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How do young children in Hong Kong interpret the concept of giftedness, as it relates to their learning needs in the classroom?

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Abstract

The term 'giftedness' has existed in research spanning multiple decades. This concept has engendered polemical debates in the literature and was once used historically in reference to individuals with a higher level of academic intellect. Over time, such narrow conceptualisations of giftedness have been replaced by a diversified understanding, whereby giftedness refers to individuals who demonstrate a higher level of skill in a particular area, such as performance, creativity, intellect, or artistic ability. As society has consistently attempted to identify these individuals, there have been some challenges as to how children, who are classified as gifted, should proceed through their education. This lack of consensus in the literature and within policy circles, is a function of the dearth of empirical research that can inform teachers, parents and the government on how to properly support and nurture gifted children by harnessing their needs. Studies that evaluate such questions via the lens of gifted children themselves, and that can therefore provide nuanced insight into the support they require as part of the learning environment, are also lacking. Against this backdrop, this study examines the views of young, gifted children (aged 5-7) and their parents via semi-structured interviews, focusing on their constructions of giftedness and the support they require in the learning environment, specifically, the preschool and primary settings. This research is situated within the context of Hong Kong.

Hong Kong is a city that has demonstrated strong educational policies and has produced scholars that have impressive backgrounds in education, the arts, and performance; yet it is currently experiencing a period of transition that makes it imperative for researchers to prioritise the voice of the children currently growing up. Aside from the leveraging of semi-structured interviews, the sample of children in this study has produced drawings linked to the interview process and giftedness, following a pilot study.

Findings from the main study suggest that children were able to identify a range of social and academic learning needs that they felt were important for their own learning experience. There were many instances where the children wanted to demonstrate a high level of performance, mainly in academics, though in other areas (such as music or art) as well. Elements of the findings demonstrate consistency with more recent literature,

specifically in relation to some of the more prominent models that have been created related to giftedness. As a result, this research project has implications for future policy changes because teachers and educationists can leverage the findings of this research, based on the subjective experiences of gifted children, to influence pedagogical approaches and curriculum designs, ensuring that these directly address their learning needs and empower them to take charge of their learning.

Keywords: giftedness, gifted and talented, qualitative research method, young children, participatory research

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

1. Introduction

1.1 Background

A diverse mixture of abilities, intelligence, and learning styles are in every classroom (Lusk, 2018). However, the needs of gifted students have largely been ignored in research, program funding, policy, and teacher training (Subotnik et al., 2011). According to Gallagher (2012, p.461), this is due to the "*the conflict between [excellence and equity] often lies in the reality that excellence becomes a long-term goal, while equity, because of its immediate crisis character, is more often a short-term goal*" (Gallagher 2012, p.461). Gifted children, therefore, are not always an educational priority, especially in certain contexts. While gifted learners are often described as students with outstanding ability who demonstrate more outstanding performance beyond the age of their peers (Sampson, 2013); in this instance, special facilities or programmes that deviate from the norm within classroom provision are necessary (Heward, 2013).

The pedagogical, social and psychological place where learning process takes place, and which affects students' behavioural, emotional, motivational and cognitive outcomes can be termed the learning environment (Lüdtke et al., 2009; Joel, 2019). A supportive learning environment, including psychological classroom requirements and adaptable school culture (Joel, 2019), is conceptualised as essential for students and plays a salient role in increasing desirable feelings that typically impact students' achievement and psycho-social behaviour (Adeyemo, 2013). This is crucial in the growth and mindset of gifted students. It is imperative that gifted students learn in an environment where the psychological classroom and school culture are conjointly able to address their talent development requirements and where they are stimulated intellectually and socially in relation to these talents (Joel, 2019; Gubbins, Callahan, and Renzulli, 2014). Some categories of students learn quickly and are able to grasp abstract concepts more rapidly than their peers. Placing such students in non-specialised classrooms can be a frustrating or boring experience as they require more of a challenge (Samardzija and Peterson, 2015). Aside from this issue of 'challenge', behavioural, emotional and social issues may be problematic for gifted students in a non-specialised classroom (Cooper, 2012). Scholars such as Cooper (2012) have posited that underachievement may lead to hyperactivity when gifted students are not challenged in

class. Samardzijae and Peterson (2015) additionally argue that some gifted students may have lower patience when learning if they are not adequately challenged. When a primary aged gifted student (i.e. between the ages of 5-12) is placed in a regular classroom and not adequately challenged, they may be more prone to conflict with both teachers and peers (Händel, Vialle, and Ziegler, 2013).

Researchers have discovered substantial inconsistencies in the learning environment through the lens of student perceptions and, consequently, have suggested that the interpretation by students in relation to the classroom environment may be directly linked back to the behaviour and cognition of students (Greene et al., 2004). Contrastively, students who tended to see teachers as harsh have been shown to have lower academic scores when compared to those who do not (Gherasim et al., 2011; cited in Joel, 2019). Peer support is often suggested to motivate learners to collaborate, to follow instructions and to become socially accountable (Gregory and Weinstein, 2004). Some studies have suggested that inspiration by students may have a higher uptake if they have a healthy inspiration for their learning environment (Gherasim et al., 2011; cited in Joel, 2019). If the activities in the classroom focus on performance, grade and ability, then students may be more likely to incorporate performance-focused goals.

Giftedness models that have been formulated in the last three to four decades are primarily characterised by typological or multidimensional ability constructs (Heller, 2013). Based on these factors, Heller and Hany (1986) as well as Heller and Perleth (2008) have contributed to the development of the Munich Model of Giftedness (MMG). Within this model, “giftedness” or “talent” is conceptualised as a multi-factorised ability construct, within a framework of non-cognitive (self-concepts, control expectations and motivations) and social moderators in addition to performance-related (criterion) variables. An extended version, the Munich Dynamic Achievement Model (MDAAM) was developed (Perleth, 2001) to connect the psychometric approach and the process-oriented research. Despite the propositions of MMG or MDAAM, the empirical evidence suggests that school and family socialisation elements are necessary for learning environmental conditions for the construction of giftedness (Heller, 2013). Both of these models are explained in more depth in the literature review (see Chapter 2) and used in the methodology (see Chapter 3).

The MDAAM differentiates between three stages of gifted development (Heller, 2013). These are often associated with the main stages of schooling, which is linked to Plomin's (1994) classifications of "active" (adolescence/adulthood), "reactive" (primary school age), and "passive" (pre-school age) genotype-environment relations. Specific learning progressions and developmental tasks belong to each of the above stages. This study focuses on the stage of the early years (i.e. ages 5-7). According to the MDAAM, the learning environment (in pre-school and primary school age) is one of the critical factors and consists of parents, family climate, peer growth, class climate, peers, and critical life events. All of these elements serve the building up of competencies, which some gifted students may find more challenging.

There is no clear definition of giftedness available, which is something that is further covered in the literature review (see Section 2.2.1), but it is evident that the learning environment plays some role in the interpretation and support for giftedness. Components of the learning environment that directly relate to giftedness are documented in Section 2.3.1. Additionally, the types of people that are classified as gifted have been subject to change as the classification of giftedness has been so fluid; where giftedness once only included 'genius' from an intelligence perspective, its interpretation has broadened over time (see Section 2.2.2).

1.2 Statement of the Problem and Research Questions

The learning environment, including the schools and families of gifted students in the preschool/primary years, does not have enough research to inform teachers, parents and the government on how to properly support and nurture them. In nurturing gifted students, there is the proposition that their potential becomes maximised, ensuring that they have the opportunity to develop into happy, healthy adults who are able to benefit from their gifts. Reports show that there are about 15% of gifted children, who, specifically at an early age, begin to show abilities (Joel, 2019). Given the shortfalls in current knowledge about the nature and scope of support that gifted children require, it is imperative to investigate how the learning environment provided by schools and families are able to nurture their potential. The concept of giftedness may seem rather vague however in an effort to maximise students' learning potential, a substantial number of

models and educational programs have been created to cater to the specific needs of such students (Gubbins, Callahan, and Renzulli, 2014). These studies have demonstrated that their learning environments may have an impact as well (Gherasim et al., 2011; cited in Joel, 2019). Against this backdrop, this study examines the views of young, gifted children and their parents with respect to their constructions of giftedness and the impact of the learning environment, specifically, in the preschool and primary settings. This study investigates the following research questions:

> RQ1. How do young gifted students construct the concept of giftedness and explain the relationship between their learning environment and the accommodation of their learning needs?
>
> RQ2. To what extent, if any, do young gifted students, or their parents, view their learning environment as contributing to the development of their giftedness?
>
> RQ3. What do gifted students and their parents, view as the best possible methods for positive learning development?

