAA, 2018d, p. 8). While Craft (2013) does not use the term character in her Wise Humanising Creativity framework, the codebook shows Craft's promotion of resilience and fair and open mindedness as desirable qualities in creative individuals for the development of identity, self-determination, and the ability to adapt in a rapidly changing world of diverse perspectives. While the terminology used in the syllabus document and the literature are different, the aspiration for creative learning outcomes for young people is the same. Mandy aligns with both sources by focussing on developing personal attributes to tackle the challenges of a complex world.

Participants were asked on the questionnaire to consider the significance of a range of statements regarding student lifelong learning outcomes drawn from the Rationales of a number of 2019 QCAA General Syllabus documents. Mandy deems as extremely significant statements concerning creative learning in General English that fosters an individual's self-determination through a sense of connection with others… develop[ing] a sense of collective stewardship... [taking] action on social issues. There is a synergy between the syllabus's personal development aspirations, Craft's (2013) approach to creative learning, and the participant's understanding of creativity's role in young people's development through the English learning area. The alignment between these three sources points to a strong foundation on which to build students' personal resources to meet the challenges of daily living and unexpected events, such as the current COVID-19 pandemic.

Mandy indicates developing individuals who provoke alternative ways of seeing, thinking, and doing, or innovation as novelty, as an extremely important learning outcome in General English. The 21st century skills' (QCAA, 2017b) aspirations discussed here point to an alignment with Craft's (2000) Possibility Thinking, preparing young people to live their creativity as a transformative approach to life. Mandy's questionnaire data was used to frame some of the questions for her interview to explore her understanding of creativity in General English at greater depth.

5.2.2 Interview Data

Mandy's interview data further explores attributes associated with creativity that she identified in her questionnaire, beginning with play. In her interview, Mandy stated

“that to teach effectively, play is central”. Mandy adds that “it’s not explicitly stated in the syllabus” but she believed the importance of play is incorporated “in this idea of being innovative and creative learners and thinkers”. She explains: “you learn, …just as deep[ly] as preschool children learn… through…play, even as adults”. Mandy prizes opportunities for student question posing and discovery through play allowing them to “reach their own conclusions… rather than just being told”. Mandy believes risk taking through play is integral to student growth. Teachers needed to be “given lots of safe spaces for [student] playing” to encourage student risk taking and their pursuit of self-determination. She rejects the suggestion of conflict between playful creative learning and academic achievement, saying “there’s no evidence that playtime will reduce academic attainment. … I imagine the research says quite the opposite”, reinforcing the view she expresses in her questionnaire.

Mandy’s comments are supported by the description of play (presented in the codebook) by Craft, Cremin, et al. (2008) as student-centred exploratory activity. The indicative responses from participants included in the codebook align with the literature by linking play and question posing and responding, grounded in ‘as if’ thinking in order to “‘suppose’, …test ideas or solve them” (Craft, Cremin, et al., 2008).

Additionally, the codebook (Appendix 1) presents Craft’s (2013) understanding of risk taking as learners stepping outside their comfort zone or ‘going to the edge’ (p. 128). Mandy concurs with Craft by commenting on the importance of students exercising “independence” to “learn from experience in safe, supportive learning environments” and “develop their agency” to “move into new creative spaces”. Play in learning is recognised by Craft and Mandy as essential for student self-determination, and identity formation.

Mandy believed the opportunity for students to explore texts and “be playful with language and what it can do” is integral to student creative development in General English. Linking play and affective learning, Mandy states: “we really focus on the … analysis of aesthetics and that's very important. … creating and using their own aesthetic features [means] they have a deeper understanding when [they] analyse other people’s”. The study of aesthetic features is called affective learning in the codebook. The indicative responses for affective learning in the codebook describe

learning episodes involving the senses to achieve a deeper understanding of real life issues and experiences, aligning with the data provided by Mandy. Using the definitions outlined in the codebook, Mandy's data reveals the close relationship between the senses and the imagination in creative learning experiences, aligning with Craft by recognising a process of students going "beyond the obvious" and "seeing more than is immediately apparent" (Craft, 2000). Through the exploration of texts, students are going beyond their own experience of the world and developing greater insight about possibilities, as they use their imaginations to shape their understanding of themselves and connect with the experiences of others.

The participant believes, through the close study of both literary and non-literary texts in the English learning area, students were exposed to the values, attitudes, and beliefs of others, developing their sense of empathy and their place in the world. Mandy comments:

> I don't think you can teach someone the sense of themselves. I think they need to figure that out through play. … because… experimentation … allows them to step into roles and therefore can allow them to try on other people's shoes and see how they fit and see how that impacts where they want to go.

Mandy's observations link play with self-determination and empathy and align with Craft's understanding of these attributes in Wise Humanising Creativity. The indicative responses for self-determination in the codebook also point to strong links between self-determination and wise creativity, developing young peoples' deep understanding of other people and their own agency to shape 'good creativity' (Craft, 2008, p. 6) and its beneficial impact on the world. The indicative responses detail individuals using the stories of others in texts to consider a range of values, beliefs, and attitudes, developing their empathy. It also raises the possibility for students to shape their own identity by adopting some values and beliefs from others. This process also connects with the General English syllabus's aspiration of "creating critically literate citizens" (QCAA, 2018d, p. 1) as a focus of this learning area. Mandy's data consistently aligns with Craft's definitions of creative attributes presented in the codebook and the syllabus's aspirations from the General English

Syllabus document, in their understandings of creativity and in the interplay between creative attributes to build creative capacity in learners.

5.3 Health and Physical Education

The second learning area in this analysis is Health and Physical Education. There are only two General subjects offered in this learning area: Health and Physical Education. The Health and Physical Education subject areas aspire to enhance the common good. Through creativity, students are equipped to investigate and devise beneficial, personalised solutions for enhancing health and wellbeing outcomes, for themselves and others, in a range of contexts. In Health and Physical Education, concepts and problem solving are developed with increasing complexity. Each subject uses an inquiry based learning approach to develop students' critical and creative thinking skills. One participant, Rebekah, who teaches in a co-educational Independent school represents this learning area.

5.3.1 Questionnaire Data

When asked to define her understanding of creativity in her learning area, Rebekah describes "student freedom of choice in developing a strategy to improve performance or … health outcomes … using contextualised and relevant resources to the demographic". Rebekah's description aligns with Craft (2013) who promotes Wise Humanising Creativity as a problem solving approach intended to enrich life for individuals or groups of people. Based on Possibility Thinking, the Wise Humanising Creativity framework encourages continual growth in individuals as lifelong learners and agentic citizens. Rebekah's understanding of creativity highlights the creative attributes of self-determination and question posing and responding, in the form of problem solving. Rebekah also notes the pursuit of solutions that benefit the student or other people.

On the questionnaire, when identifying qualities from a list of creative attributes evident in Health and Physical Education, Rebekah chose play, question posing, innovation, risk taking, curiosity, collaboration, intrinsic motivation, and persistence. Rebekah's response is compatible with Craft's (2013) articulation of creative problem solving. Craft (2013) identifies posing and responding to questions as a key part of the problem solving process, opening individuals up to new possibilities and

pushing forward to new knowledge and solutions. A key disposition in this process is curiosity, which is identified by Rebekah.

Rebekah defines play as "learning through exploration … minimal teacher input into the solution. Learning through participation". Rebekah aligns with Craft (2013) by linking question posing with play, defined as the exploratory phase of the problem solving process. In the context of Health and Physical Education, Rebekah's description suggests play allows intrinsically motivated, persistent students to improvise in an "as if" space (Craft, 2013, p. 128), pursuing in their investigation the optimal solution for a problem. As a student-centred process mentored by teachers, learners develop their self-determination, growing their creative capacity and their understanding of the world around them. Rebekah, like Craft (2013), recognises play is often a collaborative process, providing greater diversity of ideas and perspectives for individuals to shape themselves and their solutions to problems. The high value Rebekah places on self-determination and problem solving with creativity is also apparent in the definitions for creative terms offered in the next section.

Rebekah's questionnaire responses share her understanding of listed terms often associated with creativity. The first of these is innovation, described by Rebekah as "creating personalised … contextual resources, strategies and action plans". Rebekah's response aligns with Craft's (2013) conception of educational innovation, where students "connect ideas… triggered by thoughtful adult provocations" (p.128). In Physical Education, innovation is aligned with self-determination. Students use their understanding of biomechanics, psychology, and sports science to develop plans for improving their own physical performance. In Health, innovation is aligned with wise creativity, as students use their domain knowledge to enhance the wellbeing of other people, such as peers and community members. Craft (2013) and Rebekah concur that the term innovation is synonymous with new. In both subject areas, Rebekah's responses suggest students exercise agency to pursue new ideas and solutions which specifically address the concerns of the stakeholder or group.

Rebekah recognises immersive learning as "learning though participating in the game or learning experience… being part of the strategy… trialling and evaluating it". Her explanation describes a student-centred and collaborative process of experimentation. Like Craft (2013), Rebekah links immersion with play and question posing. Students

work together using critical and creative thinking to find the best solutions. Rebekah implies that immersion develops student knowledge and understanding through deep engagement without interruption in safe, supportive learning environments. In her description of trialling solutions, Rebekah also alludes to an element of risk taking. Craft (2013) and Rebekah acknowledge risk taking as an important part of the play or exploratory process. Rebekah's response suggests that students enhance their understanding and domain knowledge while tailoring specific solutions for themselves and other stakeholders. Potentially, students become comfortable with ambiguity and failure, encouraging their resilience as they continue to pursue innovative outcomes. Rebekah's definition of immersion describes embodied learning and, like Craft (2013), Rebekah values immersive, embodied experience for growing student creative capacity. Like Craft, Rebekah recognises that immersion involves cognitive, sensory, and emotional experience to develop new ways of perceiving and understanding the world as part of shaping the individual's creative identity. Rebekah acknowledges a role for sensory experience through embodied participation in creative learning yet does not connect it with the term affective learning.

Rebekah associates affective learning with effective and authentic learning. She describes "feelings of competence, autonomy and relatedness. Using the student as a "test" subject… exploring sports and activities students are interested in". Unlike the sensory and embodied experience connected with immersion described by Craft (2013), Rebekah's explanation implies elements of self-determination and competence in the domain. There is also a sense of personalised learning, that is, making choices that resonate with the student's interest and experience. While Craft (2013) supports the importance of developing self-determination through creativity, her understanding of affective learning, as presented in the codebook, focuses on intuition and emotional response, aligned with imagination as the incubator for creative ideas. While Rebekah's description does not correlate with Craft's (2013) understanding, it does align with the explanation of aesthetics contained in the Physical Education General Syllabus (QCAA, 2018k, p. 15), describing the application of movement with music, such as sports aerobics. The contrast in understandings of the term affective learning is problematic for alignment between

learning areas concerning the inclusion of creative attributes in a common understanding of creativity in an educational context.

Rebekah recognises some impediments to the integration of creativity in Health and Physical Education. She identified a traditional approach, promoting a correct way to perform skills in the Sports and Physical Education industry, as a great impediment to innovation within classroom curriculum delivery. Rebekah has experienced resistance from schools about encouraging students to question pose, something that was encouraged in her teacher training. When implementing the syllabus curriculum requirements, Rebekah was frustrated that the sports available for her small Physical Education class did not always resonate with her students. A lack of facilities and resources has made the inclusion of some team sports unviable.

When considering creative learning outcomes for her students in this learning area, Rebekah prioritises innovation and interconnectedness with people. On her questionnaire, Rebekah recognises all of the qualities linked with Critical Thinking in the 21st century skills framework (QCAA, 2018g, 2018k) in the Units of Work and Assessment Tasks of both subject area syllabus documents. Among others, these include problem solving, reasoning, and reflecting and evaluating. As a process of transformation, innovation requires these skills to define the problem, recognise opportunities and restrictions, be curious about ideas, and explore options for solutions through convergent and divergent thinking. Rebekah highlights statements from a range of syllabus documents which reinforce the importance of innovation in her learning area. On the questionnaire, she marked as extremely significant statements such as developing question posing using real life learning; she marked as significant developing creativity by promoting initiative and curiosity. Rebekah's responses align with Craft's (2013) belief that curiosity and exploration are essential to shaping practices that suit the learner or stakeholder, creating fertile ground for new ideas to form.

Throughout the syllabus documents, Rebekah recognises qualities associated with Creative Thinking in the 21st century skills framework. These include generating and applying new ideas, seeing and making new links, curiosity and imagination, and initiative and enterprise. Rebekah connects these qualities with individuals who provoke alternative ways of seeing, thinking, and doing, arguing they encapsulate the

extremely important learning outcome of moving students into new creative spaces, essential for innovation. As presented in the codebook, Craft (2013) includes modification, adaption, and enterprise in her understanding of innovation, encouraging students to transform problems into new, more suitable solutions for individuals. Rebekah also acknowledges the importance of interconnectedness with other people as an important part of innovation in an educational context. Alignment exists between Craft (2013) and the General Health and Physical Education Rationales (QCAA, 2018g, 2018k) in measuring a successful creative solution by how well it meets a stakeholder's needs.

Rebekah recognises indicators of Collaboration and Teamwork in the Units of Work of the Health and Physical Education syllabuses, but not always in the Assessment Tasks. These qualities include interacting with others, participating and contributing, adaptability/flexibility, cultural and ethical awareness, and character. There is no recognition of connections with the community, a surprising omission, particularly in Health where interaction with "peers, family and community" (QCAA, 2018g, p. 1) is central to the learning. Rebekah signifies the extremely significant relationship between students and their world by choosing statements such as developing a sense of connection with others and with authentic, real life learning and developing an awareness of personal, social, and ethical implications and impacts of solutions. Rebekah also considers understanding, analysing, and taking action regarding social issues as a significant learning outcome for senior students. Highlighted in these responses is the "empathic approach" needed to enact change identified in the Health Syllabus Rationale statement (QCAA, 2018g, p. 1). Developing active citizens and lifelong learners is a key outcome for Craft (2013) in Wise Humanising Creativity. Rebekah's questionnaire data is consistent with Craft's aspiration to foster creative individuals who develop constructive solutions for others to thrive in the world. In her interview data, Rebekah further highlights the importance of developing personal attributes to cultivate ethical, creative problem solvers.

5.3.2 Interview Data

In her interview, Rebekah expressed strong support for the inquiry based learning approach underpinning both the Health and Physical Education syllabus documents. Rebekah explains: "I think it gives them scope to ask their own questions… the way they collect data… and the way they present their assessment". She believes an

inquiry approach is essential for developing autonomous, innovative learners through "more scope… more creativity… more autonomy". In turn, problem solving with real problems develops their interconnectedness with other people, in a diverse range of contexts. Rebekah notes that the focus of each Physical Education task is "improving your own performance… Show me what you would do with your body to work out a solution" and in Health "it was about how you developed the Health strategy… within the context of the population… is that going to work for the younger kids or adults"? Rebekah's comments align with the syllabus Rationale statements of both subject areas, prizing authentic real world learning adapted for specific contexts.

In the General Health curriculum, students can address an area of health and wellbeing that is of significance to them. As a "strengths based program" (QCAA, 2018g, p. 1), the objective of the assessment is to consider how to positively impact, "yourself… the individual, or the group" with a personalised solution. Rebekah explains that the syllabus is structured so that some units focus on "how…we improve your personal health". Later units focus on "the greater good" so students consider the needs in personal, community, and global contexts. Particularly with Health, Rebekah identifies the learning focus is "not on the answer… but looking at a number of different ways of doing it". Rebekah highlights that the curriculum structure develops students' empathy, adaptability, and enterprise for a range of contexts.

Similar opportunities are available to students in Physical Education, focussing on the improvement of their own physical performance. Rebekah explains personalised solutions for enhancing performance are inevitable because "your data is yours, no one can copy it". Rebekah shares with Craft (2013), through Wise Humanising Creativity, the core objective of developing learners into innovative and adaptable individuals, capable of linking new ideas and creating life enhancing solutions for specific contexts. Rebekah also aligns with Craft in valuing her learning area as "very student centred… here's the context, here's the problem… work out a solution. …you're not focussed on… 'the answer'". Rebekah's comments demonstrate she values students developing a personalised and beneficial response by "looking at ways outside the box that we can promote health, wellness and lifelong fitness".

According to Rebekah, developing successful solutions in this learning area requires "resilience… people to adapt quickly… and finding ways to engage with people". Rebekah identifies one of the biggest challenges for Physical Education students as "learning to manage their social skills and emotional intelligence… while developing the rigours and requirements of the senior system". Rebekah comments that, despite the frustrations of working with others in a small class, Physical Education's collaborative approach "has been really beneficial" to developing personal responsibility in learners, "so they can [appreciate] … we all have to… pitch in and do the right thing… for everyone to achieve [their] best". Students work collaboratively, assisting with the collection and recording of data, particularly in units focussed on a team sport, so each learner can develop personalised solutions enhancing their own performance.

Rebekah identifies as pivotal to success in this learning area the development of personal attributes, such as resilience, persistence, and intrinsic motivation. The experimental process for developing innovative solutions requires students to "try different ways of doing things" and taking risks, which often leads to failure. Rebekah comments: "the kids get disheartened. … rather than seeing [the failure] as a negative how can we see it as a strength"? Likewise, the process of finding the best solution requires persistence because "it comes back to basic trial and error… you're going to have to try things [and learn] from your own experiences". To do this successfully, Rebekah believes students need to be intrinsically motivated and, "take the initiative to trial it themselves… explore and investigate". Like Craft (2013) and the General syllabus documents (QCAA, 2018g, 2018k) in this learning area, Rebekah recognises the need for creative people to develop personal attributes such as resilience, persistence, and intrinsic motivation to pursue fresh ideas and novel solutions for improving people's lives. Rebekah's data suggests students are evolving in a process described in Humanising Creativity as 'journeys of becoming' (Chappell et al., 2012, p. 22), part of the Wise Humanising approach to creativity (Craft, 2013). Rebekah's questionnaire and interview data point to creative senior students in Health and Physical Education evolving as innovators while devising opportunities for themselves and others to thrive.

5.4 Humanities and Social Sciences

The third learning area in this analysis is Humanities and Social Sciences. The subjects included for this learning area are Business and Modern History. Both subjects cultivate individuals who can connect and interact meaningfully with others on an individual, community, and global level, creating personalised and sustainable possible futures. Students develop into critically literate citizens by scrutinising ideas, movements, and experiences in local and globalised contexts. Business and Modern History adopt an inquiry based learning approach to prioritise the development of the 21st century skills (QCAA, 2017a). There are three participants for the study in this learning area. One, Ian, teaches Modern History in an all-boys school in the Catholic school sector and the remaining two, Lucy and Ruth, teach Business, one in a co-educational Independent school and one in a State High school.

5.4.1 Questionnaire Data

The Business participants value creativity within the bounds of the business world. Lucy's questionnaire definition of creativity emphasises "inventiveness, imagination and original ideas". From the list of creative attributes associated with creativity listed in the next question, Lucy chose question posing, innovation, pursuing novel outcomes, curiosity, collaboration, intrinsic motivation, and persistence. Ruth defines creativity as "the opportunity to be innovative and relate topics to the real world". Ruth shares Lucy's list of attributes associated with creativity, with the addition of imagination, immersion, risk taking, ethical motivation, empathy, and resilience. Lucy emphasises the attributes embedded in the General Business syllabus (QCAA, 2019a) aspirations for student learning outcomes. Ruth comes to education from the business world and could be looking to stretch her students beyond the classroom. Lucy and Ruth's responses suggest they pursue creativity as innovation within the real-world practices of the business sector, highlighting the creative attributes and personal qualities that empower individuals to pursue self-determination and novel outcomes, associated with innovation.

The Business and Modern History participants all highly values creativity as innovation. However, from a Modern History perspective, Ian's appreciation of innovation relates to "independent thinking, curiosity and innovative thinking and presentation [of an argument]". Ian's focus for innovation is reinforced by the creative attributes selected on his questionnaire, which are similar to Ruth's, with the

exclusion of the personal attributes. The creative attributes Ian nominated are all associated with question posing, using deep critical and creative thinking to pursue new solutions, and then turning thinking into action. The participant understandings of question posing align with associated terms for question posing presented in the codebook, which include curiosity and inquiry based learning. Craft (2013) and the learning area participants each understand innovation to be synonymous with new ideas, processes, or products and recognise the link with imagination, risk taking, and question posing in the process of transformation. Like Craft, Lucy, Ruth, and Ian embrace creativity by encouraging students to exercise curiosity when problem solving to seek new ideas, processes, and solutions. Simultaneously, students develop personal attributes, including persistence and intrinsic motivation, necessary for transformational thinking and action associated with Possibility Thinking (Craft, 2013).

All three participants identify a process of problem solving in their definitions of innovation as transformational change. Lucy highlights that "even a small idea can make changes … as demonstrated… by reviewing real products and creation for business". Lucy's perspective draws on the understanding of innovation within industry, where new can be an adaption or modification to an existing product or process in order to achieve improvements for its use (Wijngaarden et al., 2019). Aligning with the definition of innovation in the codebook, Lucy describes a process of educational innovation, where teachers guide students to connect ideas and develop new solutions to everyday problems (Craft, Cremin, et al., 2008). Lucy may deem this understanding of innovation more appropriate for senior school students than the domain shifting transformational innovation of big C creativity. Ruth's definition of innovation focusses on the students' capacity for "critical and creative thinking", aligning with Craft's (2013) definition of question posing, a necessary component of innovative transformation. Ruth seems to focus on the process, rather than the outcome of innovation.

Like Ruth, in Modern History, Ian links creativity as innovation with question posing, describing, and "curiosity" for "interpreting information to create new ideas". As previously noted, the codebook identifies curiosity as a term associated with question posing. Ian describes the creation of new ideas as the foundation for new outcomes. Ian's definition of innovation aligns with Craft, Cremin, et al. (2008) and

the Business participants delineating educational innovation as appropriate for senior students developing their agency in an educational context.