1.3 Focus and Nature of the Study

To address the research questions delineated above, this study examines giftedness in young children in the context of Hong Kong, in order to determine how learning environments play a role in students' early years learning needs and development. It is estimated that 2% or 20,000 students aged between 6 and 18, in Hong Kong, require gifted education services (Chan, 2000) however there is a paucity of research in this context, thus this study is a welcome addition to the literature. An extensive definition of giftedness has been provided by the Hong Kong Education Commission (HEC, 1990) whereby gifted students are those with outstanding performance, exceptional achievement and/potential in one or more of below areas (Chan, 2000):

- overall intellectual ability
- overall academic aptitude
- students' leadership ability

- productive or creative thinking
- students' psychomotor ability
- students' visual and performing artistry

The definition of giftedness in Hong Kong, which is the definition applied in this study, is similar to the definition of giftedness encapsulated in the 1972 Marland Report to the U.S. Congress (Chan, 2000). Problematically, this does not tell the whole story, as numerous definitions have been developed across the world which attempt to pinpoint what exactly constitutes giftedness. This makes it imperative to more closely examine the Hong Kong definition using more focused and updated models of giftedness (see Section 5.3.1). Further, nearly 30 years on from the proposition of this original definition, there has been no structured plan as to how giftedness is identified or cultivated among young children in Hong Kong, and there is additionally a lack of research on how structures might be implemented to address this challenge of identifying and cultivating giftedness.

Both educational and home environment are essential to all children, but more specifically, to gifted children (Yuen et al., 2018; Pawilen, 2018). For educational purposes, various programmes in Hong Kong were created that were focused toward teaching gifted students and addressing students' needs, which can include acceleration (Wood, Portman, Cigrand, and Colangelo, 2010), pull-out programs (Yang, Gentry and Choi, 2012), curriculum compacting (Kanevsky and Clelland, 2013), inclusion classrooms (Bangel, Moon, and Capobianco, 2010), self-contained environments (Eddles-Hirsch, Vialle, McCormick, and Rogers, 2012), cluster classes (Brulles, Saunders, and Cohn, 2010) and peer-ability groupings (Vogl and Preckel, 2014). Despite these programs, some argue that gifted students fail to receive effective instruction (Yuen et al., 2018). A study by Pang (2000) found that only one out of four schools in Hong Kong reported using minor on-the-spot modifications, which could include question variation within lessons, to address a more comprehensive ability range. Considering elements beyond the learning environment in schools, Pawilen (2018) suggests that the environment where students live, precisely the family situations, influences characteristics of gifted children. Even though the influences of the family environment have been shown in the literature, this has not been addressed through an

education programme for parents in Hong Kong which accommodates gifted children, though a non-profit called the Hong Kong Academy for Gifted Education (HKAGE) provides at least some opportunities for information (HKAGE, 2020). Family members who are a significant influence and who may play a role in the way in which such children develop and learn should be provided with sufficient information that can help with these issues (Bildiren, 2018). Thus, when provided with a positive home and educational environment, gifted children can then optimise their development.

This study leverages the growing amount of literature on gifted education in Hong Kong. Comprehending the learning environment for gifted students can provide insights to many, including parents and educators. There are also opportunities to influence the government and to provide appropriate support and nurturing to young gifted children. Thus, both policy and academic settings will benefit from the publication of this research. To address the research questions of this study, a qualitative case study methodology (see Chapter 3) comprising multiple cases (i.e. six) has been employed. The case study methodology allows researchers to investigate the effects of the learning environment on gifted students with a higher level of detail and depth, which, fosters a better understanding of the experienced phenomenon by the gifted students in daily life (Neuman, 2014). This strategy is conducted through a thorough investigation of the comparisons in the actual situations which gifted students experienced in their home and school learning environment (Yin, 2014). As a result, this methodology assisted in clarifying variations in the perspectives of gifted students (Yin, 2014). Moreover, this methodology provides the opportunity to better understand the perspectives of the gifted students' parents in relation to the experiences of the gifted students learning in schools versus that of the gifted students learning at home.

Interviews and drawings (see Section 3.4: Research Design) have been utilised to comprehend and explore the lives of the research participants under actual circumstances (Yin, 2014). Data has been sourced from six children from Hong Kong and their parents; the children participants were invited to draw pictures during the interview and then were asked to describe their drawings to the researcher. Their comments from both the semi-structured interviews and the responses to the drawing activities were documented.

Interviews with parents were conducted after those with the children. Of the six children, two children were five years old, two were six and two were seven. There was one boy and one girl of each age. All children had already been classified as gifted by past teachers or educational psychologists specialising in gifted children. Interviews took place in a private tutoring centre, which the children already were familiar with (see Methodology).

Following the interviews with parents and children, all information was transcribed and coded by Microsoft Word and Excel. The drawings were used as a tool to assist in interviews with children. Categorising was possible once key themes were delineated. Thematic coding was used to better comprehend the relationships in the data. The data collected focused on the research questions.

1.4 Thesis Structure

This thesis comprises six chapters. Following this introduction, the literature review is presented in Chapter 2. This includes a more detailed explanation of giftedness, including several of the models that are commonly utilised in current research studies. This is followed by Chapter 3, the methodology, where the methods of this qualitative case study are reviewed, ethics are considered, and data processes are described. Chapters four and five documents the findings and discussion, linking the data back to previous literature, and Chapter six summarises the overall project.

1.5 Summary

The learning environment plays a comprehensive role in the development of all levels of students in school or at home. As the social-cognitive and/or academic growth of gifted students may be potentially hinder, the development of appropriate approaches to support gifted students in their learning environment is concerning (Joel, 2019). Since many gifted students (at least in Hong Kong) in their early years (aged 5-7) are not receiving optimal accommodation to cater to their needs, this study is to address this issue and to explore how the learning environment has an impact on the learning of young gifted students. Besides, this study also attempts to explore more optimal ways of learning for them. By using semi-structured interviews (inclusive of drawings) with the gifted students and their parents, I investigated gifted students' learning environment from multiple

perspectives. I anticipate that this research may be used to help educators to provide proper support for gifted students.

2. Literature Review

2.1 Overview

While the introduction of this thesis has provided an in-depth analysis of the general concept of giftedness, it is imperative to investigate more precise conceptualisations of the term in order to facilitate the goals of this research which is to examine giftedness in the early years, from the perspective of children and their parents. This is because, as will be demonstrated in this chapter, giftedness is an incredibly complex phenomenon with multiple interpretations and several comprehensive models have been proposed by various scholars. Thus, this literature review synthesises the existing literature that relates to the needs of gifted students. Further, this literature review examines theories of giftedness in order to provide a theoretical framework that will underpin this study and responses to its research questions. Therefore, a variety of studies on giftedness, especially in relation to early years education, are presented in this chapter.

In order to create a comprehensive framework of research related to giftedness, the University of Sheffield Library research database and Google Scholar were consulted, with a specific focus on keywords including “giftedness” OR “gifted.” Subcategories included “talented” OR “early years” OR “kindergarten” OR “primary school.” The search was limited to scholarly sources in order to restrict the number of articles to a manageable amount without compromising quality. Finally, the search was limited to articles published in English. The search further encapsulated “learning environments” AND “giftedness,” in order to capture sources that discussed the various needs of students. As I did not set out to write a systematic review, this thesis ultimately included a more extensive range of sources, nevertheless, this initial framework helped to guide my overarching literature review strategy (Ridley, 2012).

In this chapter, a critical overview of the definitions of giftedness, including a focus on how giftedness is conceptualised in the Hong Kong context is provided. In sections 2.2.1 to 2.2.3, current conceptualisations of giftedness are focused on. As there have been considerable links in Hong Kong to standardised testing and the evaluation of IQ (see Section 2.2.4), it is imperative to understand from a nuanced perspective, how Hong Kong

developed its understanding of giftedness. This chapter then moves on to describe the main models associated with giftedness among students. The needs of gifted students, including their social, emotional, academic and intellectual needs are then discussed. The chapter concludes in Section 2.5 with an evaluation of how the literature links giftedness while taking into account the various contributors to learning environments.

2.2 Definitions of Giftedness

A myriad of scholars, teachers, philosophers, and parents have attempted to understand, explain and measure the concept of giftedness. This research focus has culminated in well-received theories and models as presented in Section 2.3. According to some scholars, "giftedness" is just the result of social advantages or endless practise (Subotnik et al., 2011). In studying the related literature, many models or definitions presume that individual abilities can be specifically moulded (Renzulli, 2005). Some models also emphasise that opportunities provided by society are critical in the process of talent development (Subotnik et al. 2011). Schools and families have the responsibility to promote these opportunities and facilitate their development (Subotnik et al., 2011). In this section, the overarching goal is to review and summarise what can be learnt from the literature in order to define the scope of the concept of giftedness in the context of this research.

2.2.1 Giftedness is undefined

Any discussion pertaining to giftedness must be preceded by a nuanced discussion on how giftedness is defined. The definition of giftedness is often equated with IQ (Subotnik et al. 2011), but this is a simplistic outlook and giftedness has multidimensional dimensions that are not merely limited to IQ, as reflected in some models and definitions. There is no universally accepted definition of giftedness and multiple definitions are proposed in the literature. Further, different terms are used in reference to individuals with outstanding performance including 'talented', 'expert', 'precocious', 'eminent', amongst others (Dweck, 1999; Gagn é, 2005; Monks and Kotzko, 2005; Renzulli, 2005).

While the adjective 'gifted' and the noun 'giftedness' are used in a wide variety of settings, these undefined and particularly contested terms, in some circumstances, still refer to the historical perspectives of endowment through God or gods (Sternberg et al., 2011).

There has been significant ambivalence about the concept of giftedness and propositions about giftedness among some in the teaching profession (Smith and Campbell, 2016). This ambivalence is critically explored in Lambert's (2013) review whereby he posits that '*educationalists should at the very least, be keenly aware that the gifted and talented label is a gross, misleading over-simplification of learners' abilities and potential*' (Lambert 2013, p. 102).

Some studies suggest that parents and teachers of children who are involved in gifted education programmes generally reflect Dweck's (1999) propositions on the 'entity concept of giftedness'. This concept implies that giftedness is mostly inherent, and hence typically reflected in early intelligence as exhibited academically via IQ (Smith and Campbell, 2016). Similarly, some teachers have proposed that children who demonstrate giftedness have a 'natural' quality (Smith and Campbell, 2016), which they gained from their parents (Freeman 2012, cited in Smith and Campbell 2016).

The challenge of this study is not only to critique the significant disjuncture among academic theories and 'common-sense' approaches to giftedness in children, but is also to propose the argument that even in the case of theoretical advances, a commonly accepted definition of giftedness has not yet been found. An extensive spectrum of definitions and concepts associated with giftedness characterises the current literature. Researchers and practitioners hold different conceptions of giftedness. For example, Monks and Kotzko (2005) as well as Gagné (2005) argue that giftedness is not objectively observable but rather a social-cultural phenomenon. In contrast, Renzulli (2005) and Sternberg (2005) understand giftedness as a set of attributes (e.g. intelligence, creativity, reminiscence) each of which themselves are hypothetical constructs. More definitions of giftedness are presented and discussed in the following section in order to provide a general understanding of the spectrum of current definitions.

2.2.2 Giftedness as intellectual abilities

Early models of giftedness focused almost entirely on intelligence, equating giftedness with high intelligence quotient, typically known as IQ (Colangelo and Davis, 2003; Gross, Macleod, Drummond and Merrick, 2005). In the late nineteenth to the early

twentieth century, the identification of giftedness and talent was closely linked to intelligence tests. Francis Galton's (1869) book, "Hereditary Genius" was one of the leading publications that proposed a theory of giftedness. The concept of giftedness at that time was conceptualised as "*an ability that was exceptionally high, and at the same time inborn*" (1892: viii) and "*a man's natural abilities are derived by inheritance, under exactly the same limitations as are the form and physical features of the whole organic world*" (1892: 31). Galton supports the view that gifted and talented traits of an individual must be genetically inherited. His theory was supported by analyses of the family heredity of various eminent European men, such as the political elites of the time of George III, Judges of England from 1660 to 1868, and the men of Science as well as Poets, Painters, and Musicians. It is evident that one of the most significant limitations of Galton's theory is class omission (Spearman, 1904). Galton also disregarded the idea that females could also be gifted although this proposition was later disproved. Nevertheless, his work paved the way for the scientific study of giftedness.

Spearman's (1904) literature review delineates trends in the study of intelligence and giftedness from the late nineteenth to the early twentieth century. During this period, intelligence was no longer conceptualised as a divine attribute or on a philosophical basis, but rather, as a subject that could be systematically investigated. Apart from Galton, most of the studies did not show any interest in unveiling the issue of whether intelligence or giftedness was genetically inherited or not. Most efforts were directed towards investigating the relationship between intelligence and cognitive abilities with a focus on abstract concepts such as understanding, attention, and memory. In 1904, Spearman concluded that the "*Tests of the laboratory and the Intelligence of Life*" (p.225) were inadequate due to the invalidity of the methodologies (Spearman, 1904).

More methodologies were developed to measure intelligence. Binet and Simon (1916) developed a psychological test to identify children with an "*inferior state of intelligence*" (p. 40), generally assuming that there was an acceptable rate of progression among children (e.g. milestones). These scholars declared that there were at least three ways to investigate children's intelligence, but not all of them were convincing or practical. Those three ways included a medical test, pedagogical test, and a psychological test. Binet

and Simon regarded the medical test as the most indirect way because the mental status could only be tested out by the physical status. The pedagogical test was viewed as the more direct way, but the psychological test was the most direct way to examine the state of intelligence. In the test, participants were obliged to show their capacity in different levels of assessments in which their ability of comprehension, judgement, reasoning and invention could be investigated through 30 items. Because the psychometric test became the most direct way to assess for giftedness, it was the test that was most rigorously pursued; as a result, the IQ score became one of the most important measurable attributes which were reliable in predicting giftedness (Sternberg et al., 2011).

The methods of identifying gifted individuals were gradually developed to a test-based approach, which presented human intelligence by score or scale. Educational psychologists, such as Lewis Terman (1877-1956), developed the Stanford-Binet Intelligence Scale in the early 20th century by adopting and standardising the Binet and Simon mental scale (Terman 1917). Drawing from Galton's theory that giftedness was a single entity only reflected by high IQ (Lohman, 1993; Terman, 1916), Terman created a classification scheme for the school setting where students with IQ scores over 135 were described as "moderately gifted", while children with scores over 150 were conceptualised as "exceptionally gifted." Those with scores over 180 were framed as "profoundly gifted".

Attempts to classify giftedness gained further momentum following the emergence of Wechsler's (1939, cited in Lohman, 1993) test, which is still widely used in Hong Kong today (see Section 2.2.4). Via this assessment method, "gifted and talented" is tantamount to an intelligence test score of at least 135. In keeping with the notions held by psychologists' (Galton, 1892; Spearman, 1904; Binet and Simon, 1916; Terman, 1916) as previously discussed, Wechsler's definition of intelligence adheres to the notion of intelligence as genetically inherited (Hersen and Ammerman, 2009). Wechsler postulates that intelligence is not directly testable but must be inferred from an individual's thoughts, words, movements, and reactions to different stimuli (Hersen and Ammerman, 2009). These assumptions can be inferred through responses to a test, but not directly as a result of the outcomes. Consequently, a child is categorised as gifted based on intelligence test scores.

While some researchers focused on what kinds of test items should be included in assessment tests in order to identify superior intelligence, Thurstone, one of the earliest researchers to emphasise identification mechanisms of giftedness, developed a model known as 'primary mental ability' in 1938 (Stoeger, 2009). As opposed to viewing intelligence as a general, single ability, Thurstone believed that intelligence was a cluster of abilities which were separated group factors of intelligence that an individual possessed in various ranges (Thurstone 1941).

Seven "primary mental abilities" were delineated in his model. The model was first developed in 1938, via 56 psychological examinations with 250 college students. In this study, seven factors of intelligence were identified. They were: (1) Verbal comprehension, (2) Verbal fluency, (3) Number, (4) Perceptual speed, (5) Inductive reasoning, (6) Spatial visualisation, and (7) Memory. Though Thurstone's model could not demonstrate validity on the definition of giftedness (Cohen and Swerdlik, 2018), this model had considerable influence on later theories, such as the theory of crystallised and fluid intelligence (Horn and Cattell, 1966) and Carroll's (1993) three-stratum theory (Sternberg, 1991), which are highlighted below. It also has links to Gardner's Multiple Intelligences model (Morgan, 1996), which has been largely critiqued in more recent literature (Adcock, 2014; Calik and Birgili, 2013).