The learning area participants were each able to provide a definition for the term play, despite not selecting it from the list of attributes in the previous question. Lucy describes "the opportunity to physically experience a particular skill and be able to demonstrate [it]". Ruth notes using "scenarios that reflect the content". Ian describes play as "akin to curiosity…playing with ideas in their mind". Each participant defines play in this learning area as practising skills for real life contexts. The participants align with Craft (2013) who defines play as "being in an 'as if' space, improvising" (p. 128). While not recognising the term play in the previous question, the participants appear to value the inclusion of this creative attribute for student learning.

The learning area participants imply that immersion is significant for creativity and connected with play. On her questionnaire, Lucy valued immersion for skill development, but acknowledges that "ATAR provides restriction with time constraints" and so immersive learning could not be delivered in General subject curriculum to its best advantage. Craft, Cremin, et al. (2008) and Lucy align by understanding immersion to be a state of deep, uninterrupted concentration with high cognitive challenge for educational innovation.

Like Lucy, Ruth perceives that immersion connects students with the curriculum, but highlights the "use of visual stimulus…to immerse [students] in the curriculum". Lucy appears to focus on the resource of time rather than visual stimulus to instigate immersive learning for her senior students. Despite the different emphases, both participants value the attribute of immersion for connecting students meaningfully to the curriculum.

For Modern History, Ian's response is similar to Ruth's, emphasising "learning in a simulated … environment". Ian's understanding links with his previous data focussing on the environment for developing students' critical and creative thinking skills when creating new ideas and ways of understanding. The learning area participants align with Craft (2013) by valuing an immersive learning environment, permitting students to enter a deep state of concentration, which is valuable for developing innovative thinking and self-determination. The similarities in

understandings of immersion in this learning area may begin to provide a foundation for a common definition of creativity.

Like Rebekah in Health and Physical Education, the Humanities and Social Sciences participants understand affective learning to be synonymous with effective learning and student engagement, rather than learning experienced through the senses. On her questionnaire, Lucy describes "understanding this as being learning that appeals to the student's motivations". Lucy points to developing intrinsic motivation in students, rather than developing their awareness of aesthetic features or their sensory experience of the world. Ruth concurs with Lucy, perceiving affective learning as "embedded technology and the ability to meet the talents and interests of the learners". The Business participants emphasise authentic learning and student engagement with learning, rather than sensory or aesthetic learning.

In Modern History, Ian aligns with the Business participants, describing "learning that appeals to the student's motivations", linking affective and effective learning. In the codebook, Craft (2000) differentiates from the participants, understanding affective learning to describe an experiential layer of understanding through the emotions, sensory faculties, and intuition, closely aligned with immersion and imagination. Sensory learning aligns with the key term aesthetic learning in the codebook and in the 21st century skills underpinning the 2019 QCAA Senior school syllabus documents. The disparity in the understanding of affective learning between Craft (2000) and these learning area participants suggests a greater emphasis on the development of cognitive skills for innovation in Business and Modern History. Excluding affective learning may prove an obstacle in establishing a common understanding of creativity with other learning areas.

The term character, derived from the QCAA 21st century skills (QCAA, 2017b), is understood by the learning area participants as the personal values and ethics of the individual. Lucy describes the "opportunity to include links between business attitudes, community involvement, environmental action and personal values around citizenship". In line with the syllabus's aspirations discussed earlier, Lucy's focus is the development of responsible citizens and leaders. Similarly, Ruth's understanding of character involves "building strong work ethics", arguably important for academic success and citizenship.

For Modern History, Ian uses the definition provided in the QCAA (2018i) 21st century skills underpinning the syllabus documents: "resilience, mindfulness, open and fair mindedness and self-awareness" (p. 9). Ian's understanding of character parallels the Modern History syllabus's aspirations for interconnectedness of people in different contexts. Differentiating from the Business participants, Ian focusses on the personal development of the individual, but shares the objective of preparing individuals to be agentic citizens in a 21st century world. Craft (2013) does not use the term character in the Wise Humanising Creativity framework, but the development of personal qualities, such as resilience, is encouraged for the transformational process of Possibility Thinking. Craft (2008) promotes the need for students to be self-aware and ethically motivated as part of her conception of Wise Humanising Creativity. The similar understandings about the development of students' personal attributes through creativity between the theorist and learning area participants may provide opportunities to use curriculum in this learning area for strengthening individual agency and shaping possible futures.

Under the current syllabus documents, two of the three participants in this learning area have experienced impediments for the achievement of creative learning outcomes for students. In Business, Lucy identifies time constraints, timetable structures, and the volume of content for curriculum delivery as preventing "the brain [from] having the opportunity to go to the creative space". To overcome these impediments, Lucy advocates for changes to senior school timetabling: "a whole year level into [larger] blocks of time in the day" to provide opportunities for immersive learning in General subjects. Craft (2013) and Lucy align in understanding that immersion provides opportunities for a higher quality of student learning and opportunities to engage meaning making of concepts and linking ideas that lead to new possibilities in a 21st century world.

In Modern History, Ian laments the lack of opportunity for students to risk take and fail as part of the journey to success and self-awareness. He believes a tension exists in senior school education between the syllabus's aspiration of students' agency and parents' and students' expectations of academic success in a criteria based, high stakes assessment environment. Ian states: "Nothing could be more important to promoting creativity than failure". In his interview data, Ian emphasises the importance of risk taking in the development of innovators, saying "you have to be

prepared to go off the script and go your own path". Ian highlights that the absence of risk taking in the senior school learning context does not support the development of students as innovative problem solvers for the 21st century, a key objective of the QCAA 21st century skills framework (QCAA, 2017b).

Craft (2013) and Ian agree that promoting risk taking is essential to creative learning so that students can exercise their independence and generate new ideas. Craft contends that students become more comfortable with ambiguity and stepping out of their comfort zones in safe, supportive learning environments using experiential learning. The tension Ian identifies in senior schooling is also borne out in the literature. There seems to be a move to change perspectives about failure and recast it as part of the process of academic success. The participant data presented here suggests an alignment with Craft (2013) in understanding the importance of creating a learning environment that develops creative attributes to enhance student creative capacity. Lucy and Ian believe creative learning in Business and Modern History may not currently be as authentic as it could be. Students are impeded from effectively engaging with the attributes, such as immersion and risk taking, that would enhance their understanding of curriculum, grow their agency, and consequently develop their success both academically and as 21st century citizens.

The questionnaire presented participants with qualities associated with creativity in the QCAA 21st century skills framework (QCAA, 2017b). All participants recognise the qualities associated with Critical Thinking, such as problem solving, in their respective syllabus Units of Work and Assessment Tasks. Problem solving is identified by the codebook as aligning with question posing in Craft's (2013) framework. It is also prioritised by Craft and the learning area participants for enhancing creative learning outcomes.

When considering a range of statements about student learning outcomes from syllabus document Rationales, all three participants recognise skills associated with innovation, such as to provoke alternative ways of seeing, thinking, and doing. The codebook shows that Craft links question posing and innovation as essential components of the Possibility Thinking approach to life, transforming 'what is' to 'what might be' (Craft, 2013, p. 128). Along with Craft, the participants recognise

the importance of these attributes for young people's successful engagement with a dynamically changing world.

Two of the three participants recognise some Creative Thinking qualities in the syllabus documents. These qualities associated with innovation include initiative and enterprise, curiosity, and generating and applying new ideas. In Business, Lucy did not recognise curiosity, imagination, or generating and applying new ideas in Assessment Tasks. Lucy's responses suggest the creative thinking necessary for innovative outcomes is developed in the Units of Work, but not evidenced in the assessment of learning outcomes.

Ruth does not recognise Creative Thinking qualities in the syllabus documents. However, in the following question, she indicates the development of creativity by promoting curiosity and initiative as extremely significant. Similar to the analysis in previous learning areas, the participant responses indicate support for the syllabus's aspiration of authentic and innovative learning yet seem to struggle to promote the development of these attributes in the current syllabus structure. Research from Craft and Chappell (2016), along with the list of associated terms, both presented in the codebook, connect innovation with identifying alternatives and generating and applying new ideas. Creativity literature and the participants for Business share the understanding that developing and applying curiosity and innovative thinking to real life learning is necessary for developing individuals equipped for a 21st century world.

Ian recognises all aspects of the Creative Thinking attributes from the QCAA 21st century skills (QCAA, 2018i, p. 9) in each section of the Modern History syllabus. Through his choice of syllabus's aspirational statements, Ian indicates the skills associated with inquiry and developing critically literate citizens are significant to the learning outcomes for Modern History. Aligning with Craft (2013), these skills include real life learning, developing self-determination, curiosity, and initiative in a Possibility Thinking approach to life and 'journeys of becoming' (Chappell et al., 2012, p. 22), for the building of possible futures.

The participants for Business and Modern History diverge significantly in their responses about the qualities for Teamwork and Collaboration and Personal Attributes listed in QCAA 21st century skills (QCAA, 2017b). In Modern History,

Ian recognises all the qualities associated with Collaboration and Teamwork and Personal Attributes, thereby aligning with the Modern History syllabus's (QCAA, 2018i) aspiration to develop connections between people through empathy. Ian reinforces this view by indicating as extremely significant learning outcome statements, such as the development of an awareness of personal, social, and ethical implications and impacts of students' solutions. Ian concurs with Craft (2013) that educators have an obligation to instil a sense of personal responsibility in students for the creative outcomes for others and the world in the 21st century.

In contrast, Lucy does not recognise any Personal and Social Skills or Collaborative or Teamwork qualities in the Business syllabus document. Ruth recognises indicators for cultural awareness and ethical understanding, and participating and contributing in the Units of Work, as well as evidence for community connections in each section of the syllabus document. This finding is significant in relation to the Business syllabus's (QCAA, 2019a) aspiration to promote collaboration and teamwork in the workplace. Importantly, when choosing syllabus Rationale statements about student learning outcomes, Lucy and Ruth reinforce their previous data by prioritising student development of self-determination as an extremely significant outcome for the Business Subject Area, and also indicate as extremely significant student development of an awareness of personal, social, and ethical implications of their solutions and the development of understanding, analysing, and taking action regarding social issues in the world. The data suggests Lucy and Ruth support the aspiration of developing social skills and personal attributes in students, but neither participant finds evidence of its development in curriculum delivery. The participants' responses correlate with the aspirations of Wise Humanising Creativity (Craft, 2013) that value creative learning to cultivate individuals in a range of contexts who can interact meaningfully with others creating sustainable possible futures.

5.4.2 Interview Data

Ian, Lucy, and Ruth express strong support for the inquiry based learning approach embedded in this learning area and its connection to authentic learning with real life experiences. Business and Modern History authentically develop students' problem solving skills using specific case studies or historical documents respectively. In Business, both participants prioritise authentic learning using, as Ruth explains,

"inquiry questions linked with scenarios". Lucy values developing students' question posing in a lifelike learning episode, by scrutinising scenarios from different perspectives to "analyse what the implications might be for that business moving forward". This process also occurs in Modern History with historical documents.

Ian engages inquiry based learning in Modern History to develop students' deep, critical thinking about real life events and the associated ideas. Ian explains: "what I want them to do is to be able to analyse and come up with their own conclusion". Ian suggests that scrutinising historical documents allows students to exercise self-determination in the construction of their arguments. Ian encourages class discussion and question posing to "draw out the argument". He comments that more exploration of critical literacy would lead to more "understanding… and aha moments" for students. The key terms associated with self-determination drawn from the QCAA 21st century skills framework (QCAA, 2017b), as outlined in the codebook, link with critical thinking skills and problem solving. The comments from the learning area participants seem to prioritise developing critical literacy skills in senior students. Craft (2013) and the learning area participants agree that self-determination incorporates opportunities for learners to shape their identity through creative interactions with others in the world. Both self-determination and question posing are recognised as necessary in this learning area for the transformative process of innovation.

Business and Modern History participants link inquiry and play. In both subject areas, play is understood as experimenting and exploring to identify possible solutions to real life problems. In Business, Lucy supplements her questionnaire data by providing as an example of play: "students physically holding a meeting". She believes play provides opportunities for students to "hone their skills". The attribute of imagination is implied in Lucy's example when students are "going beyond the expected" (Craft, 2013, p. 128) and devising new ways to constructively interact with others within a life-like context within the safety of a classroom. In Wise Humanising Creativity (Craft, 2013), imagination is closely connected with innovation and self-determination transforming problems into solutions in ways which reflect the problem solver.

In Modern History, Ian suggests that his classes engage with play as experimentation linked with innovation in a scaffolded process of critical thinking about an event, such as the American Revolution. Ian "does not control… but directs" the development of the students' exploration of possible perspectives, equipping students to reach conclusions independently, developing their own argument. Ian emphasises that the process requires specialist teachers with a depth of domain mastery who can "talk about [the subject matter] at any level". Immersive play, Ian identifies, is important for critical thinking development in both academically capable students and those who struggle, because in a safe, supportive learning space, students engage in exploring effective strategies and independent thought processes.

Ian uses storytelling pedagogy in the development of critical thinking skills because "if you take the pressure off, you change the child's relationship with the work". Ian's comments suggest he develops students' self-determination using pedagogies that overcome the pressure of a high stakes environment. Engaging students with the story of human experience during the American Revolution assists students to grasp concepts and link ideas in new ways, encouraging risk taking to enhance their capacity for self-determination and innovation and "blend their own story of the American Revolution". Like the Business participants, Ian focusses on developing individuals who scrutinise ideas and connect creatively and meaningfully with others. Possibility Thinking (Craft & Chappell, 2016), as presented in the codebook, closely aligns imagination, innovation and risk taking, when students adapt a process within a subject area for their own purposes.

In Business, Lucy and Ruth emphasise the importance of collaboration and teamwork. Lucy observes that "collaboration is essential in Business", because "then you are feeding on one another's strengths and… allowing for the growth of ideas and new opportunities for innovation". Lucy values collaboration skills for developing students' problem solving abilities to devise novel solutions in response to real world problems. Ruth and Lucy agree that classroom collaboration is "a springboard" for innovative thinking about real life issues. Ruth describes a process of classroom discussion where students freely say, "what they think", exposing each other to a range diverse views and experiences. Consequently, students consider "how does this fit with the scenario we're looking at"? Ruth finds this process stimulates experimentation in response to real world issues and develops innovation

and self-determination in students. Ian, Lucy, and Ruth each embrace creative attributes such as collaboration to develop students as confident and creative innovators connecting meaningfully with others.

The participants' data is consistent with the way the Wise Humanising Creativity framework (Craft, 2013) encourages students to work collaboratively in face-to-face and digital learning environments. The advantages include student exposure to alternate views and values on real world issues and the development of innovative thinking and action by students in response to dynamic societal change. Engagement with collaboration in safe, supportive learning environments encourages young people to experiment with a range of identities and ways of working that promote growth and experience through creativity. Craft and the participants concur on the importance and authenticity of collaborative creative learning in the development of individuals prepared for engagement with a 21st century world.

Lucy, Ruth, and Ian report that students enhanced their capacity for self-determination during the COVID-19 lockdowns in 2020, developing the personal attributes of resilience, persistence, and intrinsic motivation while continuing the pursuit of academic success. Lucy describes students putting Business theory into practice, through, "change management… they just had to adapt". Sudden and forced change resulted in student development of self-awareness and self-management skills. Likewise, Ruth sees student resilience evidenced by "who is prepared to go the extra mile".

Similarly, in Modern History, Ian's experience is that senior students treated the change with a "business as usual" mindset. He comments: "Things like this happen, people cope. … students find a way around what they have to do in life". Particularly in senior schooling, the necessity for individuals to adapt in response to real life societal change encourages students to engage creatively with learning and develop personal attributes for self-management, innovating to shape their learning. The 21st century skills (QCAA, 2017b) underpinning the syllabus documents support the participants' experience of students developing self-awareness and self-management through creative learning in response to dynamic societal change. Likewise, the definitions for personal attributes presented in the codebook point to the work of creativity researchers (Craft, 2000; Craft, Cremin, et al., 2008; Gardner,

2008b; Runco, 2016) to support the participants' growth of personal attributes, such as resilience and intrinsic motivation, as necessary for a Possibility Thinking (Craft, 2000) approach to life. Developing these qualities allows students to adapt effectively to significant economic, technological, and social change, like that experienced during the current pandemic.

In Business and Modern History, Lucy, Ruth, and Ian support the development of ethical awareness and creativity for the common good. The Wise Humanising Creativity framework dubs this creative attribute wise creativity (Craft, 2013). In Business, Lucy comments that ethical awareness is only discussed "from a business perspective, considering ethical values, responsibilities for environmental issues". She explains that any personal learnings are the student's own interpretation and not a focus of the subject area. The Business syllabus (QCAA, 2019a) also identifies the world of work as the focus of creative learning in this subject, rather than all areas of students' lives. It is one of the key differences from Modern History, which aspires to develop learners and their connection with others in every sector of life.

Ian had been conflicted about the possibilities of developing student empathy through curriculum delivery, because he perceived his learners had not experienced significant personal hardship. Ian observes that "when you're teaching middle class … boys in a wealthy country, who want for nothing…. how do you engender empathy"? Considering ethical outcomes for creativity, Ian explains that "there was an understanding [among students] that there needed to be a common good". In one example Ian provides, he pursued the development of creative stewardship in his students through class discussions which permitted boys to express divergent views about global social issues. As some students wanted to continue the debate, Ian deduced they *could* appreciate and value other people's circumstances without personal experience, reflecting "So, maybe what I thought was no, is actually a yes". Ian may feel ethical stewardship is a less tangible attribute to instil in students but persists because of its importance to connect meaningfully with the experiences of others in divergent contexts.

Craft (2008) argues that teachers need to instil an ethical stewardship in students for the impact of their creativity on others. The definitions for wise creativity presented in the codebook reveal Wise Humanising Creativity (Craft, 2013) as an approach to

life, developing creative individuals who consider the common good as an outcome of their innovation. The participants' responses align with these ideas highlighting the importance of ethical responses to adverse circumstances, in both work and personal life.

The analysis of this learning area demonstrates alignment between Business and Modern History in prioritising students' development of creative attributes including innovation, question posing, play, immersion, personal attributes, and wise creativity. The theorists, syllabus documents, and participants agree that creativity in learning develops individuals who respond effectively and rapidly to change in the world around them, pursuing better outcomes for themselves and others.

5.5 Languages

Languages is the fourth learning area in this analysis. The subject included for this learning area is Japanese. The learning area of Languages aspires to develop interconnectedness between students and others in their community and around the world. Exposure to an additional language and culture develops students as critically literate citizens. Students develop the intellectual flexibility to accommodate different language conventions and intellectual understanding. A deeper understanding of language and its purposes allows students to understand and appreciate the world around them. The study of an additional language develops students' understanding of a different language, culture, and community, enabling active global citizenship. The Japanese syllabus (QCAA, 2019c) promotes student-centred learning for fostering individual agency and self-determination. Students develop critical and creative thinking skills for problem solving and innovating new and useful solutions, growing creative individuals who find new ways to enhance human flourishing, now and in the future (QCAA, 2019c). Two participants have been included for this learning area. Joan and Mai both teach in the Independent sector, one in a co-educational school and one in an all-girls school.

5.5.1 Questionnaire Data

In Japanese, Joan and Mai's questionnaire data highlight a strong commitment to integrating creativity into learning. When asked to provide her understanding of creativity, Joan states: "students are always being creative in Japanese". Joan expands on her statement with examples of student interaction involving the creative

attribute of play ranging from the "construction of… texts" to "completing role plays". Joan's comments suggest creativity in classroom activities engage students in domain mastery, particularly with language proficiency.

Mai believes "all learning involves using creativity in some way", because creative learning "requires generating …thoughts and ideas into some… creation… concrete or not, via… content, …curriculum skills, imagination, intellect and the senses". Mai's remarks highlight that she understands creativity to be essential to learning and to life. Her understanding of creativity encompasses both intellectual and sensory capacities, aligning with Craft's (2013) conception of Possibility Thinking, which encompasses the creative attributes of imagination and affective or sensory learning, intellectual capabilities, domain knowledge and skills, and innovation in the generation of new ideas and products.

Joan and Mai both recognise all of the attributes associated with creativity listed on the questionnaire. These are play, question posing, imagination, innovation, immersion, risk taking, aesthetic learning, pursuing novel outcomes, curiosity, ethical motivation or empathy, resilience, collaboration, intrinsic motivation, and persistence. Both Joan and Mai share with Craft (2013) a holistic conception of creativity incorporating the development of knowledge, skills, and personal attributes for the development of personal agency and innovation in life.

Joan and Mai share their understandings of several terms commonly associated with creativity. The first term, innovation, is a capability prioritised in Japanese. Joan describes innovation as "creating new ideas through creativity". This suggests Joan perceives innovation as the product of the creative process. In keeping with her understanding of creativity as essential to life, Mai defines innovation from a global perspective, conceiving it as "examining changing and evolving social roles and presenting new and alternative thinking". Mai's understanding of innovation harmonises with the delineation of educational innovation by Craft and Chappell (2016) as involving students "playfully connecting ideas, triggered, scaffolded and extended by thoughtful adult provocations" (p. 408) leading to new creative understandings or products. Aligning with the Japanese syllabus's aspirations (QCAA, 2019c), Mai's understanding of innovation recognises a link between the development of critical and creative thinking and question posing when students

engage with a dynamically changing society. Both Joan and Mai align with the General Japanese syllabus (QCAA, 2019c) and with Craft (2013), by developing cognitive creative attributes to empower students for creative thinking and innovation.

Joan's and Mai's definitions of the creative attribute of play in Japanese focus on developing students' domain mastery, particularly language skills and cultural understanding. Joan believes play is "using games for language consolidation". Similarly, Mai notes "drama, role play and games to memorise and develop language functions, patterns and enjoyment". Both participants believe play is a collaborative process in which students learn with and from others. However, it is possible to engage individually with some language development games. The connection between play and domain mastery links Languages with The Arts, where games are also used for building understanding and skills in a collaborative, joyful learning environment.