In 1966, two critical parts of intelligence: fluid intelligence and crystallised intelligence, were suggested by Horn and Cattell. Crystalised intelligence is defined as "*individual's breadth of knowledge, skills of communication, understanding of conventions, and capacity for reasonable thinking*" (Horn, 1988; p.658). It can be understood as general intelligence, which involves cognitive ability and achievement (Horn, 1988). It is believed to be more related to cultural context and experience, since reasoning ability is one of the indicators in the crystalised intelligence test, and reasoning depends mainly on the traditional knowledge of the culture. Fluid intelligence, on the other hand, is generally conceptualised as more related to how efficient the central nervous system functions. Thus, abilities such as concept formation, inductive reasoning, visual and auditory learning, visual conceptualisation, effectiveness in using problem-solving strategies, number reverse memory, verbal analogies reasoning, set recognition, problem definition, assessing everyday

argument and evidence, story problem representation and numerical calculations are prioritised in fluid intelligence.

In 1993, Carroll proposed a three-stratum perspective, which suggested that intelligence was only one of cognitive abilities. It was further proposed that the structure of cognitive abilities is divided into three strata that differ in breadth and generality. The most general level and the broadest of ability called the g factor, was proposed to include all aspects of intellectual ability, characterized by stratum III. At stratum II, specialised abilities that occurred in broad domains of intelligent behaviour were reflected. They included general memory and learning, processing speed, broad cognitive speediness, broad visual perception, broad auditory perception, broad retrieval ability, fluid intelligence and crystallised intelligence. Stratum I reflected substantially specialised abilities, some of which illustrated Thurstone's primary mental abilities (Carroll, 1993).

Carroll's model and the model proposed by Horn–Cattell were synthesised into the Cattell–Horn–Carroll theory. Similar to Carroll's three stratum theory, the Cattell–Horn–Carroll theory also espoused human cognitive abilities within a hierarchy that comprises three strata which also differ in breadth and generality of knowledge or abilities. Those three strata are general intelligence (stratum III), broad cognitive abilities (stratum II), and narrow cognitive abilities (stratum I). Hierarchical definitions of intelligence have extended the concept of abilities. Though these theories are not necessarily theories of giftedness by themselves, they indirectly define giftedness through the suggestion that abilities can be categorised hierarchically.

What has been documented through history has become particularly important for the positioning of how giftedness is conceptualised today. There have been considerable links, in Hong Kong, to standardised testing and the evaluation of IQ. While Hong Kong has expanded its understanding of giftedness (see Section 2.2.4), it is important to understand how Hong Kong accumulated in its understanding of giftedness over time, from a historical perspective.

2.2.3 Giftedness as talent development

The above discussion shows that the most common conceptualisation of giftedness in the literature, is high IQ or cognitive ability. However, several contemporary models extend this notion of giftedness to other domain-specific abilities.

In 1982, Delisle and Renzulli introduced the idea that non-intellectual elements are equally as crucial for creativity as intellectual elements are. Also of interest are elements, such as concentration on tasks, the ability to commit time, in addition to student engagement, which are all elements that can be directly linked back to Renzulli's model. Renzulli (1978, 2005) re-examined the definition of giftedness by integrating the research findings of past notable researchers and psychologists, while concurrently focusing on the validation of elements beyond ability that played essential roles in actualising potential or future achievement. His research led to the following Three-Ring Definition (see Figure 1):

> *Giftedness consists of an interaction among three basic clusters of human traits – these clusters being (1) above-average general abilities, (2) high level of task commitment, and (3) high levels of creativity. Gifted and talented children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. Children who manifest or are capable of developing an interaction among the three clusters require a wide variety of educational opportunities and services that are not ordinarily provided through regular instructional programmes.* (p.261)

Renzulli's (2005) Three-Ring Definition defines giftedness as the connection of three components: creativity, task commitment and above-average ability. According to Renzulli, each character exists as a significant element in the emergence of gifted behaviour. Renzulli's compartmentalised above-ability into two types: general ability and specific ability, which represent the top 15% to 20% of any area. General abilities are linked to general intelligence or broad domain ability, such as verbal and numerical reasoning, spatial relations, memory, and word fluency. Specific abilities on the other hand, pertain to "*the capacity to acquire knowledge, skill or the ability to perform in one or more activities of a*

specialised kind within restricted range" (Renzulli 2005, p.259). Specific ability cannot be easily measured, yet it can be tested through various achievement tests or tests of aptitude.

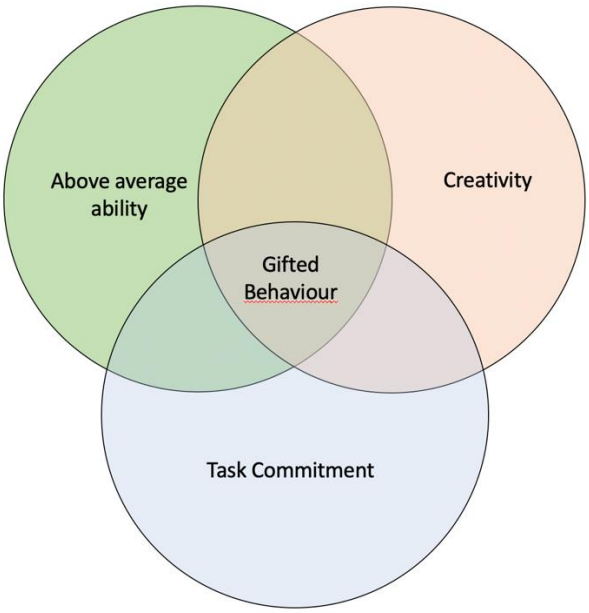

Figure 1 Three-Ring Model (Renzulli, 1978)

Renzulli (2005) has also had a significant influence on the study of giftedness through the suggestion that two main types of giftedness can be identified: "schoolhouse giftedness" and "creative-productive giftedness." Schoolhouse giftedness is largely understood to include test-taking or lesson-learning giftedness and is observed in the school setting. Since this is the most straightforward form of giftedness to identify via IQ test scores and/or other measures of cognitive ability, Renzulli (2005) argued that an indication of creative-productive giftedness also needs to be devised. Renzulli (2005) explicitly proposed that:

> *History tells us it has been the creative and productive people of the world, the producers rather than consumers of knowledge, the re-constructionists of thought in all areas of human endeavour, who have become recognised as 'truly gifted' individuals. History does not remember persons who merely scored well on IQ tests…* (p. 256).

The tenor of Renzulli's (2005) proposition is that students who demonstrate creative-productive giftedness are typically understood to be superior producers of knowledge, and in contrast, students who are above average in schoolhouse giftedness are conceptualised as excellent consumers of knowledge (Renzulli 2005). Renzulli's (2005) propositions offer a practical resource for gaining a nuanced understanding of giftedness (e.g. Bain et al., 2010), rendering it a useful resource for the coding of data in this study (see Chapter 4).

The talent development pathway of the Three-Ring model is divided into three stages (Renzulli and Reis, 1997). At stage one, Renzulli and Reis suggest providing wide-ranging access to enrichment. At stage 2, students who demonstrate commitment and motivation are provided with more opportunities that focus extensively on domains, content skills, and content knowledge. Stage 3 involves age-appropriate guided support for creative projects that would allow for creative productivity.

Although Renzulli's model increases the chances that the creativity of students will be more readily identified because of the expansion of the criteria employed in the identification of gifted students, and the inclusion of intertwined elements, the model has been extensively criticised. Renzulli's proposition that concentration and interest in a task and creativity should be considered as lesser than the cognitive components of giftedness, as they are not inherent, but emerge from the process of talent-development, has been problematised in the literature (VanTassel-Baska, 2005). Renzulli attempted to address these criticisms by emphasising the need to formulate productive and creative skills along with what is understood to be knowledge acquisition, and as a result, to present evidence that broadened identification procedures reduce inequalities (Renzulli 1999).

The Three-ring model is vital to this study. With Renzulli's suggestion that gifted behaviour emerges from three components: creativity, task commitment and above-average ability, two of the components; creativity and above-average ability, are adopted as the primary indicators of gifted students in this study. Assessment instruments are also utilised to examine the ability of gifted students within those two components (see 2.2.4).

Apart from Renzulli's Three-Ring model, Sternberg proposes a WICS model of giftedness that focuses on non-intellectual factors and echoes the conceptual development of giftedness in Hong Kong. In the WICS model, giftedness is conceptualised as an amalgamation of wisdom, intelligence, creativity, and synthesis (Sternberg, 2005). Also, wisdom, intelligence and creativity are divorced from specificity and are argued as being relevant to all aspects of learning.