Joan's and Mai's understandings of play as role play also align with Craft's (2013) description of play as requiring students to engage with risk taking in order to develop themselves and grow their comfort zone. Role play provides an 'as if' (Craft, 2013, p. 128) experience to rehearse social interaction without real world consequences. Students can benefit from finding the courage to make mistakes in front of their peers if they value the learning that results. Craft (2013) notes that when students risk take in safe, supportive environments, they develop agency, innovate new ideas and products, and become more comfortable with ambiguity and 'going to the edge' (p. 128). Both participants imply that when participating in play, the sense of fun helps students engage with a challenging activity more effectively, improving their learning. Craft and the participants also link play as exploratory learning with immersive learning.

Craft (2013) describes immersion as a state of deep concentration engaging cognitive, sensory, and emotional capabilities in the process of creation. Immersion connects with play and imagination to produce deeper understanding for the individual. Joan concurs, pointing to students "always using the language in classes, even for greetings, instructions and actions". Joan recognises immersion linked with play as collaborative attributes that develop students' language skills and cultural

understanding. The exploration of play, for Joan, is linked with deep concentration to strengthen students' domain mastery.

Mai agrees, but highlights "cultural immersion" as strengthening student capacity for innovation because it "provides multiple perspectives and viewpoints" for student consideration. Exposure to different language conventions and values provides stimulus for new perspectives and the potential of seeing familiar concepts in new ways or joining different ideas together for novel outcomes. Mai links immersive learning and question posing for the development of intellectual flexibility and problem solving. She reasons: "problem solving is a very big skill… I think questioning is a very big part of that". The descriptions of immersive learning provided by both Joan and Mai suggest their approach to planning classroom learning with creativity encompasses domain mastery as a foundation for student creative capacity, fulfilling the Japanese syllabus's aspiration (QCAA, 2019c) to produce agentic, interculturally minded problem solvers.

Joan and Mai share common ground with Craft (2013) about the nature and impact of affective learning, characterised by Joan as "being able to relate to stimuli… making a comparison between their own life and experiences". Joan's definition suggests students develop empathy when putting themselves in the shoes of Japanese students to understand how aspects of their lives compare and contrast with their own. This requires emotional and sensory experience as well as cognitive understanding; this aligns Joan's understanding of affective learning with Craft's (2000) conception of a non-conscious or spiritual level of understanding.

Mai's understanding of affective learning is "understanding and expressing feelings and attitudes of self and others … culturally and interculturally". In Wise Humanising Creativity, Craft (2013) recognises affective learning as an important component for an individual's shared human experience and ability to problem solve successfully for the betterment of all involved. The Japanese General syllabus's aspirations highlight the development of "intercultural understanding" (QCAA, 2019c, p. 1). Emotions and sensory experience are also important for appreciating a diversity of ideas, providing fresh perspectives for innovation. Mai's response reflects the understanding of affective learning from Craft (2013) and the General Japanese syllabus (QCAA, 2019c).

With respect to the term character, Joan recognises the term as a literary device, "taking on a character in role plays". Mai instead connects the term with self-awareness, a "strong understanding of self, juxtaposed with a variety of others". Mai's sense of the term aligns with the definition presented in the 21st century skills (QCAA, 2019c) that highlights "mindfulness, open and fair mindedness and self-awareness" (p. 8). In Wise Humanising Creativity, Craft (2013) advocates for the development of open and fair mindedness in young people who are ethically motivated to consider diverse viewpoints. The understandings of creativity in General Japanese (QCAA, 2019c) revealed in this section demonstrate these participants strongly align with Craft's (2013) conception of creativity for young people and the 21st century skills (QCAA, 2019c) embedded in the QCAA 2019 Senior School General Syllabus documents.

On her questionnaire, Joan reports no obstacles to integrating creativity into the Japanese classroom. However, Mai suggests "development of the inner skills and qualities, [for] creativity, takes time…with the large amount of content, this would be the only obstacle". Yet, Mai does acknowledge that "creative use of time and efficiency is also a creative learning skill". Mai's response resonates with aforementioned data from these participants indicating their appreciation for immersive learning in Japanese. Craft (2013) and Mai agree: students need extended periods of deep concentration to effectively develop deep understanding in their learning. Additionally, Mai aligns with Craft (2013) when recognising the need for creative individuals to maximise their ability to find innovative ways to overcome challenges and restrictions, pursuing a Possibility Thinking approach to problem solving.

On their questionnaires, the participants also consider statements from the QCAA 21st century skills framework. In general, Joan and Mai indicate their agreement with the statement that the current QCAA Senior school syllabus suite provides opportunities for schools to develop their senior students' creativity effectively. The participants' responses of agree, rather than strongly agree, suggests there is scope for improvement, which is to be expected with the implementation of a new syllabus. In their consideration of a series of other aspirational statements from the syllabus regarding student learning outcomes, both Joan and Mai indicate each learning

outcome as extremely significant. The statements can be grouped into two attributes of creative capacity. The first of these is what Craft (2008) dubs wise creativity.

Joan and Mai indicate the development of wisdom as an extremely significant learning outcome, choosing statements such as individuals who develop collective stewardship for the common good; developing a sense of connection with others and with authentic real life learning; developing an awareness of personal, social, and ethical implications and impacts for their solutions; and understanding, analysing, and taking action regarding social issues in the world. In the context of creativity in education, Craft (2008) conceives wisdom as developing an individual's stewardship for the ethical application and outcomes of creativity, enhancing the common good. Both participants understand creativity in an educational context to include authentic interconnectedness with others and the world. Pursuing the development of ethically motivated, interculturally connected individuals aligns with the General Japanese Syllabus's (QCAA, 2019c) aspirations and with Craft's (2013) Wise Humanising Creativity framework. The correlation provides common ground across learning areas to develop a shared definition of creativity within an educational context.

The second attribute that links to the syllabus's aspirational learning outcome statements is self-determination. Joan and Mai each deem as extremely significant a number of statements linked with self-determination, including the development of critically literate citizens; developing creativity by promoting curiosity and initiative; developing question posing using real life learning; developing self-determination; and individuals who provoke alternative ways of seeing thinking and doing. Craft's (2013) definition, as presented in the codebook, aligns self-determination with an individual's autonomy to make choices that shape their learning and identity. It is connected with innovation and the decision making process leading to novel creative outcomes. The General Japanese syllabus document (QCAA, 2019c), the participants, and Craft (2013) all align in recognising the link between self-determination and question posing to equip students to innovate, making decisions about their learning and identity. Joan's and Mai's strong support for creativity in learning is also evident in their interview data.

5.5.2 Interview Data

In response to the interview questions, the participants provide more detail about their understanding of creativity in this subject area. Joan believes creativity "was almost the backbone" of learning in Japanese. She explains that "we have to be creative in everything we do [otherwise]… our subject would not survive". Mai took a broader view saying, "creativity is about creating your life… your thoughts…everyday". Like Joan, Mai believes creativity is essential in General Japanese because "drawing on what [students] read, learn… [and] outside [the box] thinking generate[s] … ideas". Joan and Mai share with Craft (2013) the understanding that creativity is an approach to life and beneficial to learning. Joan's and Mai's responses suggest creativity provides the lens through which these participants plan curriculum for senior school students. Joan's and Mai's characterisations of creativity align with Possibility Thinking (Craft, 2013) in supporting the individual to evolve in response to everyday problems.

Joan and Mai highly value the authenticity of immersive learning in Japanese. Joan comments: "I often say… we're learning for life. [Japanese] helps to sharpen your problem solving and analytical skills". Mai explains "you imagine a strongly different culture… ways of thinking and being… to be immersed in it… it's powerful". Through the intercultural exchange promoted by the General Japanese syllabus document (QCAA, 2019c), the participants report students are exposed to a language and culture distinctly different from their own, bringing to light a diversity of new ideas and possibilities. When considering the relationship between question posing and immersion, Mai comments that "it needs the right questioning…to stimulate the furtherance of ideas. … Japanese is all back to front to English… it is really good… to elasticise the neurons… the fusion that occurs stimulates [new ideas]". The definitions presented in the codebook reveal the participants also align with Craft (2013) regarding immersion's capacity to provide a space for high cognitive engagement and fertile ground for the imagination to cultivate ideas and connect them in new ways.

Additionally, like Craft (2013), both participants highlight the importance of sensory learning in immersion, fostering self-determination and innovation. Prior to becoming a teacher of Japanese, Mai taught Music. She highlighted that affective learning is central to both subjects because it "goes through the ear, sound, symbol…

then you're creating…and expressing ideas". Coupling sensory learning with cognitive learning through imagination, has provided Mai with "the vision [for] decisions. … the development of the spiritual … heart and mind together". Mai's comments align with Craft (2013) who contends that a holistic creative learning process germinates on a spiritual or non-cognitive level through sensory experience of the world and becomes an idea in the imagination before being realised on a cognitive level to become action. For Craft and these participants, drawing on sensory, as well as cognitive, experiences of the world is an important part of creative innovation.

Like Mai, Joan also values sensory experience in immersive learning in Japanese. She describes an excursion she organised for her senior students in lieu of a trip to Japan. The senior students participated in a yoga lesson led by two native speakers, immersing them in the Japanese language. Joan reports that "the students [said] they loved … a totally new perspective on another culture … they weren't shy to engage with the ladies. … I believe that results from what we do in our classes". Joan's illustration highlights the significant combination of sensory experience through listening and kinaesthetic involvement with cognitive engagement, through critical and creative thinking in an authentic intercultural experience for opening new pathways in senior student learning.

Joan and Mai both suggest the importance of authentic creative learning in Japanese is further reinforced by the new approach to assessment tasks in the current Japanese syllabus (QCAA, 2019c). Now, students complete integrated assessment tasks, combining reading with writing and speaking and listening. Joan enthuses "that's fantastic because that's how languages work. … we can't speak without listening… they go… together". Joan adds that the syllabus ensures internal assessment "activities and tasks are developed to fit with the student's life experience" and opportunities to provide a personalised response. However, the extended writing task for the external exam in 2020 used the unfamiliar scenario of applying to be a reality television star in Hawaii. Joan remarks: "we thought, most of our kids haven't done a job application before … how many of our kids want to be a reality TV star? That wouldn't even be on their radar". Joan expresses dismay that the senior external exam did not provide a scenario that authentically reflected her students' life experience. Joan feels authentic learning experiences are paramount to the

development of students' creative capacity. Joan extrapolates that "there are so many opportunities out there. … languages doesn't push you into [particular] careers anymore". Joan promotes authentic learning in Japanese to cultivate students to live the syllabus's aspiration of expanding "horizons and opportunities as national and global citizens" (QCAA, 2019c, p. 1).

Mai concurs with Joan and the senior Japanese syllabus (QCAA, 2019c) about authentic creative learning as critical to grow self-determination in her students. Mai affirms that "we can make kids aware [of their agency] … I say to them, is it positive? Is it within your power"? She provides an illustration: "one … girl had a powerful experience going to Japan [on a school trip] … it influenced her Art. …I sense the powerful growth… that's part of her education as a [person]". Mai's illustration suggests authentic, intercultural experiences are supporting senior student personal growth.

Authenticity of learning is central to Craft's (2013) Wise Humanising Creativity, empowering students by exposure to diverse views and values to produce humanised, ethical responses for the common good. Intercultural exchange also provides new ideas and fresh eyes on the individual's own culture. Craft (2013) cites Chappell et al. (2011) to promote 21st century education that "thoughtfully, diligently and creatively" develops and empowers individuals who enhance "[themselves] . . . and their communities [to] thrive socially and spiritually" (p.128). The theorist (Craft, 2013), the General Japanese syllabus (QCAA, 2019c), and the participants endorse authentic, creative learning experiences to develop senior students who can innovate possibilities for human flourishing.

5.6 Mathematics

Mathematics is the fifth learning area included in this analysis. The subjects included for this learning area are General Mathematics, Mathematics Methods, and Specialist Mathematics. The Mathematics learning area Rationale statement affirms "Mathematics is creative, requires initiative and promotes curiosity in an increasingly complex and data driven world" (QCAA, 2018h, p. 1). Mathematics primarily develops individual's creative capacity to tackle the complexity of life through question posing. Students develop confidence as innovators using real world problems and learn to transfer skills and ideas from the classroom to other contexts

for successful problem solving. The Mathematics learning area Rationale statement emphasises the development of students' self-determination in shaping their learning and identity. The Mathematics syllabus documents highlight the development of student's personal responsibility, personal and social attributes for shaping themselves, and meeting the challenges of a dynamically changing world. General Mathematics is designed for students who are not pursuing a career in a Mathematics based discipline but understand its relevance to their daily lives. General Mathematics differentiates itself from other subjects in this learning area by making specific reference to students as "future citizens… understanding analysing and taking action regarding social issues in the world" (QCAA, 2018f, p. 1). The Mathematics syllabus documents envisage a future where students are proactive and benevolent citizens using their mathematical knowledge and skill, and their creativity, to shape a future of possibilities. The three participants in this learning area are Bob and Henry, who both teach in the Independent school sector at different co-educational schools, and Keith, who teaches in a co-educational school in the Catholic school sector. Bob and Henry predominantly teach Mathematical Methods and Specialist Mathematics. Keith teaches General Mathematics.

5.6.1 Questionnaire Data

The participants agree with the syllabuses' aspirational statement, "Mathematics is creative" (QCAA, 2018h, p. 1), but feel in the context of senior Mathematics, its delivery is impeded by time constraints. Despite the time restrictions, the participants continue to find novel and innovative ways to embed creativity in their curriculum planning and delivery. Bob identifies creativity in Mathematics when students problem solve by creating "mathematical models to describe and explore scenarios, predict outcomes and reflect on the importance of assumptions". Craft (2013) believes individuals initially require domain specific tools for problem solving. Using mathematical tools to explore, predict, and evaluate connects Mathematics with the creative attributes of question posing, play, and innovation within the Possibility Thinking framework (Craft, 2000). Diverging from the other participants, Keith integrates creativity into Mathematics by using a less traditional pedagogical approach to engage his students. Keith uses pedagogical practices more familiar to the Arts, such as "rhythm and rhyme", to make difficult and uncomfortable Mathematics concepts accessible for General Mathematics students. Jeffery and Craft

(2004) recognise Keith's approach to creative problem solving as "teaching for creativity" (National Advisory Committee on Creative and Cultural Education, 1999), modelling his own creativity for "learner empowerment" (Jeffery & Craft, 2004, p. 2). Keith's use of rhyme and rhythm encourages students to use strategies they know to find answers they do not know, and to look at mathematical concepts from a new viewpoint, developing their ability to problem solve and innovate when engaging a complex world.

Question posing and risk taking were the only two attributes associated with creativity from the questionnaire's provided list recognised by all three participants. None of the participants recognise affective learning as a creative attribute in Mathematics. Bob and Henry recognise similar lists of attributes, including immersion, seeking novel outcomes, and collaboration. Bob recognises intrinsic motivation and Henry recognises innovation, play, and imagination. Again, Keith's list diverges from the other participants with a stronger focus on wise creativity and personal attributes. The lists may indicate Bob and Henry have a stronger focus in their curriculum planning on developing skills required in a pure Mathematics context, whereas Keith's focus in General Mathematics is delivering skills for student application of Mathematics skills beyond the classroom. The participants understand creativity as innovation, looking for new processes and novel and useful solutions when engaging with a technologically driven world. Predominantly, the participants prioritised cognitive skills over sensory capacities for innovation. However, like Craft (2013) and the Mathematics syllabuses (QCAA, 2018f, 2018h, 2018l), the participants' understandings of creativity include knowledge, skills, and personal attributes for solving problems using creative, personalised approaches.

All three participants understand innovation in senior Mathematics to be evidenced when students used familiar knowledge and procedures in new ways or other contexts. Henry describes "seeing mathematical problems from different angles than the norm to find solutions". Bob concurs but adds that the possibilities available are determined by "the students' level of fluency … novel today becomes normal tomorrow". The participants align with Craft (2013) in understanding innovation to be synonymous with new or novel and that, in an educational context, it is evidenced as adapted practices within a domain to suit the learner and little c or everyday creativity, developing problem solving skills.

Henry is the only participant to recognise the listed creative attribute of play in Mathematics. However, in defining the term, all the participants connect play with joy filled learning and the building of domain mastery through skill building. Bob describes individuals building "fluency through a reliance on mental strategies and physical manipulations", strengthening confidence through cognitive and sensory learning. Henry describes "using maths while doing other tasks without realising you're doing maths … for example, shopping". Henry's interpretation highlights the authentic learning approach promoted in the Mathematics syllabus's aspirations. In his interview, Henry also expressed that he understands play to include the experience of student-centred learning occurring in middle school Mathematics modules in his school, integrating fun and domain mastery. Henry uses these units to exemplify the creative learning he feels senior school Mathematics curriculum delivery currently lacks, impeding the development of students' self-determination and problem solving skills. Keith understands play as, "enjoying the subject simply for what it is", an important element to improve domain mastery with concepts students find difficult or uncomfortable. The participants align with Craft (2013), who values play to develop intrinsically motivated individuals pursuing deeper domain understanding, knowledge, and practices for pursing innovative solutions.

Like Craft (2013), the participants imply an understanding of immersive learning to be connected with play, contributing to the development of creative capacity and mathematical expertise. Bob describes "rich tasks and context based experiences… where students have time to formulate, solve and reflect". In his interview data, he elaborates on the importance of 'flow' (Csikszentmihalyi, 1996) and student success during the COVID-19 lockdown in 2020, explaining "the problem is not that [students] can't do the Maths…it's that [they're] not in the 'flow' long enough", because of the constraints of timetabled lessons. Henry agrees: "This normally occurs with assignment work where students run with it, producing work beyond their expectations". Keith concurs, describing students becoming "involved with all aspects of the topic…. so that it becomes integral to how [they] react and think". Craft (2013) and the participants share an understanding of immersion as a student-centric process of creative learning engaging both cognitive and sensory learning and requiring extended periods of time. Immersive learning in Mathematics allows learners to move into new creative problem solving spaces, adopting new

understandings and procedures into their Mathematics practices. The participants suggest students develop their self-determination as learners and shape their self-identity in relation to Mathematics.

The participants' understandings of the term character are akin to personal attributes and thinking skills necessary for problem solving. Bob describes a process of "exploration, reflection and a willingness to dialogue about models and solutions". Henry agrees, focussing on students as deep thinkers "about the subject and actually going to the abstractness of the learning". Keith also describes students "bringing themselves into a learning environment and challenging their experiences and thoughts with other ideas". The participants' understandings of the term each align with the QCAA 21st century skills description of "self-awareness and self-management" (QCAA, 2018h, p. 8). The participants reflect Craft's (2013) Possibility Thinking approach valuing creativity as a transformational process in which, over time, individuals are intrinsically motivated to grow as learners. The participants' data identifies students' development of self-determination and increasingly complex problem solving as they engage with the world.

In the Mathematics learning area, the participants agree that obstacles exist to integrating creativity into curriculum planning. Experts in teaching advanced Mathematics subjects, Bob and Henry agree that students are prevented from developing creative capacity by the substantial content coverage requirements for the external exam. Henry explains "as a teacher, I have to highly manage…learning by taking out the 'fun' stuff to meet the course requirements". Henry expresses frustration that the limited time allocation assumes all students are proficient in Mathematics from year ten. As a result, Bob explains students' self-determination is inhibited because "most students don't get to comfortably and confidently create work their proud of". Bob and Henry lament the opportunity to fulfill the Mathematics syllabus's aspiration to develop individuals prepared to innovate in a complex world. Bob observes time constraints impede the development of critical and creative thinking skills, impacting students who are "constantly up against [attaining] procedural fluency rather than higher order, and more enjoyable work". However, when asked how they would overcome the problem of time constriction, they offer a vision of integrating creative pedagogies, where possible. These participants also suggest that when the syllabus is reviewed, a scaffolded learning

approach of reducing the number of units, ensuring the topics were related, and reducing the amount of content required for the external exam would be beneficial to students and teachers. Craft (2013) and the participants concur that students need time to grasp concepts in immersive, student-centred curriculum delivery. As students do not begin with the same level of proficiency, teachers need extended periods of time to differentiate curriculum delivery, personalising the development of the students' domain expertise, confidence, and self-determination. The participants agree that a lack of opportunity for question posing, play, and immersive learning in curriculum delivery of Senior Mathematics impedes the students' development of personal attributes such as intrinsic motivation and resilience and the thinking skills necessary for innovation.

Keith's General Mathematics students are not specialising in a Mathematics-based future and often need encouragement to engage with the subject successfully. He believes the traditional procedural approach to teaching Mathematics impedes creativity. He describes the criticism he has received from colleagues who do not approve of his unconventional approach, saying "I have been told… the methods I use, especially with kids who struggle with maths…are irrelevant and have no place in the classroom". This seems to indicate a reluctance by Keith's colleagues to change their pedagogical practice to include creativity and prepare students for a dynamically changing world.

Keith, Bob, and Henry agree creativity is essential for students to grow their self-determination as learners and become innovative problem solvers in the future. Craft's (2013) Possibility Thinking framework emphasises diverse thinking and approaches, rather than procedural methods, to encourage student development of new processes and products, synonymous with innovation. Using procedural approaches, Craft argues, impedes self-determination because the learner does not choose the approach and therefore, does not shape their creative identity. The participants' data establishes the significance of creative learning in Mathematics and their belief that change is necessary in the current senior syllabus offerings to maximise student engagement and subsequent success.

The Mathematics participants experience few areas of alignment between creative attributes incorporated in Wise Humanising Creativity (Craft, 2013) and the 21st

century skills in the syllabus documents (QCAA, 2018h, p. 8). Bob and Henry predominantly recognise Critical and Creative Thinking skills related to problem solving, reasoning, reflecting, or innovation, such as identifying alternatives. Craft argues that creative individuals must combine the critical and creative thinking skills recognised here, with imagination and play in the transformational process of innovation. The participants' evidence aligns with Craft (2013) and the Mathematics Learning area syllabuses' aspirations (QCAA, 2018h) to prioritise the expansion of creative learning in Mathematics to produce agentic lifelong learners.

Keith recognises all of the listed skills for Critical Thinking and Creative Thinking such as generating and applying new ideas and seeing and making new links. Additionally, he identifies Collaboration and Teamwork abilities, including participating and contributing, and Personal and Social Skills such as adaptability and flexibility in the Units of Work in the General Mathematics syllabus. Keith's inclusion of skills linked to intellectual flexibility, diverse perspectives, and social and personal skills identify empathy and divergent thinking as important creative qualities in the subject General Mathematics. The Wise Humanising Creativity framework (Craft, 2013) and the General Mathematics syllabus (QCAA, 2018f) promote the individual's ethical understanding of the social impact of their creativity. The General Mathematics Rationale aspires for students to develop "social responsibility … and to take action regarding social issues in their world" (QCAA, 2018f, p. 1). Keith is acknowledging a broader role for creative learning in Mathematics by preparing his student to engage successfully with the world.

When the participants consider aspirational statements about student outcomes, all three indicate the development of critically literate citizens is extremely significant. Two out of three participants believe that developing students' creativity by promoting initiative and curiosity and developing self-determination is significant or extremely significant. The same proportion of participants prioritised the development of understanding, analysing, and taking action on social issues in the world and individuals who provoke alternate ways of seeing, thinking, and doing were important outcomes. These responses suggest that there is strong support for the Mathematics syllabus's aspiration to develop socially responsible citizens who value the social possibilities of Mathematics. Through her Wise Humanising Creativity

framework, Craft (2013) supports the participants in placing a high value on ethically applied creativity in Mathematics.

Bob, Henry, and Keith indicate they value authentic learning and the meaningful connection between Mathematics in the classroom and real life experience. The participants also valued personalised learning, that is, meeting each student at their current level of mathematical understanding and proficiency. Particularly as Mathematics is the foundation of scientific and technological innovation, consideration of the implications of student creativity on the community and physical world is important. The student learning outcomes highlighted by the participants also align with Beghetto's (2016) aspiration for individuals instilled with "an unshakeable sense of possibility thinking" (p. 158) to solve micro and macro problems daily. As a result, time for integrating creativity into Mathematical curriculum delivery becomes more significant to optimise learning outcomes for all into a dynamically changing future.

5.6.2 Interview Data

In their interviews, the participants representing Mathematics provided more detail about why they embraced the move to integrate creativity in their subject areas. Bob, Henry, and Keith support the understanding of creativity as an integral part of successfully engaging with life. Unlike traditional, procedural approaches to teaching Mathematics, the participants explain that creativity supports the learner to shape their learning journey as they engage with and enjoy Mathematics. Bob explains that he wants students to create "a journey that you're proud of… own it". He feels procedural approaches create obstacles for students to see the relevance of Mathematics to their lives and consequently prevent learners engaging effectively with problem solving and "tell their own story with Maths". Craft (2013) and the Mathematics syllabus's aspirational statement (QCAA, 2018f, 2018h, 2018l) support Bob's view that creativity permits students to engage meaningfully with their own learning. Keith believes self-determination through creativity is important for students, stating "Maths is essential to life" because problem solving requires students to "[come] up with a way that suits [them]". Henry agrees that creativity is essential for individuals to develop innovative approaches for engaging with the world by "taking their knowledge and skills to different areas and be able to utilise it". Aligning with Craft (2013), the participants highlight the importance of learners

developing a growth mindset and creative capacity to adapt and solve new or unfamiliar problems successfully. Personalisation of the individual's approach to learning with creativity is central to Craft's (2013) Wise Humanising Creativity, because each learner must shape their decision making using their unique combination of knowledge and experience.

All participants recognise student self-determination relies on question posing for growth. Like Craft and the Mathematics syllabuses (QCAA, 2018f, 2018h, 2018l), the participants emphasise curiosity and initiative as essential for student decision making about how to utilise Mathematics in their lives. Keith suggests this idea is particularly relevant for his General Mathematics students. He asks "How do we use Mathematics to develop our own life? We need… curiosity and initiative". Henry concurs that curiosity requires time for exploration, though he underlined that "the syllabus says… you've got to keep moving on". Keith and Henry each highlight the importance of students engaging in what Craft (2013) calls "investigative behaviour" (p. 128) to understand and use mathematical concepts enhancing their everyday lives.

For the participants, a significant inclusion in the QCAA 2019 Mathematics syllabuses is the requirement for students to use a four-step problem solving model (QCAA, 2018h, p. 14) and take responsibility for formulating or designing the problem they will solve. Students must then evaluate and verify their work collaboratively with their peers, by articulating the process and the solution they created. Bob's students collaborate to develop confidence with the process, as well as convergent and divergent thinking skills for tackling new problems and resolving them with initiative and curiosity. Bob explains, when using procedural approaches to Mathematics, students are not really problem solving because "the kids know which formula to plonk in there". Bob notes that students are provided with the variables required and so learners were denied the opportunity to engage with Mathematics by creating their own processes. However, as Bob explains, "the formulate frame … gives students ownership of the starting point …and the places they are going. … it's made the questions more enjoyable, more challenging". Keith concurs: "In all Maths now …we're wanting a personal response to …solving a problem". Bob and Keith draw clear links between self-determination and question posing within the context of creativity in Mathematics, preparing students to use their Mathematics to become innovative problem solvers.

Participants expand on their questionnaire data, detailing the importance of connecting question posing with play and immersion for developing students' ability to innovate. Henry believes senior students both play and experiment; that students play to "learn stuff" and then experiment by asking "how can I use this"? Put another way, Henry suggests that senior students play to familiarise themselves with new concepts or to build their domain expertise and then experiment in order to innovate and problem solve.

The three participants all express the view that extended learning time is necessary to develop innovative individuals. Within the bounds of timetabling, the participants report combining play, immersion, and question posing to support student development of knowledge and skills sufficiently to allow creativity in Mathematics. Henry observes his students struggling to grasp concepts, preventing them from innovating by "linking ideas…. understanding there's a diagram that links with an equation that links with a skill [and] that things can be looked at differently to come out with [a solution]". Keith and Henry agree, understanding innovation to be adapted learner knowledge from one context to another. Keith commented "if they can understand the rules, they can appropriate the rules… and modify them to suit the next situation". Craft (2013) and the Mathematics syllabuses (QCAA, 2018f, 2018h, 2018l) promote the importance of a learner's grasp of concepts to become innovators. The participants illustrate the power of educational innovation to personalise curriculum delivery and develop learner's personal responsibility for their learning outcomes.

5.7 Sciences

Sciences is the sixth learning area included in this analysis. The subjects included in this learning area are Biology and Chemistry. The Sciences learning area aspires to empower students as critically literate citizens and innovators through question posing. Students learn how scientists use inquiry skills and work collaboratively towards more reliable scientific knowledge and new solutions. Critical and creative thinking skills empower senior Science students to become better informed citizens who make rigorous, evidence based decisions as part of the community, pursing solutions to current issues and enhancing the wellbeing of other people and the environment. The Sciences syllabus documents (QCAA, 2018a, 2018b) are underpinned by the Science as Human Endeavour (SHE) framework, cultivating

students' appreciation for the impacts of science and fostering decision making skills to produce informed, responsible, and ethical outcomes for the community and the physical world. The Sciences Rationale statement argues stewardship for the impact of scientific endeavour is a collaborative pursuit "essential for the advancement of science, technology, health and society in the 21st century" (QCAA, 2018b, p. 1). The Sciences is represented by two participants: Alex who teaches Biology in an Independent co-educational school and Marie who teaches Chemistry in a co-educational Catholic school.

5.7.1 Questionnaire Data

When considering understandings of creativity in Sciences, Alex's and Marie's questionnaire responses relate to the development of student creative capacity through personalised learning involving self-determination, question posing, and play. Alex understands creativity in Biology to be "the opportunity for students to explore and express learning in a variety of modes". Like Craft (2013), Alex recognises the inclusion of creativity involves personalised learning that allows individuals to develop their preferred learning style and growing their ability to problem solve effectively.

Like Alex, Marie promotes creativity as a welcome inclusion for Science, acknowledging that Chemistry can be dry and prescribed. Marie recognises in the new syllabus document the "scope to explore [beyond] the curriculum and build student's [creative] capacity". Marie highlights the possibilities for STEM subjects to move away from the prescriptive pedagogies of the past and allow students to produce more individualised and meaningful responses to problem solving. The participant, therefore, aligns with previous research (Beghetto, 2016; Craft, 2013; Cremin, 2009; Jeffery & Craft, 2004; Runco, 2016) and the Chemistry General Senior syllabus (QCAA, 2018b) in identifying the critical role played by teachers who consciously build students' creative capacity, developing them as Possibility Thinkers who solve large and small problems.

Considering the list of attributes associated with creativity on the questionnaire, Alex recognises all of the attributes, except play which is also not recognised by Marie. In Biology, Alex understands creativity to encompass knowledge, skills, and personal attributes including, but not limited to, "curiosity, imagination and resilience". The

attributes highlighted are required to achieve the Biology General Senior Syllabus's (QCAA, 2018a) aspiration of developing individuals who can "challenge current scientific knowledge" and innovate "in the pursuit of more reliable knowledge" (QCAA, 2018a, p. 1). Alex's inclusion of "collaboration and ethical motivation" in his understanding of creativity aligns with Craft's (2013) intentions for the Wise Humanising Creativity framework, developing student creative capacity for the collaborative development of ethical solutions to human and environmental problems.

In Chemistry, Marie recognises creative attributes linked with question posing, exploration, and wise creativity, reflecting the aspirations of the Chemistry syllabus document (QCAA, 2018b). Marie's list is differentiated from Alex's by not recognising imagination, aesthetic learning, innovation, the pursuit of novel outcomes, resilience, and intrinsic motivation. The differences between the participants' lists may indicate that Alex is focussed on developing students to apply skills beyond the classroom, whereas Marie's selection arises from her focus on the objectives of the SHE framework, rather than an indication she believes these creative attributes are irrelevant to learning in Chemistry. Marie's questionnaire data suggests her understanding of creativity correlates with Craft (2013), by aspiring to develop Chemistry students' creative capacity for making a positive contribution to their field and the world at large.

The participants provide definitions for a selection of terms commonly associated with creativity as they are understood in Sciences. The participant responses for the term innovation focus on new outcomes from modified processes, coinciding with the Biology and Chemistry syllabus documents (QCAA, 2018a, 2018b) and delineations of educational innovation made by Craft and Chappell (2016), as presented in the codebook. Alex understands innovation to be "the opportunity to re-design experimental process to achieve new outcomes". Similarly, Marie describes innovation as focussing on "Science as Human Endeavour – green chemistry". Both participants focus on a transformational process of critical and creative thinking, which results in new solutions to problems in the pursuit of more reliable science. Alex's understanding of innovation as the generation of new knowledge ideas, which manifest as new practices within a domain, aligns with Craft (2013) and the Biology

General Senior Syllabus document (QCAA, 2018a). The participants elaborate on the impact of creativity and innovation on the development of students as scientists.

Marie's understanding of innovation involves new ideas and practices, aligning with the SHE framework that underpins the Science Senior school syllabus documents (QCAA, 2018b, p. 13). Significantly, the SHE framework within one of the Units of Work focusses on green chemistry, providing an ethical intention for innovation in Chemistry and its impact in the world. Additionally, alignment exists with Craft's (2013) Wise Humanising Creativity by considering creativity's impact on other people and the environment.

Neither Alex nor Marie recognises play as a creative attribute in the previous question. However, when defining the attribute, Alex and Marie, like the Mathematics participants, express an understanding of play as related to fun in learning and the development of domain mastery. The participants recognised play as exploration, investigation, and question posing. Alex describes "the opportunity to explore new ways of understanding science without fear of failure". Alex's definition connects with Craft (2013) in acknowledging a link between the exploratory activity of play and risk taking. His response implies that play provides a safe context for student learning while they pursue a deeper understanding of their domain, and the improvement of scientific understandings resulting from innovation.

Marie finds play more difficult to identify within the context of Chemistry but acknowledged her students "play with molymods and then test me to see if it is real". Marie explains that molymods are plastic balls used to represent molecules that can be combined to produce representations of chemical elements. Her example indicates that students enjoyed engaging their curiosity and experimenting to build expertise and interacting with her as a domain expert to test their knowledge of chemical elements. Marie points to play linking with imagination for the transformational process of innovation. Her response aligns with Craft (2013) and Alex, understanding play is linked with risk taking in a safe environment to provide freedom for learning without the consequences of failure.

Like Craft (2013), Marie and Alex highly value immersive learning. The participants believe immersion significantly contributes to the development of student domain mastery through extended exploration, resulting in deep learning. Alex understands

immersive learning to be “time allocated to allow students to explore related ideas continuously for extended periods of time”. Similarly, Marie exemplifies immersion by referring to her students’ engagement with “PhET simulations prescribed for classrooms”. PhET simulations are interactive, digital simulations in Science and Maths, developed for classrooms by Nobel Laureate Carl Wieman at the University of Colorado (PhET simulations, 2021). As previously evidenced in other learning areas, Alex and Marie parallel Craft (2013) by describing a student-centred learning context, supported by teacher facilitation and characterised by deep concentration and high cognitive challenge. Craft (2013) argues that engagement with immersive learning provides students with the time and space to make new connections between ideas necessary for innovation and problem solving.

As seen in Humanities and Social Sciences, when considering affective learning, both participants provide definitions aligned with effective rather than sensory learning. Alex describes the “choice provided to students in the selection of immersive learning tasks”. Marie explains that “students are still developing in this frame so their interests with Chemistry are also not developed”. In both cases, the participant points to students developing their expertise within the context of science and their self-determination as learners. Craft (2013) identifies the process of self-determination in students as an important part of the transformational process of innovation.

Alex’s understanding of the term character aligns with the QCAA 21st century skills framework description of a sense of “self-awareness, open mindedness and fair mindedness” (QCAA, 2018a, p. 9). In Biology, Alex understands character as “Facilitating a growth or change in understanding that relates to the development of a worldview”. Alex’s response implies a sense of developing students’ self-determination by shaping the connections they perceive between their classroom learning and its manifestation in the real world. Alex describes students undertaking ‘journeys of becoming’ (Chappell et al., 2012).

Marie defines character in Chemistry as “curiosity … under SHE”. Marie clarifies her definition in her interview, explaining that, in science, character is understood as behaving ethically by considering the impacts of creative output on the world, a key concept included in the SHE framework and dubbed wise creativity by Craft (2013).

Like Alex, Marie's understanding aligns with the 21st century skills framework conceptualising "self-awareness" and the Personal and Social Skill of "ethical understanding" (QCAA, 2018b, p. 9). The participants' responses highlight their commitment to creativity in the Sciences, delivering learning outcomes aligned with QCAA 21st century skills framework (QCAA, 2017b) mandated for all subject areas.

Both Alex and Marie perceive obstacles to integrating creativity within their respective Science subject areas. In Biology, Alex reports "the tension between creative objectives and content delivery is an obstacle…the assessment and content load… is difficult to manage effectively in the time available". Marie agrees, commenting that, in Chemistry, "the curriculum is so packed with knowledge, it is difficult to provide opportunities for creative learning. My current students do not have the capacity … as they are snowed under with work". Like the participants representing Mathematics, Alex and Marie promote a reduction in the number of topics for coverage in a scaffolded learning plan to address the time restrictions. Both Alex and Marie, like Craft (2013) and participants from other learning areas including Mathematics, value extended periods of learning time to consolidate understanding and grow students' creative capacity to meet new challenges. The participants' responses suggest the tension they experience between high stakes testing and creative learning experiences impacts their perception of the alignment between creativity and the QCAA 21st century skills (QCAA, 2017b) with respect to student learning outcomes.

In the table listing some of the 21st century skills underpinning the senior syllabus documents, both Alex and Marie recognise aspects of Critical Thinking in all sections of the syllabus documents, except, in Chemistry, Marie does not recognise the development of intellectual flexibility. This might result from the aforementioned heavy content and assessment load and subsequent time restrictions. Critical thinking skills are identified by Craft (2013) and the syllabus documents (QCAA, 2018b, p. 9), as a significant part of the scientific inquiry process for innovation.

Alex and Marie identify aspects of Creative Thinking in the Units of Work, though Marie does not recognise these qualities in the Assessment Tasks for Chemistry. Interestingly, in Creative Thinking, she does not recognise innovation, curiosity, or generating new ideas. These exclusions reinforce Marie's belief that senior students

are not encouraged or provided with sufficient time to exercise creative skills, limiting their ability to build creative capacity. Craft (2013) identifies curiosity and the transformation process of innovation and generating new ideas as critical for moving individuals into new creative spaces while pursuing novel outcomes, both within this domain and in life.

Participants were asked to consider a series of syllabuses' aspirational statements and highlight their priorities for student outcomes. The participants deem as extremely significant outcomes such as the development of critically literate citizens with a sense of connection with others and with authentic real life learning. Alex and Marie also indicate as extremely significant the need for students to become individuals who provoke alternative ways of seeing, thinking, and doing and developing self-determination. These priorities correspond with the participants' shared understandings of creativity that focus on self-determination and innovation.

In line with the Science syllabus documents' aspirational statements (QCAA, 2018a, 2018b), Alex and Marie confirm the importance of Collaboration and Teamwork in the pursuit of reliable knowledge in Science, by recognising all the listed skills in each part of creative learning in their subject area. These skills include, but are not limited to, recognising and using diverse perspectives and participating and contributing. In the Wise Humanising Creativity framework, Craft (2013) advocates for collaborative learning, encouraging students to combine their strengths and develop the best possible solutions to problems in a challenging, dynamically changing world. The participants also deem as extremely significant aspirational statements related to posing questions, such as promoting curiosity and initiative, developing creativity using real life learning as part of scientific innovation and enhancing creative outcomes for the community and environment.

Correlating with the Science syllabus documents (QCAA, 2018a, 2018b), the participants recognise, in both subjects, all aspects of Personal and Social Development in the Units of Work. These aspects include qualities such as ethical understanding, adaptability/flexibility, and citizenship. These attributes make an important contribution to innovation and compliance with the SHE framework concerning the ethical impact of science in the world. As Craft (2013) promotes in the Wise Humanising Creativity approach, these teachers are prioritising the

development of their students as ethical individuals who take responsibility for the impact on the world of their creative output. This finding is reinforced by the aspirational statements related to wise creativity that the participants deemed significant or extremely significant. The statements included developing stewardship for the common good; developing an awareness of personal, social, and ethical implications; and taking action regarding social issues in the world.

Alex's and Marie's commitment to creativity as an approach to life is evidenced in their responses about lifelong learning. The participants agree or strongly agree that individuals need to be equipped with creativity to meet real world challenges, now and in the future. As a consequence, they both agree or strongly agree that, in their lesson planning, they consciously consider the development of creative knowledge, skills, and attributes in their students. Teachers who consciously teach for creativity are incredibly important for individuals to develop a Possibility Thinking approach, according to Craft (2013).

The two participants agree that through their engagement with creative learning in this learning area, senior students are encouraged to take risks and seek novel outcomes. However, Marie also disagrees that the current QCAA suite provides opportunities for schools to develop their students creativity effectively. This data reinforces her conviction that curriculum delivery under this Chemistry syllabus is prescriptive and crowded. She desires more learning time for exploration and honing inquiry skills. Marie has shared her commitment to the SHE framework (QCAA, 2018b, p. 13) as the source of creative learning within the sciences. Significantly, the framework is not assessed and this could exacerbate the dilemma for teachers choosing priorities between high stakes testing and creative learning.

5.7.2 Interview Data

For the Sciences Senior school syllabus documents (QCAA, 2018a, 2018b) and the participants, a central concern for creativity is the social impact of science on a 21st century world. As Biology "involves life", Alex argues that Biology's next challenge is "the responsible use of science with [the] issues we're facing". As an educator, Alex feels a responsibility for fostering senior students as stewards of their creative output because "if we don't… we are going to compound the issues we have already brought to bear in our world". Marie shares this concern and consequently has begun

planning for the implementation of the Chemistry syllabus using the SHE framework (QCAA, 2018b). The SHE framework aims to develop senior Science students' awareness of "the nature and development of science… and its use and influence on society" including "beneficial… or harmful… unintended consequences" (QCAA, 2018b, p. 13). Focussing on the real world application of curriculum concepts, Marie observes that studying green chemistry and the elimination of hazardous waste highlights for students: "I've actually got to do something about this… how can I help the world"? In Wise Humanising Creativity, Craft (2013) advocates for educators to shape and empower learners as future citizens to use their creativity beneficially for others and the environment. Beghetto (2016) agrees, arguing that young citizens need to be creatively agentic and move towards "hopeful futures" (p.159).

Marie and Alex believe senior students need the confidence to tackle problems they have not seen before in their own way. Marie identifies what she sees as a serious problem in developing student creative capacity, commenting that "the kids will see a question: it's too hard, move on". Marie believes posing questions empowers her students because "problem solving will… get you on in life". Marie encourages students to be question posers and innovators by using authentic examples of "how scientists have been creative", such as Nobel Prize winners for Chemistry in 2020. Marie comments that an authentic approach to curriculum delivery "fuels a fire… what if we do this"? Marie's consideration of curriculum planning cultivates her students' ability to pose and respond to questions through authentic learning, developing their self-determination as ethically driven lifelong learners.

Alex agrees with Marie that "a lot of creativity comes back to questioning". Alex is convinced questioning is particularly important in the 21st century because daily life in a technology driven world requires it: "you have to be able to absorb all the information… and … interpret our world through different lenses". Like Marie, Alex values an authentic approach to empowering students through the real life application of inquiry for their self-determination as lifelong learners and critically literate citizens. Craft (2013) and the participants recognise students' self-determination is developed through inquiry, or question posing, when engaging with the world. Students require the capacity for problem solving and innovation to develop and

refine solutions now and also in the future, particularly for problems that are yet to eventuate.

Marie and Alex value that the link between posing questions and play manifests as exploration in an "as if space" (Craft, 2013, p. 128). However, the participants share the view that, in Science, students experiment rather than play. Alex explains that playing connotes "people stepping outside of boundaries freely without worrying about mistakes". Marie adds that scientists are "very risk averse… the chance of hurting [someone is] quite high". Alex recognises imagination as significant in the exploratory process where students "kind of forecast in their minds how they could get different outcomes". Alex's observation is in harmony with previous research from Craft (2013) and Bohm and Peat (2010) who identify imagination as critical to mentally solidifying an idea, before committing to action in the process of scientific innovation. The participants agree the creativity of trial and error is an important experimental phase of innovation, empowering students to break new ground and develop their creative problem solving abilities for every part of their lives.