One of the components in the WICS model, intelligence, is elaborated upon based on Sternberg's previous theory of 'successful intelligence'. It is defined in terms of how a person can respond to their environment and learn from it (Sternberg, 2005). Sternberg delineated four characteristics of intelligent persons. These characteristics entail:

(1) Being able to set goals and achieve them,

(2) Being able to identify strengths and weaknesses and formulate the pattern to work within,

(3) Being adaptable to the environment and find the balance by shaping the environment since most of the 'eminent people' do not only adapt themselves to the environment but also change it to favourable conditions,

(4) A range of abilities, such as analytical, creative, and practical ability. (Sternberg, 2005).

Another component, creativity, is described as the ability to re-create some undervalued ideas as some novel and valuable ideas which are often rejected, but potentially have impacts on our world (Sternberg, 2005). As per Sternberg's description, in order to access creativity within an individual, ten attributes are required. These attributes include:

(1) Redefining problems

(2) Questioning and analysing assumptions

(3) Realising that creative ideas do not sell themselves

(4) Recognising that knowledge is a double-edged sword

(5) Willingness to surmount obstacles and take sensible risks

(6) Tolerance of ambiguity

(7) Self-efficacy

(8) Finding what one loves to do

(9) Willingness to delay gratification

(10) Courage

The most salient feature of the WICS model is wisdom which is defined as "t*he application of intelligence and creativity as mediated by values toward the achievement of common good through a balance among intrapersonal, interpersonal, and extra-personal interests*" (Sternberg 2005, p334). Sternberg believes that a gifted person can balance the interests of himself/herself (intrapersonal), others (interpersonal) and the context within which one lives (extra-personal) such as one's country or city. Although Sternberg's interpretation is rooted in wisdom as part of the WICS model, this component may have cultural dimensions in the Chinese context (Fong, Yuen and Roeper, 2014). In ancient Chinese teaching, such as Confucianism, wisdom is what a "superior individual" would have, and hence he/she can make the right judgement. In Taoism, wisdom is a 'superior individual' who would have to understand the Tao (the truth) and hence would know how to co-exist with nature in a harmonic manner. In studying in the WICS model and ancient Chinese teaching, it seems that both concepts suggest that individuals are provided with a special "gift" that has to be unleashed for the benefit of the human race (Fong, Yuen and Roeper, 2014). The concepts identified here may be linked to Chinese culture, but the approach is more abstract than the Three Ring Model described above. Each of the attributes can be placed within a ring in the Three Ring Model, making these components useful for this study (see Section 4.1).

Via the Three-Ring model and the WICS model, Renzulli and Sternberg respectively provide a valuable interpretation of the construct of giftedness. As a starting point of

discussion, both models offer dynamic and developmental approaches to understanding giftedness because they focus on other dimensions of the concept, beyond inherited latent traits. The manner in which intelligence is conceptualised by Renzulli and Sternberg, in terms of intelligence, creativity, task commitment, and wisdom, illustrates the point that giftedness cannot be simply perceived as rooted in the genetic makeup of an individual. Crucially, these models also deviate from the traditional ability-centric conception of giftedness. Taking creativity as an example, both Renzulli and Sternberg define it in terms of skills or abilities that can be found in creative persons. This suggests that it is not only ability that is essential; so are inclinations. These approaches view creativity in terms of the abilities that are identifiable in gifted persons, implying that gifted persons are inclined to see things in new or different directions (Dai, 2003). Third, in relation to identification, assuming that multiple characteristics of above-average intelligence, creativity, task-commitment and knowledge are developmental and emerge and evolve over time, the identification model associated with a once and for all framework becomes problematic. Identification must therefore be followed by future-oriented educational programmes (Dai, 2003); otherwise, the focus on identification becomes problematic (see Chapter 6).

Giftedness has moved from being undefined or seen as 'divine' ability, to being viewed as more than observable abilities. Different approaches to this topic are developed in the literature and are either based on a set of theoretical principles and premises, or a series of observations of performance and behaviour deemed 'gifted' (Dai, 2003). Some of the above theories imply that giftedness can be identified by merely checking IQ score while others imply that giftedness is more than observable behaviour. Nonetheless, the identification of giftedness does not stop at the point of identifying gifts or the gifted person. In the following section, some models showing the trajectory of how an aptitude becomes achievement are discussed.

2.2.4 Giftedness in Hong Kong

With the growing variety of educational programmes advanced for gifted students in Hong Kong since the early 1990s, the selection and identification of children who may have the opportunities to benefit from those accommodations have emerged as a significant concern in the field of education (Chan, 2000). Even though it is understood that giftedness

and that talent should be evaluated through a variety of dimensions, IQ tests are the main identification measures that are generally applied to government provisions in Hong Kong.

The fourth report of the Hong Kong Education Bureau (EDB), has adopted the United States Federal definition of giftedness, which covers proven achievement in any individual as regards the following domains: specific academic abilities, general intellectual ability, psychomotor ability, performing and visual art, productive and creative thinking, as well as leadership ability (Hong Kong Education Commission, 1990; Hong Kong Board of Education, 1996). This is the underlying definition that comprises giftedness in this thesis, and upon which all of the research findings of this study are based. This definition aligns with existing models of giftedness (see Section 2.3) and therefore this overarching definition is captured in the interpretation of the research findings of this study.

Available standardised instruments aimed at providing assessment and identifying the intellectually gifted, the academically proficient and the creatively gifted are adopted in Hong Kong's identification procedure (Chan, 2000; Chan, 2010). For intellectual ability assessment, Hong Kong uses standard progressive Matrices (SPM) (Hong Kong Education Department, 1986) and the Hong Kong Wechsler Intelligence Scale for children (HK-WISC), which is the same test as the 'standard' Wechsler test administered in the United States. For academic attainment assessment, Hong Kong Attainment tests on English, Chinese language and mathematics (Hong Kong Education Department 1992) are utilised. Two more instruments are used to assess divergent thinking or creativity, specifically, Torrance tests of creative thinking (TTCT) (Spinks et al., 1995) and the Wallach-Kogan test (WKT) (Wallach and Kogan, 1965, cited in Chan, 2000).

Aside from the creation of standardised measures for the identification procedure, various types of informal measures have also been used in Hong Kong. Informal measures mean that students with outstanding performance can be nominated by parents, teachers, peers and students. For example, parents or teachers can be requested to decide the appropriateness of students in gifted and talented programmes, possibly with few explanations, primarily according to their own observations of the academic and intellectual competencies of students, their background experience, and their personality traits. In this

way, identification can be enacted via informal procedures in order to assess intellectually, academically, and creatively gifted children (Chan 2000). Parents' and teachers' nominations are relatively standard in Hong Kong, and they regularly serve as the premise for an intellectual assessment follow-up at the education psychologist services of the education unit of the Hong Kong Education Department in relation to gifted students (Chan, 2000). There is a paucity of research in the Hong Kong context, which means that the work done by the Hong Kong Education Department has largely gone unchecked, as the impact is not regularly assessed. This further links to the need for this current research project.

Though assessments are provided to identified gifted children, effective ways to implement gifted pedagogy and curriculum in both kindergartens and primary schools are limited. Early childhood education was provided in Hong Kong after the Second World War since a large number of refugee parents who had to work and kindergartens to take care of their children were needed (Faas, Wu & Geiger, 2017). Following by the introduction of 9-year (from primary one to secondary three) compulsory education in 1971 and 1979, early childhood education was also administered by the Hong Kong Government since 1980s (Hong Kong Government, 1981). At that time, all kindergartens were privately run by non-government organisations or other profit-making corporates (Faas, Wu & Geiger, 2017) without an official developed curriculum until 1984 (Curriculum Development Council, 1984).

Ever since the first Guide to the Kindergarten Curriculum (Curriculum Development Council, 1984) was presented, the Hong Kong kindergarten curriculum has been adopting the approaches from the Western societies, such as the thematic approach and the project approach (Faas, Wu & Geiger, 2017). According to the government document, kindergartens are advised to provide a child-centred learning and teaching approach, however, teaching themes are still generally selected by teachers and schools instead of characterised by children's experiences and interests.

Affected by the Chinese and Confucian culture such as conformity, the kindergarten curriculum still tends to be structured and didactic. Individual needs were therefore difficult to be met in such classrooms (Faas, Wu & Geiger, 2017). Though "Catering for Learner Diversity" is highlighted in the Guide to the Kindergarten Curriculum (Curriculum

Development Council, 2016), recommendations are only provided for children with potential difficulties in development and non-Chinese speaking children. For those who are gifted and talented, the document does not mention any strategies to promote their learning.