In addition to the content load and the high stakes external exam, Marie feels exploration is inhibited by a lack of student domain mastery which raises safety concerns and "because kids are not natural risk takers". However, Marie concedes that the curriculum fosters some risk taking, through the SHE framework "like research investigations, [taking] kids into really new spaces". Marie and Alex believe a critical element of teaching risk taking in the Sciences is specialist teachers with deep domain knowledge. Referring to new staff who were not Chemistry specialists, Marie commented "they are going to want to teach out of the book… they will be very confronted… that's not how we roll". Alex agrees teachers need to have deep domain knowledge for students to have the freedom to explore safely, otherwise "they're going to be afraid… to let the student do that". Craft and Chappell (2016) recognise the student-centred learning process, described by the participants as educational innovation, a significant process facilitated by expert teachers for students developing creative output that is beneficial to the community.

Marie and Alex utilise understandings of educational innovation (Craft & Chappell, 2016) when they describe students transferring scientific inquiry skills from the classroom to the world outside of the classroom. Marie depicts students transferring

scientific inquiry skills to careers in Medicine and Law. She explains that "the kids who are going to be doctors… need the skills of diagnostics". For students pursuing Law, she observes they would need "the skills of process[ing] the evidence and present[ing] the case". Likewise, Alex recognises students developing as critically literate citizens by applying question posing skills from Biology in other sectors of their lives. He observes that in the 21st century "it's about being literate… being a very critically reflective person, whatever your job might be". Craft (2013) acknowledges innovation may manifest as the adaption of current practices within a domain to suit the learners or be transferred to engagement with the world to build possible futures.

5.8 Technologies

Technologies is the seventh learning area in this analysis. The learning area includes the subject area of Design. Through Design, the Technologies learning area uses "the problem-based learning framework… to solve complex, open-ended problems… using convergent and divergent thinking… and exploit innovative ideas" (QCAA, 2019b, p. 1). The Design syllabus highlights a distinctly human-centred focus for innovation and aspires to equip students with design thinking to imagine creative solutions for "human needs, wants and opportunities" (QCAA, 2019b). The progression of curriculum units empowers students to work independently and collaboratively with a diverse range of clients, addressing a variety of economic, social, and cultural issues. Later units specifically focus on human-centred and sustainable design, engaging students as empathetic problem solvers. Design seeks to shape intrinsically motivated students, possessing the resilience and persistence to engage with the iterative design process, experimenting and risk taking in pursuit of the best solutions. The result is agentic individuals who create "possible futures through Design". There is one participant in this data sample, Elle, who teaches in a State High School.

5.8.1 Questionnaire Data

Within the context of Design, Elle identifies creativity as "designing buildings, objects, experiences which requires imagination and creativity". Elle's definition suggests that, in Design, creativity is aligned with innovation and using imagination and other creative attributes to generate a product or outcome fit for task. Elle's understanding of imagination in the process of creativity aligns with Craft's (2013)

interpretation of ‘as if’ thinking (p. 128), encouraging students to perceive problems from new perspectives and conceive possible solutions. Craft (2013), the Design syllabus, and the participant correlate in their understanding of imagination as the impetus in creativity for developing valuable outcomes.

The Design syllabus Rationale states the subject is “human centred” and the successful completion of a task requires a solution for a problem that satisfies “the needs, wants or opportunities of the client” (QCAA, 2019b, p. 1). Elle’s understanding aligns with Craft, Cremin, et al. (2008) who describe educational innovation as students “playfully connecting ideas triggered…by adult provocations” (Craft & Chappell, 2016, p. 408). Later in her questionnaire, Elle defines innovation as “novel ideas” implying associations with new, rather than a modification or adaption, as in other learning areas.

Elle’s questionnaire responses provide further insight into her understanding of innovation. When presented with a list of attributes often associated with creativity, Elle recognises imagination, question posing, affective learning, pursuing novel outcomes, curiosity, ethical motivation or empathy, and collaboration. Elle’s responses highlight that, in a Design context, she associates creativity with innovation as a problem solving process resulting in new outcomes that meet the client’s needs. Elle does not recognise play, immersion, risk taking, resilience, intrinsic motivation, or persistence as creative attributes in Design. Craft (2013) and the Design syllabus (QCAA, 2019b) also connect the transformational process of innovation with question posing, empathy, and collaboration. As presented in the codebook, Craft (2013) characterises question posing as “investigative behaviour” (p. 128), using convergent and divert thinking and being open to possibilities for new solutions, an essential component of innovation. In recognising empathy as a characteristic of creativity, Elle aligns with Craft’s (2013) understanding presented in Wise Humanising Creativity, where empathy is prioritised as a personal attribute for solving “human centred needs, wants and opportunities”, the focus of the Design syllabus (QCAA, 2019b, p. 1). The Wise Humanising Creativity framework (Craft, 2013) also promotes collaboration in problem solving to draw on the strengths and diverse perspectives within the group to devise the best possible solution for the stakeholder.

Most of the listed creative attributes not recognised by the participant are personal qualities. These include intrinsic motivation, persistence, and resilience. The omission suggests that the participant's concept of creativity in Design centres on skills and knowledge, rather than the personal development of the individual. Elle explains in her interview that she believes persistence, resilience, and intrinsic motivation are important traits for individuals, but are developed by other influences, such as family or in co-curricular activities, rather than through the curriculum. Examination of the codebook reveals that researchers in creativity identify personal attributes such as resilience, persistence, and intrinsic motivation as distinctive features in creative individuals. These attributes are necessary in the transformational process of Possibility Thinking underpinning Wise Humanising Creativity (Craft, Cremin, et al., 2008; Gardner, 2008b; Runco, 2016).

The participant data presented here suggests Elle's conception of creativity aligns with innovation in the Design subject area. Among the qualities Elle did not recognise as attributes of creativity in Design were play and immersion. However, in the next section of the questionnaire, Elle offers definitions and understandings for these and other terms associated with creative learning, as they are understood in Design. As presented in the Literature Review (chapter 2), understandings of these terms are commonly prone to slippage across domains. The list of terms includes play, immersive learning, affective learning, and character. In Design, these creative attributes acknowledge innovation and social connection as central processes of learning.

Design students are exposed to authentic learning with the attribute of play when working with individuals and groups within the community. Elle defines play as "being creative and having few boundaries". Her definition points to a sense of freedom and autonomy for creative individuals in the way they respond to the client's needs. Elle's articulation of play reflects Craft's (2013) definition of students working "as if" (p. 128) they are interacting with clients in the workplace. In her interview, Elle explains that, in Design, she believes terms such as experimenting, were more appropriate than play. Elle associates the process of play with kinaesthetic subjects like Physical Education and Drama, because "play has no boundaries … you are exploring". The key terms collated from the literature presented in the codebook highlight an association between play, exploring, and experimenting. Slippage in the

understanding of the term play is problematic for conceiving a common definition of creativity and its attributes for all learning areas. Craft links play with immersion in her work on Possibility Thinking (2013).

Elle understands immersive learning in Design as "being surrounded by ideas, information [and the] needs of the client". Elle's understanding of immersion resonates with Craft's (2013), who also describes a depth of engagement and a connection to play in the exploration of ideas and information. Like Craft, Elle's definition implies the presence of high cognitive challenge. However, the recognition of sensory experience in immersion is not clearly indicated by Elle, as it is by Craft (2013). It may exist in the form of empathy, a quality previously highlighted by Elle as an important element of student and client interaction. Elle's data suggests that, in Design, immersion linked with play provides the opportunity for students to consider carefully the most authentic solution for the client's needs.

Elle shares her understanding of the term character, which is contained in the Personal and Social skills of the QCAA 21st century skills framework (QCAA, 2017b) underpinning the syllabus suite, though it is not a term used by Craft (2013) in the Wise Humanising Creativity framework. Elle understands character to describe "personality traits or traits of an object or building". Elle's understanding of character does not clearly align with the understanding provided by the 21st century skills: "resilience, self-awareness, mindfulness, open and fair mindedness, ethical understanding" (QCAA, 2019b, p. 7). Within the context of Design, resilience may be identified as a personality trait, but Elle's definition does not specifically indicate a sense of self-awareness or ethical understanding. Craft (2013) does value the personal attribute of resilience in the transformational process of innovation in Possibility Thinking. However, there appears to be slippage in the understanding of the term character between Craft, the Design syllabus, and the participant. Slippage in the understanding of this term is also apparent across learning areas, problematising the concept of a common definition of creativity within an educational context.

Elle's appreciation of creative learning and its positive impact on student outcomes is evident in her questionnaire responses examining a range of syllabus aspirational statements and the alignment between creative attributes and the QCAA 21st century

skills (QCAA, 2019b). In each section of the Design syllabus, Elle recognises Creative Thinking indicators such as generating and applying new ideas and identifying alternatives. Elle rates the development of individuals who provoke alternative ways of seeing, thinking, and doing and developing question posing using real life learning as extremely significant outcomes for creativity in learning. Elle's data again points to her understanding of creativity in Design manifesting as innovation. To become innovative and enterprising people, individuals need to step away from the conventional and generate alternatives providing novel and authentic solutions to problems. In the Possibility Thinking framework, Craft (2013) identifies experimenting with novel approaches as risk taking and aligns it with innovation. Risk taking in innovation, Craft (2013) believes, allows individual's to exercise their independence, developing the personalised solutions Design requires. As students step outside their comfort zone, Craft (2013) argues, risk taking moves them to a new level of creative capacity, enriching future creative outcomes.

Design values fostering Collaboration and Teamwork skills and personal attributes for constructive interaction between the designer and the community (QCAA, 2019b). Within the list of indicators for Collaboration and Teamwork, Elle recognises the presence of interacting with others and community connections in the Units of Work and Assessment Tasks. Both of these qualities are integral parts of developing a warm rapport between designer and client, facilitating the process of ascertaining the client's requirements and restrictions to meet their needs, a central objective of the syllabus's aspirations (QCAA, 2019b).

The statements Elle chooses from the Personal and Social skills list highlight the significance of the relationship between the designer and client for a successful design process. Elle rates as extremely significant learning outcome statements highlighting skills for quality relationships, such as developing a sense of connection with others and authentic learning; developing an awareness of personal, social, and ethical implications and impacts of their solutions; and understanding, analysing, and taking action regarding social issues in the world. Aligning with Craft's (2013) Wise Humanising Creativity and the Design syllabus's aspirational statement (QCAA, 2019b), Elle highlights the importance of "human centredness" in Design by ensuring ethical outcomes for stakeholders from creative thinking and action.

Elle's questionnaire data reveals she understands creativity to be innovation. In Design, Elle values student development of the skills, knowledge, and attributes required for transformational problem solving when engaging with a 21st century world. In Design, connections with diverse communities are an essential component of creativity. Central to Design is the students' awareness and ability to improve the lives of others, individually, locally, and potentially globally, developing practical, beneficial solutions to current and emerging problems.

5.8.2 Interview Data

In her interview, Elle elaborated on her understanding of creativity in Design learning. Elle states that "Design is all about… solving problems, coming up with ideas to solve a problem…for the stakeholder". The Design students in her school engage with nursing home residents and community groups, such as Surf Lifesaving Clubs, to solve what she described as "open-ended and quite complex" problems for stakeholders. Elle believes the community connection is important because "it definitely makes [the learning] more authentic". Elle highlights question posing and responding as an integral process for problem solving because it represents, "critical thinking in its highest degree". The Design process, using critical and creative thinking, progresses through four stages to problem solve. The four stages are: "exploring needs wants and opportunities; developing ideas and design concepts; using drawing and ... prototyping skills; evaluating ideas" (QCAA, 2019b, p. 1). Elle emphasises the design process is iterative and questions lead to more questions or problems to be solved. She feels that restrictions encountered in the exploration process enhanced students' creative capacity because "if you have a restriction, then you have to think again to solve that problem, so there's more creative… and critical thinking". The codebook highlights Craft (2013) describes question posing and responding as asking 'what if' (p. 128) in as many different ways as possible to reach a solution. Students continually refine the questions they ask their stakeholders and shape their design to pursue a new solution that specifically meets the client's requirements.

Elle clarifies her understanding of play in conjunction with question posing and responding in the process of Design. She feels the term experimenting is more appropriate for the process in STEM subjects. Elle believes Design students need to experiment in order to devise as many solutions as possible. According to Elle, the

process requires “deep thinking”, which Craft (2013) identifies as immersion. She also states that “imagination is extremely important” to the experimentation process because the designer “has to see that vision” to be able to innovate a completely new solution, a process she believes belongs exclusively to Technologies. Wijngaarden et al. (2019) explain how the term innovation originated in technological and economic research, perhaps influencing Elle’s perception. Elle connects innovation and self-determination. She illustrates: “I’ve seen two kids from different backgrounds come up with different solutions to a problem… both of them great solutions… but very different. … that shapes your life”. Elle’s comments suggest that an individual’s life experience can significantly impact the solutions they devise.

For Elle, risk taking and resilience are inextricably linked in Design. Risk taking in Design, Elle explains, “is actually encouraged, and… leads to better results because you’re able to come up with more solutions”. She believes “to be a risk taker, you have to be okay with failure and okay with… getting … back on your feet again”. She believes a student’s resilience level is influenced by their home environment: “if you have parents who allow you to fail and… get back on your feet again… [you’ve] got more chance of succeeding in a subject like Design”. Elle highlights the importance of risk taking and resilience for effective problem solving in Design as the basis of student academic success. Craft (2013) also promotes the importance of risk taking and resilience in creativity, pointing to the necessity for individuals to ‘go to the edge’ (Craft, 2013, p. 128) to create personal and professional growth.

Another significant attribute for student success in Design is the development of empathy to facilitate effective communication and collaboration with the client. Elle observes “the ones who are empathetic, who can put themselves in the shoes of the stakeholder, will end up with a better design and … better results”. Elle also highlights the need for students to be persistent and intrinsically motivated to achieve academic success with the best design for the stakeholder. Elle aligns with Craft (2013) and the Design syllabus Rationale (QCAA, 2019b) regarding the necessity to develop students’ social and personal skills, including empathy and resilience, creating innovators who positively contribute to the community.

Elle’s data suggests that she embraces the “human centred” aspiration of the Design syllabus (QCAA, 2019b, p. 1), to deliberately shape student learning that produces

life enhancing outcomes for students and their stakeholders. In her Wise Humanising Creativity framework, Craft (2013) promotes education's role in shaping agentic, creative individual's focussed on the common good. For Craft, considering the outcomes and impact of the innovation process on others and the world is both a humanising and wise conception of creativity for an educational context. Design shares with both other learning areas and with Craft (2013) understandings about the importance of creativity in senior school learning, providing some common ground for a universal definition of creativity in an educational context.

5.9 The Arts

The Arts is the last of the eight learning areas included in this analysis. The three General syllabus subjects included in this analysis are Drama, Music, and Film, Television and New Media. The Arts subject areas are underpinned by an inquiry based learning approach. Students' critical and creative thinking skills are developed by exploring their personal experience of life in relation to the world. Students' cultivate curiosity through the exploration of past artistic movements and their purposes in context and expand their understanding of the connections with contemporary ideas and practices. Developing their personal aesthetic, students link ideas in new ways, providing possibilities for future innovation, and develop as agentic and critically literate citizens, providing a voice for themselves and for others. The Arts facilitates the development of individuals' self-determination with learning and their identity in connection with the world. Pivotal to learning in The Arts is the marriage between cognitive and affective or sensory knowing in the exploration of human experience, providing deeper knowledge and understanding. Immersive learning combines imagination with convergent and divergent thinking skills, providing opportunities for personal growth and self-expression. Students in each Arts strand engage with ideas, values, and experiences in the roles of producer and consumer or artist and audience, shaping their self-awareness and the personal aesthetic in their work, while contributing to meaning making in the world. The Arts Senior school syllabus documents allude to Craft's (2013) conception of wise creativity, prioritising students' development of empathy and an appreciation for diverse viewpoints and cultural experiences. Through storytelling, senior Arts students engage with human experiences from other cultures, developing their own artistic practice and understanding as global citizens. Three participants from these

subject areas have been included. John teaches Drama in a co-educational Independent school, Jane teaches Film, Television and New Media in a State High School, and Huia teaches Music in a different co-educational Independent school from John.

5.9.1 Questionnaire Data

Huia's, Jane's, and John's questionnaire responses confirm creativity is fundamental to The Arts learning area. Like Craft (2013), these participants understand creativity as personalised, authentic learning experiences inextricably linking self-determination and wise creativity. Students develop their voice and responsibility for their creative output through interaction with peers and the world. In Music, Huia feels composition is the area where students "had the greatest opportunity to flourish [using] imagination and original ideas". However, she also believes opportunities exist for students to develop their voice in performance and musicology through their repertoire choices or the views included in task responses. In Film, Television and New Media, Jane believes, "collaboration is key" for the development of self-determination in creative output. Students are expected to develop "a personal aesthetic style" from working together to "explore ideas, learn from each other, work with other artists". Likewise, John believes Drama promotes personal growth and connections with others by requiring individuals to "look outside themselves to be someone else and somewhere else". Through creative classroom learning, the participants' data suggests Arts students are supported to develop their own voice and creative practice while connecting with the world as a source of learning and an audience for their creative output.

When defining creativity, the participants also consider the term innovation. Huia, Jane, and John correlate with Craft (2013) associating innovation with new ideas, processes, or products. Huia defines innovation as "looking at something from a new perspective… combining ideas for a novel and unprecedented outcome". Jane highlights "experimenting with new (or in new ways)". John describes, "taking the known and experimenting with the unknown". The participants' data suggests that, as part of the creative process, pursuing novel outcomes is a key priority within the Arts learning area. Their understanding reflects Craft, Cremin, et al. (2008) definition for educational innovation, as presented in the codebook.

The three participants indicate that, in The Arts, the process of creation, involving educational innovation, linked posing questions, affective learning, immersive play, risk taking, and imagination. In Music, Huia identifies composition as the dimension posing the biggest creative problems for students because "the responsibility of writing from nothing is daunting". Huia facilitates the process of problem solving and play in composition by providing starting points and structures which build young people's domain mastery and opportunities to innovate for personalised creative solutions. Huia encourages students to "borrow ideas" from studied work, such as instrumentation or chord progressions, to understand how to shape the device for their own compositions. Craft (2013) and Huia both recognise translating ideas into the student's work requires imagination to trial the idea before committing to an action. Huia laments that, under the current Music syllabus, "there is not enough time spent in improvisation where creation is practised, and "mistakes" are "normalised". Her comments highlight the importance of combining immersive play and risk taking for producing deep understanding, stronger creative decisions, and novel outcomes from students.

John concurs with Huia, saying "it is at the core of what I teach", because creativity requires students to step out of their comfort zone. In Film, Television and New Media, Jane agrees with Huia and John that the combination of creative attributes is critical for creativity and pursuing new ways to represent perspectives in student output. These participants agree with Craft (2013) that developing self-determination and innovation through the integration of creative attributes is important for students to pursue better solutions to problems and for their identity formation.

Creativity's importance to student development in The Arts is reinforced by Huia, Jane, and John each recognising all the creative attributes listed on the questionnaire in their subject areas. This is unsurprising as, within education, The Arts has been primarily responsible for integrating creativity into student learning. As "teachers for creativity" (Jeffery & Craft, 2004; National Advisory Committee on Creative and Cultural Education, 1999) Huia, Jane, and John are committed to empowering their students to be innovative individuals and benevolent citizens ready to engage in a 21st century world of dynamic change.

Aligning with Craft's (2013) Wise Humanising Creativity framework, Huia's, Jane's, and John's understanding of creativity as a practice is evident in the definitions they each provide for a number of associated terms. Correlating with Craft (2013), participants in this learning area identify play as a critical process of creative work involving exploring or experimenting. Huia speaks of "exploring ideas… with judgement suspended". In her interview data, she adds that "it can build a hunger for risk taking". Jane's questionnaire response highlights "time to experiment and take risks with ideas". John identifies "experimentation with ideas, people and places", and adds in his interview data: "you might make a mistake [which] might lead to a creative idea that's even better". These participants align with Craft (2013), linking play and immersion in extended periods of exploring and experimenting in safe, supportive environments without performative consequences. Arts students are encouraged to make mistakes as part of the personal growth and innovation processes.

When defining immersive learning, Huia, Jane, and John agree with Craft (2013) describing a state of deep "concentration or absorption" (p. 128), developing student understanding and skill within the subject area. In Music, Huia develops her students' expertise through "authentic experience doing what musicians do". Similarly, Jane describes students "engaging with participatory media… engaging with stories that take the user beyond their own experiences", building their domain mastery and encouraging innovation in the work they create. John concurs with Huia and Jane, but also adds affective or aesthetic learning to the process, describing "delving deeply into content that bombards the senses". John's explanation indicates both cognitive and sensory challenge in students' learning. Craft (2013) also describes immersion as a student-centred activity imbued with high cognitive and emotional involvement leading the student to deeper understanding in collaborative and supportive classrooms.

Huia is the only participant to associate the term affective learning with sensory knowing. Huia describes affective learning in Music as "being moved by experiences in music and reflecting on what that means". Like Craft (2013), Huia associates affective learning with experiencing and understanding through the senses and emotions. Both Jane and John provide definitions more closely aligned with effective learning. This may mean Jane and John use associated terms such as aesthetic

learning or sensory knowing, as presented in the codebook. The slippage in the understanding of the term affective learning problematises devising a common understanding within this learning area and potentially also in connection with other learning areas.

The term character, drawn from the QCAA 21st century skills framework (QCAA, 2017a), is associated by Huia, Jane, and John with a character in the dramatic sense or a characteristic of a resource, rather than the sense of self-awareness, indicated in the QCAA framework (QCAA, 2017b). Huia focusses on "who or what was being expressed in the art". John refers to "portraying a character". Jane describes, "the character of the individual learner", which does align with the understanding of personal character, included in the Personal and Social skills dimension of the 21st century skills framework (QCAA, 2017b). The divergence in understanding of the term character between the 21st century skills framework underpinning the syllabus documents and this learning area suggest the term is confusing, preventing clear implementation in curriculum delivery. Choosing an alternate term or terms may assist senior school teachers to develop character and the associated qualities in their students, meeting the learning outcome objectives of the syllabus documents.

Huia's, Jane's, and John's responses reveal the obstacles they perceive to creative learning in The Arts. Huia and Jane focus on the lack of time available for immersive play. Huia comments that "lesson timetables, assessment deadlines and content coverage mean many of the play activities which are so critical are minimised". Jane agrees that "70 minute lessons do not allow for students to 'flow' and the interruption breaks the creative process". Jane adds in her interview data that "We are talking about 21st century skills… in the structure of education [from] the 19th century", questioning the depth of understanding possible. As a senior school arts teacher, Jane shares her experience of "the general community… push for Science, Maths over Arts" which has created an obstacle because her students "often prioritised these subjects over Film, Television and New Media" meaning their engagement and responses are less creative and more academic outcome driven. John concurs with Jane that student "mindset and attitude toward subject content" impact student engagement and the quality of their creative process and product. Craft (2013) supports the participants, as outlined in the codebook, about the important role immersion plays in developing a deeper understanding and dexterity with creative

attributes, leading to enhanced problem solving. The Syllabus Audit (chapter 4) shows that Seligman (2011) concurs with Craft (2013) and supports the participants' data in recognising immersion as an important learning element in developing intrinsically motivated lifelong learners.

The three participants recognise all of the QCAA 21st century skills (QCAA, 2017b) and their associated qualities, in each part of the syllabus documents. These include Critical Thinking Skills, such as analytical thinking and problem solving, and Creative Thinking Skills, such as curiosity and imagination and generating and applying. The QCAA 21st Century framework (QCAA, 2017b) also includes Collaboration and Teamwork skills, such as recognising and using diverse perspectives and community connections, and Personal and Social skills, such as citizenship and adaptability. The data suggests participants believe their current syllabus documents support their understanding of creativity and facilitate their planning and delivery of creative learning, to enhance the lifelong learning outcomes for their students. The codebook reveals strong alignment between Craft's (2013) Wise Humanising Creativity framework and the skills valued by participants in creative learning developing capable and confident individuals equipped to contribute beneficially in range of contexts.

In line with Craft (2013), the participants reinforce their belief in creativity as an approach to life when considering a range of student learning outcomes from various senior syllabus documents. Huia, Jane, and John all rate as extremely significant statements associated with "teaching for creativity" (Jeffery & Craft, 2004; National Advisory Committee on Creative and Cultural Education, 1999, p. 89) and developing senior students' creative capacity. The statements include the development of critically literate citizens; developing a sense of connection with others and with authentic, real life learning; and developing creativity by promoting curiosity and initiative. Craft (2013), Runco (2016), and Beghetto (2016) all place strong emphasis on the importance of developing intrinsically motivated, creative young people who are equipped to successfully engage with a dynamic world.

The participants' responses indicate they recognise themselves to be creative individuals and role models for their students' creativity. Their data highlights the link between their self-confidence as creative individuals and their commitment to

"teaching for creativity" (Jeffery & Craft, 2004; National Advisory Committee on Creative and Cultural Education, 1999, p. 89), developing their students as Possibility Thinkers. The participants strongly agree with statements including, 'as an educator I value creativity as an integral part of my students' learning', 'in my lesson planning, I consciously consider the development of creative knowledge, skills, and attributes in my students', and 'my life experiences have equipped me to deliver creative learning in this subject'. Huia strongly agrees and John and Jane agree with statements pertaining to developing creativity in curriculum delivery; for example, the current QCAA syllabus suite provides opportunities for schools to develop senior school student creativity effectively. Jane's and John's responses might be tempered by the obstacles to creativity in their subject areas they indicate in response to a previous question. The participants' responses align with Craft (2013) valuing the role of educators using creative learning play in preparing students to engage successfully in a future of possibilities.

5.9.2 Interview Data

Huia, Jane, and John believe learning in Music, Film, Television and New Media, and Drama differs from other learning areas in how they cultivate students through personalised, holistic learning exploring the human experience, consequently making it more meaningful to individuals. John asserts that Arts learning, particularly Drama, is "a lived experience…these ideas run throughout their lives". Huia agrees that the student's personal connection to learning was essential; "[without] … personal meaning… and authenticity… the flow over into the rest of life… is not as powerful". Jane concurs, adding "media makers are generally storytellers … sharing part of who we are, our experiences of the world around us". Aligning with Craft (2013) and Dewey (2005 [1934]), the participants consider creativity in The Arts as a valuable approach to life, enabling individuals to expand their life experiences and grow as individuals who make meaning in relation to the world around them.

The participants support Arts syllabuses' focus on a holistic approach to learning, integrating cognitive problem solving and sensory modes of knowing. Jane affirms a link between creativity, storytelling, and "responding to problems and finding creative solutions". Jane believes this focus is important in developing students as lifelong learners because "We don't know the world we are sending our students into. … so being able to respond creatively to problems, is … essential for young

people". As producers of media content, students learn "to find different ways to interact with people… to find solutions", using divergent and convergent thinking, senses and emotions, and a growing awareness of the messages contained in the content they exchange online. Jane is supported by Craft (2013), Beghetto (2016), and the Arts syllabus documents to pursue cultivating Possible Thinkers who can adapt successfully in a rapidly changing world.

Drama and Music students engage in a similar thinking process as artists and audiences, when creating or viewing performances. John highlights the analysis Drama students undertake to make meaning in a performance: "What am I identifying? Why am I saying that? What does it mean?". Likewise, Huia identifies the importance of developing Music students' metacognition as performers and composers: "What motivated you to make that decision? …What are you saying by doing that?" Senior Arts students use holistic approaches to problem solve and make meaning in response to the world around them. As presented in the codebook, Craft (2013) promotes creativity and question posing as a process of being curious and open to possibilities, pushing individuals forward towards new knowledge and understanding, on both a conscious and non-conscious level.

The participants believes creative holistic learning in The Arts is most beneficial to students during immersion. Jane believes her students understand the concept of flow and value the opportunity to develop the domain mastery and creative capacity through immersive play. Jane explains that tasks requiring a lot of content creation occur offsite. Students spend extended time on weekends "getting into flow". In Drama, John also finds that immersive play using holistic learning leads students to deeper understandings and new creative learnings. John comments that "The longer they experience it, the more confident they [become] and they'll start … into the new". John particularly highlights the role of an affective or sensory experience in immersion, saying "we're multisensory…you want them to experience … it's a whole body thing". He feels "immersion was a collaborative experience, we're all … connected to the story in some way". Huia agrees with John, describing immersive play in Music as a collaborative, sensory experience resulting in deeper understanding of the domain and personal identity. She says, "we play… we're training their ear, we want to sing…it's unconscious learning". She believes the experience "connected us to community and… to something core in ourselves"

making learning personal and meaningful. The participants' understanding of immersion correlates with Craft (2013) describing an often collaborative creative process beginning on a non-conscious, intuitive level and resulting in innovative solutions and personal growth. Vygotsky (1998 [1931]) also recognises the important role played by the imagination in adolescent development of abstract ideas into concrete solutions for problems and new learning paths. The participant data suggests the authenticity of the holistic approach to student learning in The Arts enriches the students' understanding of the creative process, themselves, and their connection with others.

The Arts learning area develops strong links between self-determination and wise creativity, underpinned by storytelling. The participants believe student engagement with stories manifests as self-reflection and develops a deeper empathy for other peoples' experiences and ideas. Jane affirms that when telling stories, we are "sharing a part of who we are… and the world around us". Jane believes this experience develops "our understanding of ourselves and helps others… learn more about themselves". Huia agrees, highlighting the importance of students engaging with their own story in Music, saying "every child is going to analyse and evaluate a different piece. It's going to be connected to them in some personal way… then it has authenticity". Like Jane, she sees her role as an Arts educator incorporating creativity in learning to encourage individuals' identity formation. As Huia comments, "in every dimension of [Music] … there is an opportunity to deliver a personal voice". John concurs, highlighting the importance of story creation for student personal growth, saying "making sure it's a really clear sense of continuing that journey and building on those [questions]…, we've got a real opportunity to encourage that". The learning Jane, Huia, and John describe correlates with Dewey (2004 [1916]) and Craft (2013), connecting classroom learning with young people's experience of the world. These theorists promote a creative approach to learning involving authentic, meaningful experiences that encourage students to determine their own place in the world and use storytelling to develop empathy and connections with other individuals and communities.

All participants highlight the development of empathy and tolerance, or wise creativity (Craft, 2013), as an important learning outcome within The Arts. Huia emphasises that collaboration and "fostering one another" provides better learning

outcomes. Huia believes interpersonal development is a fundamental outcome of The Arts, commenting that she nurtures people who are "observant of their outer world and their inner world and … the marriage of those two". Huia's comments highlight the interconnectedness of self-determination and wise creativity in Music. Her comments suggest students shape themselves, their understanding of the world, and their creative output, simultaneously reflecting the idea of 'journeys of becoming' (Chappell et al., 2012, p. 22). Huia's comments also suggest she believes her role as educator is to cultivate empathy, understanding, and tolerance between students through collaboration in the classroom, potentially preparing them to engage with the community. Like Huia, John values the opportunity as an Arts educator to cultivate in his students' empathy and tolerance for diverse perspectives and experiences. Speaking of his Drama classes, John comments: "we talk about it all the time… the idea of understanding [is] the beautiful thing about the arts". Through collaborative, creative experiences, John's Drama students learn "you don't have to like it…[or] agree with it… but there's an opportunity … to [experience] someone else's…way of seeing the world". John's senior Drama students are learning about the importance of productive relationships with others in the creation of processes and products beneficial to other individuals and communities.

The connection between self-determination and wise creativity in Film, Television and New Media is illustrated by Jane, who created a senior school community linked project called *Common Threads*. The project, Jane explains, is interactive and requires students to "find a community member with a story to tell". The project was due to commence as the COVID-19 lockdown was enforced early in 2020. Jane comments that "what I found inspiring was the students found ways to connect with the community, as the rest of the world was isolating". Jane discovered the project's value was that "it helped students… not just think about their own perspective, but actually tell a story from another person's perspective". Jane's example focusses students on identity and providing a voice for others. The unit provides an opportunity for self-reflection, so that individuals are, as Jane observes, "growing as people and artists simultaneously". Jane highlights that collaborative learning with the community through Film, Television and New Media helps students make beneficial choices for themselves and others, as lifelong learners, at an individual, collaborative, and community level. Jane's practice as an educator aligns with Craft's

(2013) intentions for Wise Humanising Creativity, shaping young people as collaborative, creative, humane problem solvers. Jane enhances student learning outcomes by engaging students with teachers, community members, and more capable peers to develop individuals' creative proficiency and problem solving, enacting Vygotsky's (1978) theory, Zone of Proximal Development, and, thus, preparing individuals to engage with an unknown future in a 21st century world.

5.10 Conclusion

This study's findings suggest creativity is embraced across all eight learning areas as an approach to successfully navigate life in a dynamic, technologically driven and information-rich world, aligning with previous studies in the field (Beghetto, 2016; Craft, 2013; Runco, 2016). Every learning area understood creativity to encompass knowledge, skills, and personal attributes for shaping an individual's self-determination and ability to innovate for beneficial outcomes. This suggests that educators in Queensland are focussed on delivering curriculum creatively to develop whole human beings, aligning with findings from Craft (2013) and Harris (2017). The study's findings highlight the participants' recognition of some alignment between the creative attributes underlying Craft's (2013) Wise Humanising Creativity framework and the qualities presented in the QCAA 21st century skills framework (QCAA, 2017b) that underpins all of the QCAA Senior school syllabus documents. However, there is still some slippage in the understanding of terminology between learning areas, which suggests that difficulties still exist for creating a universal definition for creativity in an educational setting. Participants also reported obstacles for the inclusion of creativity, such as time constraints, the volume of content coverage required to prepare for the external exam, teachers' domain expertise, particularly with newly introduced subjects, such as Design and Business, and teacher's confidence with creative pedagogies. However, it is also evident that teachers are using their expertise as educators and knowledge of their students to overcome these obstacles and deliver important learning outcomes for their students, potentially preparing them to engage successfully with the world. The following chapter is the Discussion chapter. It synthesises the Findings (chapter 5) from the participant data, the scholarly literature in the Literature Review (chapter 2), and the document study in the Syllabus Audit (chapter 4). The Discussion consolidates the data in response to the research question and sub-questions.

6 Discussion

6.1 Introduction

This chapter is a consolidated discussion of the findings from the study, shaped by Craft's (2013) Wise Humanising Creativity framework. It synthesises participant data arising from the study and relevant literature including the syllabus documents. The overarching research question of the study is: In what ways can Craft's (2013) Wise Humanising Creativity framework support Queensland senior school teachers with a common understanding of creativity across all eight learning areas of the curriculum? This chapter frames a response to the two sub-questions that guide the study which are: a) What meaning and attributes do teachers articulate about creativity in relation to their subject syllabus? and b) How have teachers interpreted and integrated creativity in their curriculum planning?

The chapter concludes by highlighting the key findings in response to the main research question.

6.2 Senior School Teacher understandings of creativity: meaning and attributes

The first sub-question investigates how teachers define creativity and its attributes in relation to their subject area syllabus documents. The participant data (chapter 5) and Syllabus Audit (chapter 4) data reveal all learning areas understand creativity to be an integral part of learning and an approach to life for human flourishing. The majority of the participants strongly align creativity with freedom. The participants and the syllabus documents also align creativity with self-determination and educational innovation, as delineated by Craft, Cremin, et al. (2008). Beyond Craft's research, understanding creativity in this way continues in the traditions of Dewey (2004 [1916]) and Bruner (1979) and aligns with Beghetto's (2016, 2018) perspective on creativity for human flourishing.

Teachers implementing the QCAA 2019 Senior school syllabus suite embrace creativity as a critical requirement for responding to a 21st century world which is technologically, socially, and economically dynamic, as well as information-rich. In line with objectives from education (ACARA, 2016b), government (Council of Australian Governments Education Council, 2019), industry (Foundation for Young Australians, 2017), and the QCAA Senior school syllabus documents, participants

promote creativity to develop confident, independent learners and citizens who are agentic, adaptable, critically literate, and who can innovate beneficial outcomes for themselves and others in an educational context and potentially post school for the wider community. The majority of participants believe developing critically literate citizens was significant (n=4) or extremely significant (n=11). Most participants indicated individuals who develop collective stewardship for the common good as a significant (n=3) or extremely significant (n=9) learning outcome. Participant responses show that the understanding of creativity across all learning areas aligns with the concept presented within the Wise Humanising Creativity Framework (Craft, 2013). That the participants' understandings about student learning outcomes for creativity align with Craft's (2013) suggests Wise Humanising Creativity as an effective framework for developing a common definition for creativity within a contemporary educational context. The participants' collective understanding of creativity also correlates with Beghetto (2016) and his concept of developing an unshakeable sense of Possibility Thinking in students through creativity, which is also reinforced by Runco (2016), to prepare for an unseeable future. Tan and Ng (2021) maintain one objective for integrating creativity into learning for high school students in Singapore: to prepare students to engage on a global stage and create outcomes for the social good, aligning with the present study's senior school teachers in their vision of students' future success.

Aligning with the Wise Humanising Creativity framework (Craft, 2013), the participants understand creativity to include knowledge, skills, and personal attributes within the creative attributes contributing to an individual's creative capacity. The participants' data indicate strong support for the development of cognitive skills, such as critical and creative thinking (n=15) and social skills such as collaboration and teamwork (n=14). In addition to cognitive knowing, participants value affective learning, associated with aesthetic or sensory knowing (n=8) as an important component of authentic learning. Most participants (n=12) recognise empathy and ethical motivation as an attribute of creativity. Personal attributes such as persistence (n=12), resilience (n=11), and intrinsic motivation (n=11) are also considered important for creative individuals to innovate in a 21st century world. A significant finding of the study highlights a strong alignment between the listed creative attributes drawn from Wise Humanising Creativity (Craft, 2013) and the

qualities mandated for development by the QCAA 21st century skills framework (QCAA, 2017b) that underpins the 2019 Senior school syllabus suite. The QCAA 21st century skills framework (QCAA, 2017b) also identifies critical and creative thinking, collaboration and teamwork skills, as well as personal attributes and sensory awareness as necessary qualities for adapting and thriving in a complex world. The strong alignment between these two skills frameworks reinforces the suitability of Wise Humanising Creativity (Craft, 2013) to provide a common understanding for senior teachers across learning areas to build creative capacity in students. There is also strong alignment between Craft's (2013) and the QCAA's (2017b) frameworks with *The Alice Springs Educational Declaration* (Council of Australian Governments Education Council, 2019) concerning the development of "confident and creative individuals who … develop personal values such as empathy… and responsibility… are able to manage change and are… creative, innovative and resourceful [problem solvers]" (p. 6) in the world. This compatibility between the three confirms that through the lens of Wise Humanising Creativity (Craft, 2013) there is common ground between learning areas for developing senior school students to interact successfully with a dynamic world for the social good. Tan and Ng (2021) report that high schools in Singapore are encouraged to promote creativity in students with the same combination of creative skills and attributes, suggesting creativity is similarly understood and valued across cultures for comparable objectives. The present study also expands on the work of Harris (2017) by demonstrating how senior school teachers in Queensland are embracing creativity to prepare students for the world at large. Furthermore, it builds on subsequent international studies arising from the *Creative ecologies*: *Fostering creativity in secondary schools* report (Harris, 2017), suggesting these qualities of creativity are also valued by educators in countries such as Singapore, Canada, and the United States of America to prepare students for engaging successfully with a global community. However, the participant data and Syllabus Audit data highlight that there is no universal agreement between learning areas about which attributes are the most important to develop, confirming an inconsistency in understanding identified in the study's Literature Review (chapter 2). There appear to be several reasons for the slippage in understanding terminology. Firstly, subject areas show specificity in the interpretation of terms, as presented in the glossaries on subject area syllabus documents, included in the codebook (Appendix 1) and the Syllabus Audit (chapter

4). Secondly, as developing creativity in students has not been a responsibility for most learning areas in the past, the teacher's understanding of creativity and how it manifests in their subject area could be problematic to building students' creative capacity. Thirdly, teacher understanding of the creative learning requirements of their subject's syllabus documents, particularly for newly introduced subjects, impedes participant understandings of creativity. All of these concerns create obstacles for developing a universal definition of creativity for education. This reinforces the finding that, while creativity is embedded in each subject area syllabus document, it is not universally understood.

6.3 Teachers inclusion of creativity in senior school curriculum planning

The second sub-question examines how teachers integrate creative learning into their curriculum planning in relation to their subject area syllabus documents. The participant data reveals senior school teachers in Queensland plan curriculum through a personalised, creative, and authentic approach to engage students in meaningful learning. Participants identify two characteristics of authentic learning: a) a connection with real world learning and b) developing students from their current level of domain mastery.

Firstly, real world learning was evidenced in each subject area either by the inclusion of real world scenarios and case studies in units of work, or through working on tasks in connection with the community. Learning areas such as Humanities and Social Sciences, English, Mathematics, and Sciences align by including real world exemplars of creative approaches to inquiry and innovation. These included the Nobel Prize scientists in Chemistry or authentic case studies utilised by Business students in curriculum planning. Alternatively, Health and Physical Education, Technologies, and the Arts interact authentically with community groups to innovate for human wellbeing or provide a voice for others through storytelling. Commonly, teachers encourage the exchange of creative learning between the classroom and other sectors of students' lives, building creative capacity. The finding exemplifies authentic experiential learning, promoted by Dewey (2004 [1916]), and the development of an individual's expertise with the example of more experienced peers or teachers using the Zone of Proximal Development theory (Vygotsky, 1978), both of which form the central learning approach of the Wise Humanising Creativity

framework (Craft, 2013), further demonstrating the learning approach as a suitable inclusion in senior school education promoting lifelong learning and human flourishing.

Secondly, the data highlights the participants' emphasis on delivering curriculum that meets individual students at their current level of expertise by using curriculum relevant to students' experience of life. Subject areas including Health, Physical Education, Modern History, Mathematics, Japanese, and Music encourage students to exercise independence as learners by drawing on personal experience in the development of inquiry questions and assessment tasks. The participants' data aligns with the student learning outcome aspirations of education (ACARA, 2016b; QCAA, 2017b), government (Council of Australian Governments Education Council, 2019), and industry (Foundation for Young Australians, 2017) to develop independent lifelong learners. Additionally, an important finding is the commitment of teachers from learning areas such as Humanities and Social Sciences, Mathematics, Sciences, and The Arts to the necessity for specialist teachers in each domain. Developing students' ability to creatively innovate requires educators with domain expertise, confidence, and a commitment to teaching for creativity. The finding supports the significant role of creative specialist teachers identified in previous studies (Jeffery & Craft, 2004; Lassig, 2009, 2012) and stresses the significant role of specialist teachers for senior school students to develop their creative capacity as lifelong learners.

The study shows question posing or inquiry with a view to innovation is a significant focus in planning curriculum delivery in every learning area. Health and Physical Education, Humanities and Social Sciences, The Arts, Sciences, English, and Languages each engage inquiry based learning models. Technologies and Mathematics used problem based learning models. The data highlights the importance of developing students' critical and creative thinking skills to engage with "investigative behaviour" (Craft, 2013, p. 128), pursuing new knowledge and understanding and the creative capacity to innovate. Importantly, participants from Modern History, Design, and Health and Physical Education (n=3) combine question posing with attributes such as play, risk taking, and imagination in safe, supportive collaborative classrooms where teachers facilitate risk taking and develop personal attributes such as resilience and intrinsic motivation, pursuing the best possible

solution developing novel and useful ideas. The finding builds on previous studies investigating Possibility Thinking (Chappell et al., 2008; Craft & Chappell, 2016; Craft, Cremin, et al., 2012) that also find the combination of creative attributes underpins the process of educational innovation in creative classrooms. The finding further builds on previous research (Harris, 2017; Harris & de Bruin, 2018) investigating creativity in high schools conducted with middle school students, by providing evidence for how creativity is being fostered in senior school classrooms, preparing students with a Possibility Thinking approach to life before moving into the world at large. The learning approaches adopted by this study's participants are central to Craft's (2013) Wise Humanising Creativity and supported by researchers such as Beghetto (2016, 2018), Runco (2016), Gardner (1993), and Harris (2016) to prepare students for productive futures.