The curriculum framework of primary school in Hong Kong comprises three interconnected components: (1) knowledge in key learning area, (2) generic skills, and (3) values and attitude (Curriculum Development Council, 2014). Among these three components, eight key learning areas (Chinese language education, English language education, mathematics education, personal, social and humanity education, science education, technology education, arts education, and physical education)and nine generic skills (collaboration, communication, creativity, critical thinking, information technology, numeracy, problem-solving, self-management, and study skills) are developed through five essential learning experience (moral and civic education, intellectual development, community service, physical and aesthetic development and career-related experience). All the schools in Hong Kong are recommended to sustain a school-based curriculum according to the curriculum guide which is provided by the government (Curriculum Development Council, 2014).

A three-tiered model to support gifted students was introduced by the Hong Kong Education Bureau in 2000. Instead of a separated curriculum, the three-tiered model serves as an implementation framework which is expected to be implemented across the identification procedures and curriculum design. Following the curriculum guide, the gifted education curriculum is "*based on the normal class curriculum, but with appropriate modifications that accord with the characteristics of gifted students and meet their requirements*" (Curriculum Development Council, 2014, section 4.5.1). More specifically, tier one requires modification in regular classroom teaching, such as tapping students' potential in creativity, problem-solving skills, leadership ability, etc. Tier two specifies in pull-out programmes provided by schools. Students who demonstrate outstanding ability in certain subjects or interdisciplinary areas will be recommended to take additional training or enrichment programmes provided by his/her own school. The provision of the programmes is entirely based on school policies instead of the needs of gifted students. School managers may consider different factors, such as cost-effectiveness, availability of human resources or

venues, to design the structure of the pull-out programmes. Out-of-school enrichment programmes are provided in tier three for exceptionally gifted students (Cheung, Hui & Cheung, 2020). Though the three-tier model is widely adopted in all the schools in Hong Kong, the efficacy of three-tier models, including the school-based model, remains unclear.

2.3 Models of Giftedness

Theories on giftedness gave way to models (i.e. visual representations that are purposeful representations of reality), which allowed for a much more concrete and visual understanding of how giftedness can be constructed. When examining these models, it became imperative to distinguish between giftedness as a construct and the notion of talent. Talents are generally understood to be transformed through developmental trajectories, whereas giftedness is more akin to natural abilities. While the models below are discussed in more detail in each section, a more detailed differentiation between talent and giftedness is also documented in Section 2.3.1. This section reviews two recent models of giftedness, the Differentiated Model of Giftedness and Talent (Gagné, 2005) and the Munich Dynamic Ability Achievement Model (Heller, Perleth and Lim, 2005). The purposes of reviewing Gagné's model stems from the fact that Gagné not only provides an explanation pertaining to the significance of environmental factors in the construction of giftedness, but also specifies and distinguishes the differences between gifts and talents (see 2.3.1). This specification is vital to this study, especially when interviewing parents and discussing how the family environment impinges on their child's development of gifts and talents. The purpose of reviewing the Munich Dynamic Ability Achievement Model is that this model explains how schools and families influence the construction of achievement (or talent, in Gagné's term) in different stages. It further provides a framework and justification for studying the construction of giftedness by different schooling stages.

2.3.1 Differentiated Model of Giftedness and Talent (DMGT)

By placing environmental factors in the model of giftedness, Gagné developed a model that focuses on environmental factors in specific ways (Figure 2). Gagné introduced the Differentiated model of giftedness and talented (DMGT) model in 1985 (Gagné, 2005),

based on two overarching arguments. The first argument pertains to the idea that giftedness or talents include potential or achievement, aptitude or realisation, and promise or fulfilment. The second argument concerns the distinction between talent and giftedness. In DMGT, giftedness is equivalent to the possession of natural abilities, whereas talent is understood to be an '*outstanding mastery of systematically developed abilities or skills or knowledge*' (Gagné, 2005, p.111). It is a requirement that individuals who either have giftedness or talents are placed in at least among the top 10 per cent of age peers who are or have been active in their fields (Gagné, 1999). In other words, in the DMGT model, giftedness concerns the abilities which have not yet been manifested because further knowledge and skills to master those abilities may be required. Once those gifts are systematically mastered, they then become talents. In order to cultivate natural abilities (gifts) to be talents, Gagné proposed another four components, which are intrapersonal catalysts, environmental catalysts, chance, and learning and practising. Hence, combined with the critical components of the model, giftedness and talent, the DMGT model has a total of six components which are subdivided into two trios in Gagné's discussion. One is the talent development trio, and the other is the trio of catalysts.

In the talent development trio, three components, which are giftedness, talents, and learning and practising, are included. Giftedness, as mentioned above, includes observable, natural abilities such as intelligence, creativity, socio-affective skills and sensorimotor skills. It also includes the abilities needed when acquiring new skills and knowledge. Talent, also, as mentioned above, is a set of well-trained skills in one, or more than one, particular field of human activity. It is measurable through outstanding performances which demonstrate the ability to master a specific set of skills. More importantly, talent is a developmental construct, which means that the better the mastery of skills, the better the talent can be performed. The last component in this talent development trio is learning and practice, which is the process of how natural abilities (giftedness) develops in relation to the skills that are classified as expertise or competence in any occupational field (talents). This process occurs via four different stages: maturation, informal learning, formal non-institutional learning, and formal institutional learning (Gagné, 2005).

The trio of catalysts consists of three major components in the DMGT model, environmental catalysts, intrapersonal catalysts, and chances. Gagné (2005) highlighted that the word "catalysts" is used because it refers to a chemical substance that causes acceleration. It implies that the process of talent development will not cease when the trio of catalysts is present. In other words, giftedness and talent development can be facilitated, but on the other hand, can also be hindered when catalysts are absent. This leads to further interpretation of the models of giftedness and how they might apply within the context of the definition of giftedness provided (see Section 2.2.4).

The first catalysts in this trio, intrapersonal catalysts, are divided into five parallel subcategories, which are physical characteristics, motivation, self-management, volition, and personality. Physical characteristics are factors where individuals can attain a high physical performance level. For instance, a specific kind of sport needs a certain kind of physical characteristic to facilitate performance. The other two subcomponents, motivation and volition, are similar but different. Motivation is a goal-setting process which includes the ability to identify and select interests, needs, motive, passions, and values. Volition is a goal-attainment behaviour, which requires the individual to include the ability of time and resource allocation, perseverance, effort, delay of gratification, and self-regulation. The fourth subcomponent is self-management which Gagné understood as "*working toward the optimal integration of one's emotional, spiritual, intellectual, and physical life, at every stage of one's life. It also means recognising opportunities for using appropriations (self-knowledge, knowledge of others and the environment), relations (mostly interpersonal), decision, and action as resources, to respond to one's needs and development*" (p.105). The final subcomponent is personality, which Gagné (2005) proposed to be one of the most recognised models in the field to explain. Gagné (2005) adopted the Five-factor model to understand personality. Those five factors are extraversion, agreeableness, conscientiousness, neuroticism, and openness. All of the above subcomponents in the intrapersonal catalysts play an integral part in the development of talent.

The other catalysts in the trio of catalysts are environmental catalysts, which Gagné (2005) suggested includes four distinct environmental inputs for better understanding. They are milieu, significant others, provisions, and significant life events. For milieu, it is

mentioned at two levels, macroscopic and microscopic. The macroscopic level encapsulates the geographical location of one's living and learning environment, social and political conditions amongst others. The microscopic level encapsulates living conditions, such as the home environment; family structure, and financial stability. For significant others, this means that their impact on the immediate environment of gifted and talented young people can make an essential influence in the development of their gifts and talent. The provisions subcomponent is the intervention of enrichment, grouping, and acceleration. Finally, significant life events, such as winning a prestigious award, the death of significant others, suffering from a significant illness or accident, can prominently affect the progress of the development of talent.

Chance, first introduced in the theory of giftedness and talent by Tanenbaum in 1983, is the catalyst that has an influence on all the environmental catalysts (Gagné, 2005). Gagné (2005) believes that a human does not have a choice in at least two aspects: birth and background. Therefore, chance does have an opportunity to affect all the causal components in the DMGT model except for the learning and practising component.