The study's participants identify several obstacles to creative learning under the current Senior syllabus suite. In the Mathematics and Science learning areas (n=5), participants expressed frustration that the external examination and resulting content coverage required by the syllabus documents hinders the inclusion of creative learning in senior school General syllabus subjects to its best advantage. The resulting restriction of the time available for building students' domain mastery and creative capacity detrimentally impacts learning outcomes for students. While concerns were raised regarding external assessment by other learning area participants, such as The Arts and Languages (n=5), Mathematics and Sciences are burdened by the assessment representing fifty percent of each senior student's summative result. Encouragingly, the Mathematics and Science participants are committed to pursuing the integration of creative learning, building student capacity by creating opportunities to include creative pedagogies where possible and suggesting opportunities for scaffolded learning in future iterations of the syllabus documents. Craft (2013) conceived Wise Humanising Creativity in response to other performative models of creativity, thereby nurturing individual, humanised potential for creativity. The participants' approach to planning for curriculum delivery in the implementation of their subject area syllabus documents shares Craft's commitment to maximising student potential through creativity. This finding is important for providing a foundation for a relevant, common understanding of creativity and its objectives across learning areas under the current syllabus suite. The finding also

highlights possible opportunities for improvements to subsequent revisions of the syllabus documents eliminating the obstacles to creative learning identified by the participants. Interestingly, in contrast to the perspective expressed by the participants in the present study, some teachers in Singapore believe creativity and high stakes testing are compatible. Tan and Ng (2021) report what they call a harmonised approach involving the integration of creative attributes and design thinking in every subject to build student creative capacity within a high stakes assessment system. The authors report that all Singaporean students complete an interdisciplinary project based assessment before entering tertiary education, as part of preparing students for the world.

The participant data demonstrates an inextricable link between the creative attributes of self-determination and wise creativity (Craft, 2013) within learning areas including Health and Physical Education, Technologies, Sciences, Humanities and Social Sciences, The Arts, and English (n=11). Teachers reported that students shape their learning and their identity with a more personalised and authentic learning approach, while exploring the ideas, perspectives, and issues experienced by others in the world around them. The study finds, through collaboration with peers and connections with the community, students are learning from others, developing empathy and a more sophisticated understanding of and appreciation for people who are different from themselves, gaining valuable insights for self-reflection. Students also contribute to the development of their peers and community members by sharing their own experiences and ideas and by empowering others by giving them a voice. This is important learning for future citizens who can continue to empower themselves and others as adults as part of their approach to life. The individual's shaping of themselves while they shape the work aligns with the idea of 'journeys of becoming' (Chappell, 2008; Chappell et al., 2012) that is integrated in the Wise Humanising Creativity framework (Craft, 2013), creating individuals with the confidence to innovate in all sectors of their lives. These findings support previous research promoting the development of wise creativity (Claxton, 2008; Craft, 2008; Gardner, 2008a) and fostering students through creativity in their interactions with the world (Bruner, 1979; Chappell et al., 2017; Craft, 2013; Dewey, 2004 [1916]; Walsh et al., 2017). The finding is significant because it expands educators' and researchers' understandings about utilising creative learning meaningfully in

education, particularly for senior school students, where there is little previous research.

The study's participant data reveals the importance of a holistic learning approach, combining cognitive and affective, or sensory, knowing. Holistic learning is fundamental to The Arts (n=3) in the exploration of human experience. Similarly, the combination of cognitive and sensory faculties also proved significant in the pedagogy of Languages and English (n=3). Affective learning combined with imagination is recognised as important for innovation processes in Mathematics and Sciences, Technologies, and Health and Physical Education (n=7), where the process is embodied. The finding extends previous research across learning areas in senior school education that evidences the fundamental role played by the senses and imagination in the process of innovation (Bohm & Peat, 2010; Craft, 2013; Craft & Chappell, 2016; Root-Bernstein, 2014).

Participants representing Humanities and Social Sciences, Mathematics, The Arts, Health and Physical Education, and Languages (n= 12) highlight the importance of combining cognitive and aesthetic attributes in immersive learning for students' deeper understanding. While expressing frustration about the impact of time and timetabling limitations for creating conditions conducive for immersion, participants expressed strong support for its inclusion in creative learning because it optimised student learning outcomes by developing their creative capacity and domain mastery. These participants have found ways to mitigate the impact of obstacles to immersive learning, such as opening classrooms before or after school to provide opportunities for students to engage in the development of their creative and critical thinking skills and aesthetic engagement with others and with ideas. The finding supports previous research on the importance of this process in the development of creative individuals who are agentic citizens equipped to beneficially impact the lives of others and the world (Craft, 2013; Csikszentmihalyi, 1996; Gardner, 1993, 2008b; Seligman, 2011; Tan & Ng, 2021). This study expands on previous research by providing evidence for how creativity, including both cognitive and sensory qualities, is integrated into senior school education in Queensland in all learning areas, enhancing educators' understanding of creativity and its role in equipping students for life.

6.4 Conclusion

The findings from the study suggest that at the time of implementing the QCAA 2019 Senior school syllabus suite, participants in all eight learning areas experienced inconsistency in the understanding of creativity and its attributes and in the approaches adopted for planning curriculum that integrated creativity. The participants reported that inconsistencies interfere with their ability to develop student creative capacity to its fullest extent. The participants align with Craft (2013) and other theorists including Beghetto (2016) and Runco (2016) in valuing a conception of creativity that is motivated by enhancing the wellbeing of learners and focusses on the development of Possibility Thinkers who innovate novel, personalised, ethically driven solutions in the classroom and in life. However, slippage in the understanding of terminology for creative attributes remains, preventing consistency between learning areas in interpretation and, consequently, the approach to planning for and implementing creative learning.

Craft (2013), the QCAA (2017b), and the study's participants believe that authentic creative learning provides scope for personalised, engaging, and meaningful development of the individual in connection with the world, resulting in academic and lifelong success. This finding aligns with research from Beghetto (2018) who encourages educators to integrate "beautiful risk" in creative classroom learning to instil a sense of Unshakeable Possibility Thinking in students for lifelong success. However, there is a range of approaches to planning for the inclusion of creative learning across learning areas. The data highlights that some participants begin the planning process with consideration of how to build their students' creative capacity. Other participants reported improvising as part of their consideration of syllabus requirements. There is also a group of participants who continue their previous practise within significantly reduced timeframes. The inconsistency in approaches to planning curriculum delivery is a significant finding because it impacts on educators' abilities to meet the syllabus's aspirations in their subject area and optimise the learning outcomes for their senior students.

The participants' data also reveals that the inconsistency in planning approaches has impacted the ability to consistently deliver creative learning in the classroom. Additionally, participants reported that time restrictions, personal experience, their understanding of creativity, and syllabus content requirements for the external exam

each negatively impact on their ability to deliver curriculum creatively and meaningfully. These findings suggest there is a need and an opportunity to support senior school educators with professional development focussing on the integration of creative learning in their subject areas.

In summary, this study's findings point to an appreciation and enthusiasm among senior school teachers in Queensland for the benefits of creative learning for student outcomes, despite an inconsistency in the understanding of creativity and in the way teachers plan and implement creative learning across the eight learning areas. The next chapter presents the study's conclusions in relation to the research question and sub-questions. It also outlines the limitations of the study and suggests opportunities for further research.

7 Conclusion

7.1 Introduction

The research question was designed to investigate how senior school educators in Queensland engaged with creativity in all eight learning areas while implementing the QCAA 2019 Senior school syllabus suite. The question also asks whether Craft's (2013) Wise Humanising Creativity framework provided a universal understanding for creativity in an educational context. Education is necessarily human-centred. In the tradition of Dewey (2004 [1916]) and Bruner (1979), the study's participants from all eight learning areas remain focussed on preparing students to thrive in every part of their lives. Fostering agentic individuals with creativity is an outcome also supported by Australian business (Foundation for Young Australians, 2017) and government (Council of Australian Governments Education Council, 2019). By providing insights into how creativity is being integrated in Queensland into senior school teaching and learning, where there is little previous research, this study makes a significant contribution to understanding how creativity is being utilised in education to promote human flourishing.

7.2 Research sub-question 1: The meaning and attributes teachers articulate about creativity in relation their subject syllabus

Addressing the need to develop students' creative capacity, the QCAA has embedded creativity as a priority into the 2019 Senior school syllabus suite, not just in The Arts, but in all eight learning areas. The Syllabus Audit conducted in this study reveals understandings of creativity are integrated into the aspirations, curriculum delivery, and assessment requirements of each of the QCAA 2019 General Senior school syllabus documents included in the data collection. Interestingly, the understandings highlighted by the Syllabus Audit make a significant contribution to the awareness of senior school teachers, school administrators, and researchers about the integration of creative attributes within each subject area, and how they contribute to achieving the aspirations of the syllabus documents, enhancing student learning outcomes.

Significantly, the audit reveals the arts/non-arts binary may be a false one and there are opportunities to end this dichotomy. As an educator, I previously believed The Arts were the custodians of a wellbeing agenda. However, the Syllabus Audit highlights this was my misconception and every learning area aspires to develop

students as lifelong learners who innovate beneficial outcomes for themselves and others. Creative qualities including knowledge, skills, and personal attributes are present in the syllabus documents across all eight learning areas. This realisation provides a basis on which to build a common understanding of creativity and its integration across senior school curriculum. Potentially, this universal understanding provides opportunities for a new level of cross curricular support between teachers, combining creative knowledge, skills, and attributes to facilitate learning for students. Researchers are also presented with opportunities to examine how further integration of creativity in each learning area can be promoted, providing greater depth of understanding for senior school teachers and enhancing their ability to maximise student outcomes.

The Syllabus Audit also demonstrates that the slippage existing between learning areas in the understanding of terminology for creative attributes identified in the Literature Review still exists and is problematic for the development of a common understanding of creativity across the curriculum. In many subject areas the requirement to develop student creative capacity is new. As a result, teachers are grappling with understanding what creativity looks like in their subject areas and which attributes should be prioritised for development. As most teachers deliver curriculum in more than one learning area, the lack of a common understanding of creativity and its attributes for education is particularly problematic. This difficulty will be partly resolved as teachers gain greater familiarity with their syllabus documents and their understanding of creativity evolves. Additionally, the Findings show that participants have an appetite for professional development about creativity and its attributes, creative pedagogies, and their integration within subject areas. The Findings present opportunities for expanding learning communities to include teachers from other learning areas, who provide fresh perspectives on creative attributes, as well as partnerships with tertiary institutions who have more experience with subject areas, such as Design, who can also enhance teacher understanding of creativity in their domain. Partnerships with community stakeholders can provide examples of creativity in action in real world workplaces; the participants have reported how important these are for making learning meaningful for senior school students. Engaging with other educators and agencies encourages fresh consideration of aspects of creative attributes and their adaption into curriculum delivery, a key

expression of the Possibility Thinking approach to life embraced by the participants in this study.

7.3 How teachers have interpreted and integrated creativity in their curriculum planning

The study's Findings reveal the senior school teacher participants embrace authentic, real world learning and promote the development of student domain expertise as part of creativity's integration into learning. Across learning areas, the necessity for both teachers and students to possess sufficient domain expertise to be creative was widely acknowledged. Interestingly, Tan and Ng (2021) report that Singaporean high school teachers concur with these participants regarding the necessity of domain skills and knowledge before creativity is possible. Participants from several learning areas reported the need for teachers to have deep domain expertise to provide safe opportunities for student exploration and risk taking in creative learning. Unexpectedly, this discussion highlighted the prevalence and importance of the creative attribute of play in every subject area. While a range of terms were used across learning areas to identify play, each participant in their curriculum planning described a process of student-centred, collaborative, extended exploration or improvisational activity. This description correlates with the definition of play from Craft (2013). In the Syllabus Audit, I raised the question about whether senior school students play and the participant data suggests that they do, for a range of purposes that develop creative capacity. The participants' data builds on research from Dunn (2006) about the value older students place on lifelike learning and immersive play with minimal teacher intervention. The participant data also extends research concerning the role of imagination and affective learning in play for innovating new ideas in all learning areas (Bohm & Peat, 2010; Root-Bernstein, 2014). Additionally, it extends the research of Bateson and Martin (2013) about the importance of enjoyment in play for students and, coupled with risk taking, play's role in developing new ways of thinking and acting for young people that are also important for creative adults. Further research opportunities exist to explore the role of play and its connections with other creative attributes in senior school education. Given the high value placed on play and creative learning by the participants, research opportunities exist to consider how to mitigate obstacles to creative learning reported by the participants, such as time restrictions and high stakes testing in senior school

education to further maximise student learning outcomes. Research highlighting models of integrating creative learning and high stakes testing (Tan & Ng, 2021) may provide some insights for teachers in Queensland about how to address these issues constructively.

One of the acknowledged limitations of this study is the data collection phase coinciding with the global shutdown under COVID-19 in 2020, when Queensland schools were not delivering learning in face-to-face mode, but rather had to deliver learning experiences online. Teachers were forced to be resilient, moving to online learning and later returning to the classroom, while delivering requirements for the introduction of a new syllabus suite, still aspiring to optimise learning outcomes for their senior school students. While burdened with extra demands as well as time and energy constraints, the study's participants have utilised their experience to generously contribute to this research for the betterment of researchers, educators, and future senior school students alike.

As a result of the changed learning conditions, further research is needed to ascertain how senior school teachers integrate creativity in learning under this syllabus suite outside of pandemic conditions. School closures meant school campuses were inaccessible. It was therefore not possible, to conduct classroom observation of curriculum delivery in this study. This raises possibilities for research in the future to observe whether teachers are delivering the learning outcomes for students they aspire to deliver and, if so, how they are successfully meeting this objective.

The restrictions imposed by pandemic conditions meant that only participants from metropolitan schools were included in the study. There is a gap in understanding the experience of senior school teachers in regional areas of Queensland with the implementation of the QCAA 2019 Senior school syllabus suite, which provides opportunities for further investigation. Regional, rural, and remote schools potentially experience additional obstacles to creativity in learning that result from travel time, access to learning resources, and the provision of reliable Wi-Fi for learning and communication. As the 2019 Senior school syllabus suite aspires to enhance the learning outcomes of all Queensland students, understanding the curriculum planning experiences of teachers outside of metropolitan centres through further research is an important addition to senior school scholarship.

The inaccessibility of school campuses during this study's data collection prevented the inclusion of senior school student voices. As curriculum is developed and delivered to benefit students, research needs to consider what students understand creativity to mean and whether students value its inclusion in their learning. Questions to be considered include: Do students believe they are building creative capacity through their curriculum offerings under the current Senior school syllabus suite? How are they utilising creativity in other sectors of their lives? Asking these questions would address a gap in the research and provide a fuller picture of the experience of creativity in learning under the QCAA 2019 Senior school syllabus suite.

7.4 Research Question 1: Craft's (2013) Wise Humanising Creativity framing of creativity in senior school learning

The research question asked whether Craft's (2013) Wise Humanising Creativity framework can provide a common understanding of creativity for an educational context. The findings from this study highlight the suitability of the Wise Humanising Creativity framework (Craft, 2013) to provide a universal understanding of creativity across all learning areas in a senior school context. While Craft initially emerged as an arts educator, her later research demonstrates a much broader focus as an educator. Craft's application of the Wise Humanising Creativity framework promotes an authentic, student-centred approach to learning, where learning is exchanged between the classroom and other sectors of students' lives. Craft also advocates for student learning to develop creative attributes in both digital and face-to-face contexts, empowering students as lifelong learners (Chappell et al., 2017; Craft, 2013; Walsh et al., 2017). These characteristics of the framework provide a firm foundation for the integration of creativity into the senior school curriculum as a whole and the flexibility to apply the framework to the specific needs of each learning area.

The codebook (Appendix 1) created for the analysis of the study's findings demonstrates a strong alignment between the understanding of creative attributes within Wise Humanising Creativity framework (Craft, 2013), the qualities of creativity in the QCAA 21st century skills framework (QCAA, 2017b) underpinning the syllabus documents, and the participant understandings of creative attributes. This correlation in understandings of creativity points to the suitability of Wise

Humanising Creativity (Craft, 2013) as a standard framework for creativity in education, supporting teachers and their curriculum planning. A consistent foundation for understanding creativity is particularly important in senior school, as most teachers deliver curriculum in more than one learning area.

As this syllabus suite promotes creativity in learning by integrating the 21st century skills framework (QCAA, 2017b) into each subject area syllabus, there is great potential for enriching a student's overall learning outcomes by integrating the learnings from each subject offering. In the Wise Humanising Creativity framework, Craft (2013) provides a strong platform for senior school teachers as they foster student creative capacity for a 21st century world.

7.5 Conclusion

As an educator and a researcher, conducting this study has gifted me with a new depth of appreciation for my teaching colleagues in the senior school and has highlighted the critical role educators play in maximising learning outcomes for students to cultivate confident, agentic, healthy individuals who can flourish in every part of their lives and who are empowered to contribute beneficially to the world around them. I have had the opportunity to expand my own understanding of how creativity is embedded in learning areas outside my own expertise and the potential for combining those learnings for the enrichment of senior students who are on the cusp of leaving school for the wider world. As a result of all that my participants have taught me, I believe that, should I return to teaching in a school setting, I would be a better teacher, because I appreciate how enthusiastically creativity has been embraced by educators across all learning areas to develop individuals who can meet whatever change arises and create exciting possibilities for themselves and the world around them.

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9 Appendices

9.1 Appendix 1 Wise Humanising Creativity Codebook

Definition from the literature	Key words aligned to the key term from the literature.	Indicative responses from participants.	Examples from participant responses
PLAY is defined by Craft (2013) as "being in an 'as if' space, improvising" (p. 128). As part of creative learning, play is a student-centred and ideally, student-directed process facilitated by teachers. It deeply engages students in extended exploration of an aspect of their learning. Play involves intrinsically motivated individuals working with peers to use their imagination, question posing, critical and creative thinking skills, persistence and resilience to transform problems into solutions. It is often linked with	Play, playful, experiment, explore, freedom, unstructured. From the *21st century skills (QCAA, 2017a)*: generating and making new ideas, seeing or making new links, identifying alternatives.	Participants describing play as a serious process of work pursuing new ideas or outcomes within a subject (Craft & Chappell, 2016). Participants describing a work process that is fun, joy filled (Craft & Chappell, 2016). Participants aligning play with playing games, practical activities including roleplays (Craft & Chappell, 2016). Participants describing a collaborative experience of exploration for students, with little or no teacher interference. Teacher acts as a facilitator in this process (Craft & Chappell, 2016). Participants describe playful learning episodes involving the senses, immersion and imagination (Craft, 2000, p. 41). Participants may describe a process of allowing students to 'suppose', "entertaining a hypothesis" or thinking "as if" (Craft & Chappell, 2016; Craft,	Participants described a process of creative learning using terms such as freedom, unstructured, no boundaries, exploration. Participant gave direct reference to play as part of the creative work process, especially in subjects such as Drama, P.E and English. Some participants alluded to play as a precursor to experimenting in the creative process of problem solving or assessment preparation within their subject. Participants gave examples of using the term *play* when developing students' domain mastery within their subject e.g. using Molymods or plastic modules to identify chemical composition, role plays, or games in Languages. Participants often used the term playful to describe the creative process when students have achieved a level of domain mastery

immersive learning and freedom from performative processes, enabling experimentation without fear of failure. It can also be utilised within a domain for a deeper understanding of the knowledge and practices within a domain. Play also nurtures growth of the individual's identity and their understanding of their connection with the world.		Cremin, et al., 2008), in order to test ideas and solve them or pose and respond to questions. Participants describing a process where their students or themselves go "beyond the obvious" and "see more than is immediately apparent" (Craft, 2000, p. 41) in their approach to a creative learning task.	and are creating responses within a domain e.g. students being *playful* with language in English when creating a text. Participants use the term *experiment* to describe a structured and more serious version of play used to solve specific problems, often as part of assessment preparation. Participants believed experimenting always has an outcome. Participants believed other forms of play don't necessarily have to produce a solution.

POSING AND RESPONDING QUESTIONS Defined by Craft (2013) as "investigative behaviour" (p. 128), it encompasses question posing or problem finding and question responding, often leading to posing more questions. Question posing and responding is an essential component of the transformational process of possibility thinking. Individuals are encouraged to ask the question 'what if?' in as many different ways as possible. Question posing is about pushing forward in the pursuit of new knowledge and understanding. Curiosity, as well as being open to possibilities, is at the heart of question posing, as individuals find and solve problems, both big and small. Craft (2000) highlights that question	Posing questions, question responding, problem finding, problem solving, curiosity, being open to questions, inquiry-based learning, problem-based learning, formulating questions or problems, hypthesising. From the *21st century skills (QCAA, 2017a)*: Critical thinking including analytical thinking, problem solving, decision making, reflecting and evaluating, intellectual flexibility, curiosity and imagination, creativity, generating and applying new ideas.	Participants describe student raising their own questions about a topic (Craft & Chappell, 2016). Participants describe a process of students answering a question with more questions (Craft, 2000). Participants describe students expressing curiosity or wonder about the world (Craft, 2000). Participants describe students sensing a problem without necessarily being able to articulate it clearly (Craft, 2000). Participants describe students implied through actions, in an 'as if' space (Craft, Cremin, et al., 2008). Participants describe their students posed question as a critical part of a process of reflection with a specific task (Craft, Cremin, et al., 2008).	Participants directly referred to students formulating their own problems, particularly in Mathematics. The inquiry learning model used in Physical Education and Health means participants directly refer to students formulating their own research questions. Participants described nurturing their students' curiosity as part of developing their creative capacity. Participants referred directly to the inquiry based model on which their subject is founded e.g. Business and Design, to solve problems for stakeholders. The participants in The Arts learning area described pushing their students to know there is always another layer in the exploration of a concept or a skill. The participants referred to question posing or question formulating in a creative learning context, leading to the asking of additional questions.

posing occurs on a conscious and a subconscious level. The process also involves both divergent and convergent thinking.			