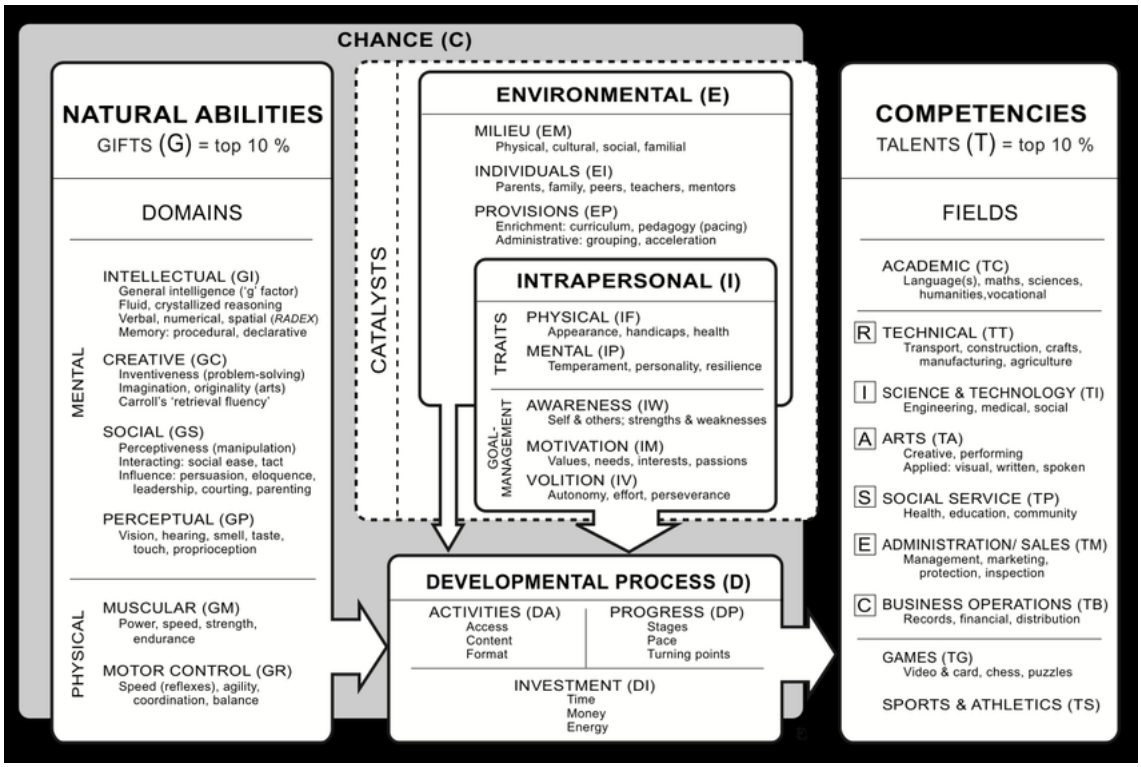

Figure 2 Gagné's Differentiating Model of Giftedness and Talent (2008 update).

In the DMGT model, it is Gagné's principal aim to uncover the critical environmental influences (home, school, parents, encounters, and encounters), non-intellective variables (motivation, personality), as well as learning, training, and practising, all of which transform primary, inherited "gifts" (creative, sensorimotor, intellectual) into particular talents (leadership, music, art, science, mathematics, language amongst others) in everyday life. All of these influences are particularly relevant to my study. Gagné first realised that "gifted" and "talented" are conceptualised as synonymous and he therefore sought to establish distinctions between the concepts. Through the DMGT model, Gagné articulates the factors that are salient for the development of giftedness and talent systematically.

Giftedness is conceptualised in terms of the natural abilities that are needed in learning, whereas talents are the outcome of the transformation through developmental trajectories. In this study, I attempted to explore the effects of the learning environment of gifted children. It is vital that the participants and I have the same (or at least similar) understanding of giftedness and talents. Therefore, to comply with the definition of gift and talent in the DMGT model, I used the word 天資 for 'gift' and 才能 for 'talent'. The word 天資 may not be able to reflect the meaning of natural ability completely, but it connotes that ability is innate or from heaven. The word 才能 can be divided into two words, 才, which means material, and 能, which means able. Literally, 才能 can be understood as some kind of 'able traits' which is what talent is interpreted in the DMGT model.

As part of my inquiry into the effect of the learning environment on gifted young children in my study, this model provides an understanding of how environmental factors accelerate the development of both giftedness and talent. The model provides a theoretical framework of how a school might structure the development of talent in the education system. In Gagné's (2015) article, he suggests that the development should be adopted at all levels from K-12.

2.3.2 Munich Dynamic Ability Achievement Model (MDAAM)

In many of the above conceptions of giftedness, scholars imply that non-cognitive personality characteristics, such as achievement motivation, task commitment, or interests,

are to be afforded a highlighted focus in relation to achievement development (Heller et al., 2005). In the Munich Longitudinal Study of Giftedness (Ziegler and Heller, 1997; Heller et al., 2005), questions are raised as to whether achieving excellence in a specific area is linked to the time spent in active learning. This concern then links to the realisation of how the resources each individual has at his/her disposal can be used for personal development (Heller, 2013). Heller, Perleth and Lim (2005) therefore developed the Munich Dynamic Ability-Achievement Model (MDAAM).

The model attempts to combine valuable perspectives of giftedness and to categorize them into a consistent frame (Heller et al., 2005). In doing so, individual characteristics, which could include elements of '*attention and attention control, habituation, memory efficiency (speed of information processing) and working memory aspects, level of activation, and aspects of perception or motor skills*' (Heller, Perleth and Lim, 2005; p. 164) are identified as necessary components of the learning process of gifted persons (Perleth, Schatz, and Monks, 2000).

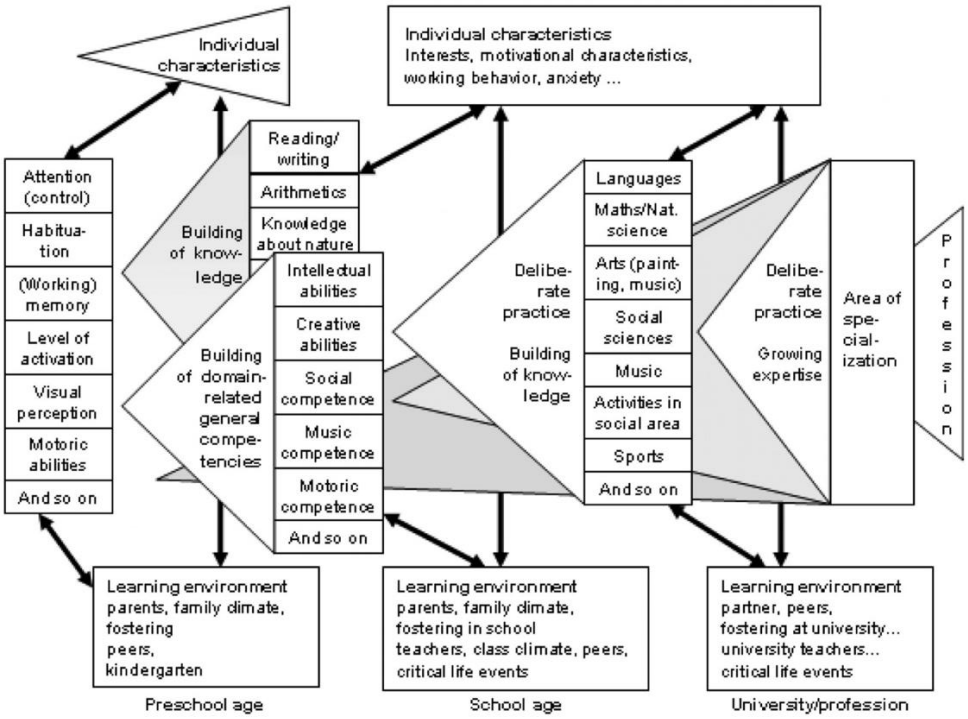

Figure 3 The Munich Dynamic Ability–Achievement Model according to Perleth (2001, p. 367)

The model differentiates between three or four stages of talent development, which can be linked to the main stages of schooling: preschool-aged, school-aged, and professional training or university, making this model particularly relevant to my study. As a result, I focus extensively on the building of domain-related competencies (see Chapter 3). Those stages also refer to the Plomin's classification (1994, cited in Heller, 2013) which identifies preschool-aged learners as passive learners, school-aged learners as reactive learners, and the adolescent learner as active learners. Each stage has specific learning processes. Those processes serve the building up of competencies. In Figure 3, the triangles in the middle symbolise the building up process of specific competencies, abilities and knowledge. The vertex of the triangles at the left points out when the particular learning process begins. So, the domain-related competencies, such as social competencies, musical or motor abilities, creative or intellectual abilities, are formed during the preschool year. The accumulation of knowledge (reading and writing, arithmetic, knowledge about nature) is contrasted by the advancement of these competencies. During early schooling years, the creation of knowledge in different areas such as arts, music, natural and social sciences, languages, and social behaviour begins, and being in goal-specific and active learning processes is important for acquiring this knowledge; in other words, through deliberate practice. By the university stage, the increasing specialisation and development of expertise starts, although it can also start considerably earlier (Heller, 2013).