IMAGINATION is the birthplace of creative ideas and action. Imaginative thinking goes beyond the expected or the obvious, in order to solve a problem or puzzle. Often beginning with intuition, it is the non-conscious level of the creative process in which the individual germinates an idea, that often cannot yet be articulated (Craft, 2000). It becomes 'as if' (Craft, 2013, p. 128) thinking, transforming problems by discerning the quality of ideas, content, or tasks, producing something valuable, and useful. It provides the opportunity to consider possibilities safely, without the consequences of the real world. In adolescents, it also develops the transition from concrete to abstract thinking, connecting young people with the world	Imagination, imagining, inspiration, conceptualizing, intuition, inventiveness, creative thinking, enterprise. From *21st century skills (QCAA, 2017a)*: Creative thinking, including innovation, initiative and enterprise, creativity, curiosity, and imagination, identifying alternatives.	Participants describe an individual conceptualizing and idea or solution for a problem (Craft & Chappell, 2016). Participants describe imagining a process before putting it into action. The process will be more than thinking; it will produce a useful and novel idea or solution (Craft, 2000). Participants describe seeing or understanding an idea without being able to clearly articulate it (Craft, 2000). Participants describe imagining themselves in 'someone else's shoes' and considering that person's experience of life. This may be as part of a process of understanding an event, creating a character, or considering their own values and beliefs (Craft, 2000).	Participant referred to students hearing something on the news and then trying to match it with the concept or event in the classroom. Participants described the development of empathy as students put themselves in the shoes of other people or characters in texts. This was part of the process of creating their own. Participants described a process of senior students integrating their learnings about Japanese culture into their visual artwork, as a means of deepening their understanding of themselves and the world. Participants described the development of a new business idea, which is "born in imagination." When asked about the relevance of imagination to their subject, Mathematics participants responded, "that's what [Maths] is!" Participants representing English and The Arts spoke of the importance of imagination

around them (Vygotsky, 1978).			in the process of storytelling, interpreting texts and developing their own characters. Participants representing English and The Arts also recognised the importance of imagination in the development of empathy and the consideration of the values and beliefs of others. They spoke of the importance of this process in the shaping of students' identities.

IMMERSION is a state of deep concentration, absorption, or orientation in the process of creation (Craft, 2013). Immersion is also referred to as 'flow' (Csikszentmihalyi, 1996) and requires extended periods of time without interruption to fully engage the mind, senses, emotions, and spirit in the experience. Immersion is often connected with play and imagination and involves high cognitive challenge, leading to deep understanding. Immersion requires safe, supportive classrooms where teachers provide high emotional support and facilitate a student-centred and directed process of learning. Immersive learning can be both collaborative and individual.	Immersion, flow, deep concentration, deep engagement.	Participants describe individuals being in state of 'flow' or deep concentration or engagement (Craft, 2013). Participants describe collaborative activities in which the individuals in the group are deeply engaged in solving a problem or puzzle. The activity is directed by the members of the group, without interruptions, over an extended length of time (Craft, Cremin, et al., 2008). Participants describe learning episodes where the individual or group are completely engaged with an activity. The holistic engagement involves the senses, emotions as well as cognitive faculties (Craft, 2000).	Participants described immersion as being "buried in experience and engagement". Participants referred to students 'daydreaming' as they 'bed down learning'. Participants believe immersion is necessary for deep understanding within a domain. Participants value immersion as essential to a high quality creative learning. Participants aligned immersion, time and a lack of interruptions. They believe time restrictions within timetable structures prevent students reaching immersive states which optimise deep understanding.

INNOVATION For Craft (2013), innovation in possibility thinking is synonymous with novelty of ideas, processes, or products. Educational innovation involves students "playfully connecting ideas, triggered, scaffolded and extended by thoughtful adult provocations" (Craft & Chappell, 2016, p. 408; Craft, Cremin, et al., 2008), and is separated from economic innovation and solutions for the marketplace. The alignment of 'innovation' and 'creativity' within a possibility thinking framework involve "question posing, imagination and risk taking" (Craft & Chappell, 2016, p. 408). Manifestations include adapting current practices within a domain to suit the	Innovation, adaption, enterprise, entrepreneurial, modification. From 21st century skills (QCAA, 2017a): Problem- solving, reflecting, and evaluating, intellectual flexibility, innovation, generating and applying new ideas, creative thinking, identifying alternatives, seeing or making new links, adapting, flexibility.	Participants describe a creative process resulting in domain shifting ideas, solutions, or products. Participants associate innovation with STEM fields. Participants describe a creative process involving the modification of an ideas, process, or product that already exists. Participants describe an idea, process, or product that solves a problem and is beneficial to an individual, group, or community.	Participants described ideas that 'crack the box' of a domain. For example: Cage's *4'33* in Music. Participants described the adaption or devising of new products to fill a need. Some participants described innovation as 'an adaption or a repurposing of ideas, processes, or products that already exist'. Some participants described innovation within an educational context as learners seeing problems from a new perspective from the norm in order to solve them. E.g. Mathematics. For other participants, this idea extended to benefitting the society or the world. E.g. green Chemistry. Participants used the terms 'creativity' and 'innovation' interchangeably. For some participants, there was a delineation between innovation and creativity. Both terms described creative processes; innovation was understood as a more structured process that resulted in a product. It was often aligned by participants with experimenting. Creativity was often

learner or another stakeholder. However, in the field, it may also align with domain changing ideas and practices often identified as 'big C' creativity (Amabile, 1996).			perceived as less structured or unstructured, and aligned with play. The participants did not perceive that creativity had to result in a product. Some participants described innovation as a creative process they associated specifically with STEM subjects or fields. Participants associated innovation with entrepreneurial activity. This process involved improvising and the need for repeated failure before success was achieved. Participants did not think that senior students generally engaged with true innovation. The innovators were associated with changemakers such as Elon Musk.

RISK TAKING Involves [students] exercising independence in generating and following through ideas. Adults encourage students to learn from experience in safe, supportive learning environments, because the process develops agency and produces new ideas and actions, as students move into creative new spaces. Risk takers must step outside their comfort zone, become comfortable with failure and ambiguity and 'going to the edge' (Craft, 2013). In WHC, risk taking's goal is to produce solutions that are beneficial to the individual's growth and to the world. This concept is dubbed by (Beghetto, 2018) as 'beautiful risk'.	Risk taking, failure, stepping out of comfort zone, being comfortable with ambiguity. From *21st century skills (QCAA, 2017a)*: Problem- solving, decision making, intellectual flexibility, initiative, and enterprise.	Participants encourage students to step outside their comfort zone with new activities or new approaches to familiar activities (Craft, 2013). Participants encourage students developing their agency by developing their own approach to tasks (Craft, 2013). Participants describe individuals experiencing success and creating a new idea when they take a risk (Craft, 2013). Participants experience failure when they attempt a new approach. They reflect on what they have learnt (Craft, 2013). Teachers and students experience the tension between encouraging risk taking in learning and achieving academic success.	Participants often described a connection between risk taking, failure, and resilience. Some participants believed that students are unable to be academically successful, if they are risk takers because they may not meet criteria in high stakes assessment system. Other participants reported that students in their senior classes, who are comfortable with risk taking, are not concerned about a poor result. The risk taking and the learning that resulted is more highly valued than a good result measured by the task criteria. Participants believed risk taking and failure are a necessary step on the path to academic success, because the first solutions devised for a problem may not be the best ones. One participant commented he believed that 'senior students would accept failure from risk taking if they could see that improvement in their learning, was the result.' A participant believed, 'risk taking is necessary for innovation and for personal growth.'

SELF- DETERMINATION Craft (2013) defines this element as " self- directed actions, self-chosen" (p. 128). These actions apply equally to an individual's journey as lifelong learner, and the shaping of their creative identity. Within the WHC framework, this element, includes Chappell's (2008; Chappell et al., 2012) framework for Humanising creativity. Specifically, the inclusion of the idea of 'journeys of becoming' in which individual's identity is being are being shaped, while they shape creative work. This process occurs on an individual, collaborative, and communal level. While the original concept was conceived as a face-to-face, embodied, dialogic process, more recent studies by (Chappell et al., 2017; Walsh et al., 2017)	Autonomy, 'journeys of becoming' (Chappell, 2008; Chappell et al., 2012), pursuing self - efficacy. From *21st century skills (QCAA, 2017a)*: problem solving, collaboration, intellectual flexibility, initiative or enterprise, creativity, identifying alternatives, seeing or making new links, recognizing and using diverse perspectives, participating and contributing, community connections, self – management, character, adaptability/ flexibility, social	Participants describe students shaping their own learning journey (Craft, 2013). Participants describe students creating their own inquiry questions (Craft, 2013). Participants describe 'journeys of becoming' in which individual identities are shaped while individuals shape work in collaboration with others face-to-face and in digital learning environments (Chappell, 2008; Chappell et al., 2012). Students use stories of others and from texts to consider diverse values, beliefs, and attitudes, developing empathy. Some of these values and beliefs may be adopted by individuals as they shape their identities. Students use class or assessment tasks to give voice to their story and develop an understanding of their journey.	Participants described the material that students chose to work with in class as being connected to the student's identity in some way. In some subjects, this extended to the community groups or individuals within the community whose stories students chose to tell. Participants described the need for students to take personal responsibility for their learning to be successful. Some participants extended this idea to connect their learning with their self-management of their lives. Some participants described a learning process in which students were introduced to new ideas, values, beliefs, or perspectives on an issue in class and chose to incorporate these into their own identity and/or into their work output in other subjects. Participants describe students using stories from each other, members of the community and texts they are studying, to shape their learning journey and identity.

have adapted the process as part of possibility thinking operating in digital or virtual learning environments as well. Self-Determination is linked with innovation.	skills, leadership, cultural awareness, citizenship.		Participants described encouraging their students to 'create their own stories' of personalised learning. Participants described encouraging students to be persistent with problem solving and not wait for teachers to 'rescue them'. Participants reported examples of senior students self- managing their workload during the COVID-19 lockdown. Participants described students creating their own inquiry questions.

PERSONAL ATTRIBUTES Personal capacities or qualities that are recognised by creativity researchers as distinctive in creative individuals and necessary for the transformational process of possibility thinking within wise humanising creativity. These include but are not limited to intrinsic motivation, persistence, and resilience. (Craft, 2000; Craft, Cremin, et al., 2008; Gardner, 2008b; Runco, 2016).	Empathy, resilience, intrinsic motivation, and persistence. Social skills, soft skills. From *21st century skills (QCAA, 2017a)*: Character, mindfulness, resilience, teamwork and collaboration skills, self – awareness.	Individuals provide examples of resilience demonstrated by teachers and/or students during the COVID-19 lockdown. Participants illustrate examples of students demonstrating persistence in solving a problem as part of their growth through a creative learning journey. Participants report examples of intrinsically motivated students who use their initiative and immerse themselves in creating novel products in response to an assessment task.	Several participants believed that it was important for individuals to realise, 'no one is immune to world disasters, such as the COVID-19 pandemic.' They felt it was important for students to learn to be resilient and keep going. The Design participant felt resilience was a key trait for student success in her subject. Failure is inevitable in the Design process, so students needed to 'pick themselves up' to improve their stakeholder's outcomes. Participants commented that learning under the COVID-19 lockdowns had forced senior students to be resilient, because they did not have their usual support structures for learning. Participants commented that the students who were persistent in 'going the extra mile' with their work ethic, suffered the least during the COVID-19 lockdowns. The Film, Television & New Media participant described the initiative shown by intrinsically motivated students to apply themselves to

			community oriented storytelling tasks during the COVID-19 lockdown. The participants representing Business commented on the importance of collaboration and teamwork skills for success in their subject, because it emulates that real life teamwork structures of the Business world.

WISE CREATIVITY (ETHICAL MOTIVATION) Developed by Craft, Wise Creativity, (Craft, Gardner, et al., 2008) recognises that creators need to consider the outcomes of their creativity, not only for themselves, but for others and the world. Craft (2008) argues that teachers have a responsibility for instilling in their students a desire to shape 'good creativity' and to encourage stewardship of their creative output 'for the common good'. It was developed in response to a dissatisfaction with individualised and economically driven conceptions of creativity (Craft, 2012, 2013; Craft, Gardner, et al., 2008).	Respect for others, empathy, integrity, considering the collective good. From *21st century skills (QCAA, 2017a)*: Character, mindfulness, cultural awareness, citizenship, leadership, ethical (& moral) understanding.	Individuals describe the development of empathy during class learning. Participants choose real world topics and issues as the focus for units of work, to nurture students' 'good creativity' and stewardship for beneficial outcomes. Participants approach a learning task with a view to finding a problem and then solving it in a way that is beneficial to the community or the world.	Participant for Physical Education and Senior Health stated that her syllabus documents focussing on "how do we benefit the greater good or how can we benefit the community as a whole?" The participant for Design emphasised that, 'success in this subject depended on meeting the needs and desires of the stakeholder' with whom students were working in each project. Participants from several learning areas believed that a significant proportion of their senior students were concerned about the impact of their creativity on others and the world. In some cases, this was evidenced in their involvement in social justice committees within their school.

AFFECTIVE LEARNING Craft discusses in her earlier work a non-conscious and non-cognitive, experiential level of creative learning. This level is also called sensory learning or aesthetic learning. It involves experiencing senses and emotions and understanding through these faculties. It includes the germination of creative thinking through intuition and is closely aligned with imagination. Affective learning is identified by Craft as the spiritual level of creativity (Craft, 2000).	Sensory learning, intuition, aesthetic learning, aesthetics, spiritual level of creativity, experiential learning, inspiration, imaginary. From *21st century skills (QCAA, 2017a)*: Curiosity and imagination, mindfulness.	Individuals describe learning episodes involving the sense, emotions or intuition as part of the experience and the process of attaining deep understanding. Individuals narrate creative learning experiences that resonated deeply with individuals but are not easily articulated. Individuals describe learning episodes that emphasise sensory learning and encourage students to look at real world issues or groups of people from a new perspective.	Some participants described the fascination that students hold with the sensory part of learning e,g, the dissection of a bull's eyeball, touching rocks that are millions of years old and understanding what that means. Some participants described the importance of aesthetics of language and how the sensory aspects of language lead to ideas. They also emphasised the links to imagination. The Arts, English, and Language participants described the importance of sensory learning for their students, as part of a holistic approach to learning in their learning areas. They described the link with identity that connected students with creative learning and led to a deeper understanding, respect and appreciation for the work created in these learning areas.

9.2 Appendix 2 Questionnaire Data Collection Tool

Personal details: Please complete the following personal and professional details for the purpose of identification by the researcher.

Name:

.....

School:

.....

Position:

.....

Subject Specialism:

.....

School Email Address:

.....

Gender:

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ I choose not to reveal my gender

For how many years have you been teaching?

- ☐ 1 - 5
- ☐ 6 - 10
- ☐ 11 - 15
- ☐ 16 - 20
- ☐ 21 - 25
- ☐ 26 - 30
- ☐ 31+

In what ways do you perceive creativity in the subject area you predominantly teach to year 11 and 12 students?

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Below is a list of attributes that are often associated with creativity in learning. Tick the qualities that you recognise as part of creative learning in your subject.

- ☐ Play
- ☐ Question posing
- ☐ Imagination
- ☐ Innovation
- ☐ Immersion
- ☐ Risk taking
- ☐ Aesthetic learning
- ☐ Pursuing novel outcomes
- ☐ Curiosity
- ☐ Ethical motivation, empathy
- ☐ Resilience
- ☐ Collaboration
- ☐ Intrinsic motivation
- ☐ Persistence
- ☐ I don't recognise any of these attributes as part of creativity in my subject area.

Below is listed a series of terms commonly associated with creativity. In the spaces provided, write a brief description of how each term is defined or understood in your subject area.

	Definition or understanding of the term in your subject area.
Innovation	.....
Play	.....
Immersive learning	.....
Affective learning	.....
Character	.....

The QCAA has underpinned the 2019 Senior School Syllabus Suite with a set of 21st Century Skills, some of which are listed below. In the first column, place a tick next to every skill or attribute you believe is evident in your school's work program for the subject in which you predominantly teach. In the second column, place a tick if students engage with the attribute in units of work. In the third column, place a tick if the students are asked to demonstrate that attribute in response to their assessment tasks.

	Present in the Work Program	Demonstrated in Units of Work	Demonstrated in Assessment Tasks
Critical Thinking	☐	☐	☐
analytical thinking	☐	☐	☐
problem-solving	☐	☐	☐
decision-making	☐	☐	☐
reasoning	☐	☐	☐
intellectual flexibility	☐	☐	☐
reflecting and evaluating	☐	☐	☐
Creative Thinking	☐	☐	☐
initative and enterprise	☐	☐	☐
curiosity and imagination	☐	☐	☐
creativity	☐	☐	☐
innovation	☐	☐	☐
generating and applying new ideas	☐	☐	☐
identifying alternatives	☐	☐	☐
seeing and making new links	☐	☐	☐
Collaboration and Teamwork	☐	☐	☐
interacting with others	☐	☐	☐
recognising and using diverse perspectives	☐	☐	☐
participating and contributing	☐	☐	☐
community connections	☐	☐	☐
Personal and Social Skills	☐	☐	☐
character	☐	☐	☐
adaptability/flexibility	☐	☐	☐
citizenship	☐	☐	☐
cultural awareness	☐	☐	☐
ethical (and moral) understanding	☐	☐	☐

Below are a series of statements presented in the rationales of QCAA 2019 senior school syllabus documents, regarding learning outcomes for senior school students. Consider each statement and indicate how significant or insignificant you believe developing this outcome is for the senior students in your subject area.					
	Extremely Insignificant	Insignificant	Neutral	Significant	Extremely Significant
The development of critically literate citizens.	○	○	○	○	○
Individuals who develop collective stewardship for the common good.	○	○	○	○	○
Developing a sense of connection with others and with authentic, real life learning.	○	○	○	○	○
Developing creativity by promoting curiosity and initiative.	○	○	○	○	○
Developing question posing using real life learning.	○	○	○	○	○
Developing an awareness of personal, social, and ethical implications and impacts of their solutions.	○	○	○	○	○
Developing self-determination.	○	○	○	○	○
Understanding, analysing and taking action regarding social issues in the world.	○	○	○	○	○
Individuals who provoke alternative ways of seeing, thinking and doing.	○	○	○	○	○

Below is a series of statements considering how well prepared you feel, as an educator, to develop creative attributes in your senior students in your subject area. Please rate each statement on the scale from Strongly Disagree (SD) to Strongly Agree (SA).

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
As an educator, I value creativity as an integral part of my students' learning.	○	○	○	○	○
As an educator, I have a clear understanding of how creativity is integrated into the learning in my subject area.	○	○	○	○	○
As an educator, my professional development for this syllabus has equipped me to deliver creative learning in this subject.	○	○	○	○	○
My life experiences, have equipped me to deliver creative learning in this subject.	○	○	○	○	○
In my lesson planning, I consciously consider the development of creative knowledge, skills and attributes in my students.	○	○	○	○	○
I would value opportunities to engage with learning about creativity in my subject.	○	○	○	○	○
The current QCAA syllabus suite provides opportunities for schools to develop senior school student creativity effectively.	○	○	○	○	○
I believe individuals must be equipped with creativity to meet real world challenges now and in the future.	○	○	○	○	○
Through their engagement with creative learning in this subject, I believe senior students are encouraged to take risks and seek novel outcomes.	○	○	○	○	○
Through their engagement with creative learning in this subject, I believe senior students are encouraged to be agentic individuals who seek self-determination.	○	○	○	○	○

Do you experience obstacles to effectively implementing creative learning in your curriculum delivery? If yes, please explain.

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9.3 Appendix 3 Interview Data Collection Tool

- Tell me about your teaching background. In which schools have your taught and what positions have you held and what subjects have you taught?

What do teachers understand creativity in the syllabus to mean?

- Creativity has been included as one of the 21st century skills created by the QCAA. In the context of the syllabus documents, what do you understand creativity to be?

- In what ways do you perceive creativity as a necessary attribute for individuals to be successful in the 21st century? How do you believe your subject contributes or should contribute to this outcome?

How have they interpreted it in the work program and in the classroom?

- What role have you played in implementing the new syllabus into your subject area? When you were writing your work program for the new syllabus, what priorities, shaped the units that you developed with respect to knowledge, skills and personal attributes?

- In the syllabus rationale for all of the general Mathematics subjects it says, "mathematics is creative, requires initiative and promotes curiosity" In your questionnaire you indicated that the syllabus as it presently stands does not allow for creativity because of time restrictions and the amount of content to be covered and assessment requirements. Is that correct? What changes would you make to the delivery of the syllabus to meet the rationale aspirations?

What does the interpretation look like in its delivery?

- In what ways do you feel well prepared to teach senior students how to be creative now and in their post school lives?
- Describe a lesson you have conducted this year with your year 11 students, where the students have been encouraged to pose questions and create their novel solution to a challenge.
- Is there a role for imagination and sensory learning in your subject area? What does that look like in a classroom?

Additional questions

- Do you believe senior students 'play' or 'experiment'? In what ways do senior students 'play' or 'experiment' in your subject? Is this an individual or a group activity?
- Craft describes 'immersion' as a student centred classroom, where learners are responsible for shaping their own learning journey. The teacher is a facilitator who provides high emotional support and cognitive challenge. Could that be a description of learning in your classroom? Is this your perception of immersion or would you define it differently from Craft? Can a learner be immersed in learning on their own or does it require them to interact with others?
- What input or resources would you value to enhance your ability to develop your senior student' proficiency with creativity?