The MDAAM is not only able to identify the knowledge domains and ability factors, in addition to the particular learning processes, it also emphasises the aspects of the learning environment that are linked to the development of achievement and subsequent expertise. In this way, different elements for the three main phases of development are emphasized (see Figure 3). Overall, the influence of the family is the main focal point in the first years, which is followed by the characteristics of the school's learning environment, which gains significant influence over time.

The objective of this study is to focus on the effects of the learning environment in giftedness construction at a specific stage. This study needs to sample participants of different ages (i.e. from 5-7 years) to investigate the effects of the learning environment on them. Referring to the MDAAM, families and schools gain more and more influence in the construction of achievement. As a result, this study investigates how children and their parents perceive the link between giftedness and the learning environment.

2.4 The Needs of Gifted Students

The above study has provided significant insights into the distinct nature of the intricacies between giftedness and talents and the degree of the influence of the learning environment in a particular academic stage. In order to facilitate the objectives of this study, research that investigates the social and emotional as well as the academic needs of gifted students is required for review so as to gain more understanding of how schools or families can support gifted students.

2.4.1 Social and Emotional Needs

Because of the various characteristics associated with giftedness, gifted students have the potential to be at a heightened risk of experiencing social-emotional difficulties.

In spite of a diverse range of cultures and socioeconomic background, including the various degree of talents and abilities of students, commonalities are often found among gifted students (Blaas, 2014). According to Blass 2014, gifted students may be more likely to experience social isolation, and tend to be perfectionists and sensitive, which may highlight certain risk factors relating to poor social-emotional difficulties. In addition, gifted students may be at risk of both externalising and internalising challenges, such as low self-esteem, failure-avoidance behaviour, irritability, frustration, anger, anxiety, and depression (Blaas, 2014). These externalising and internalising challenges, which can include failure-avoidance and negative perfectionism, can link back to underachievement and poor social-emotional adjustment (Peterson, 2006).

In order to address the above challenges, the classroom setting is a particularly valuable learning environment that can prevent or minimise some of the problems faced by gifted children, though it is acknowledged that poor classroom experience can also

exacerbate difficulties. When it comes to the teaching of gifted children in a regular classroom, behavioural issues have always been identified (Ryan and Coneybeare, 2013). Gifted students can modify the focus of the discussions in the classroom to a theme that is different from the lesson plan by asking questions. In addition, gifted students may become discouraged and cease to ask questions completely, which may lead to levels of disinterest in all lessons and/or schoolwork if they do not receive encouragement or enthusiasm from teachers and peers (Ryan and Coneybeare, 2013). This implies that gifted students need a learning environment that is able to support their social and emotional needs through praise, focused attention, and guidance. Siegle (2015) suggested in his study that the well-being of gifted students in educational settings goes far beyond academic needs that are obvious. He further suggests that social and emotional well-being must also be considered. Additionally, Gallagher (1996) suggests that "*if a highly gifted child was in a group of average or below-average ability children, he was more likely to have social problems than if he was a member of a group of high ability children*" (p. 43). This creates a dichotomy; on the one hand, gifted students may need a supportive group of peers to meet their social and emotional needs, but on the other hand, because gifted children may have significantly different needs, putting them all in one classroom may not provide the support that they each require.

Another pitfall that can occur is a situation whereby teachers are not able to meet the needs of gifted students. In this case, students may become bored, which culminates in a laidback attitude towards their study or challenging behaviour (Kurt and Chenault, 2016). In addition, gifted students can be identified as 'sensitive perfectionists' who are more likely to internalise both successes and failures (Blaas, 2014). This has the potential to make every assessment a very high-stakes process for the gifted student. As a result, gifted students may need ungraded work that cannot be perceived as high stakes. This type of perfectionism can discount the value of schoolwork for students because they use it as a coping mechanism to protect their emotional well-being (Blaas, 2014).

In terms of the social and emotional needs of gifted students, the literature points to additional support from teachers in the classroom and a shift towards formative assessment that promotes understanding, rather than perfection. In a typical school classroom with

large class sizes and varying levels of student needs among students, meeting the social and emotional needs of gifted students can be challenging. Furthermore, because gifted students may not have peers that can relate to the level of need, social problems may arise.

2.4.2 Academic and Intellectual Needs

There is a drastic difference in the cognitive and developmental abilities of gifted students in comparison to the general students (Leikin et al., 2014; Samardzija and Peterson, 2015) as well as from each other. According to van der Meulen et al. (2014), gifted students require academic rigour and stimulation that aids in their intellectual abilities so that they can further develop in the classroom. For instance, Chan (2001) found that gifted students tended to enjoy discussing challenging and controversial topics over topics that they could quickly learn. Gifted students generally require the appropriate stimulation and challenges to create an environment that allows them to develop and to deviate from emotional or motivational problems (Gubbins et al., 2014). Therefore, gifted students should be exposed to various teaching strategies, programs and techniques, so that they are adequately challenged.

Allen et al. (2016) have shown that gifted students acquire knowledge in different ways from their classmates. Specifically, gifted students are inclined to study at levels that are more abstract or accelerated (Yamada et al., 2014). The teaching in a regular classroom is specially arranged to address the needs of the majority of students, which means that gifted students end up unchallenged and exasperated (Samardzija and Peterson, 2015).

Since the needs and experience of gifted students are unique, their talent construction lies within a supportive learning environment in addition to stimulating educational material as essential in the development of optimal learning and growth. Additionally, gifted students can be more prone to experience a socio-academic support structure that is absent or poorly constructed, and so, they may not be able to overcome this structure to reach certain levels of achievement. As such, the focus of the following section is to examine the studies regarding the learning environment and how it can nurture the talent construction of gifted children.

2.5 Learning Environments

The quality of the learning environment plays a significant role in gifted student achievement development (Joel, 2019; Heller et al., 2005). School is the place in which students' learning and social activities occur. In the giftedness models discussed above, DMGT and MDAAM, gifted students need facilitation in the learning environment for them to develop their giftedness (Gagné, 2005) or their achievements (Heller et al., 2005). However, the question of how the learning environment can facilitate talent development has not yet been answered. Though how the learning environment facilitates talent development is not indicated in the above models of giftedness, Ranchelor (1992) suggests that an effective school and corresponding classroom can be explained as a location that easily is able to encourage students to achieve their success.

It is imperative that learning environments are defined and contextualised in this study. Students spend vast amounts of time at school, estimated at approximately 7,000 hours by the end of primary school (Fraser, 2012). School, therefore, plays a significant role in students' learning environments. However, in the literature, the fields of classroom-level and school-level environment are interestingly unique. School-level environment research attributes much of its theory, instrumentation and methodology to previous research relating to organisational climate largely focused in business contexts (Anderson, 1982). The school-level environment also tends to be linked with the field of educational administration and is based on the assumption that schools may be interpreted as formal organisations (Thomas, 1976; Robinson and Campbell, 2010). As the purpose of this study is to understand the effects of the learning environments on gifted children and how children are able to address their own positive learning development (see Section 3.1: Research Questions), this section makes an effort to discuss the classroom-level learning environment through three dimensions, the psychological environment, social environment and pedagogical environment (Khine et al., 2017; Zandvliet and Frase, 2005; Skordi and Fraser, 2019). Via an understanding of the literature pertaining to these issues, I attempt to link the learning environments acknowledged in the research to the concepts of giftedness previously discussed, by (1) defining the scope of the inquiry, (2) defining the items of certain areas of study, and (3) framing the interview questions (see Background on Giftedness).

2.5.1 Classroom

In a classroom, there are two significant components, the human component and physical component (see Section 4.4.2 in the Findings Chapter). The physical component is created through all physical objects that exist in the classroom, for example, the lightings, furniture, computers, boards, books amongst others. Contrastively, the human component is made up of all the members in the classroom, mostly teachers and students. It is worth noting, however, that the two do not exist completely separately, as there is, for example, human intervention in the physical environment (e.g. seating arrangements). Environment, broadly, involves the relationship between the interaction of teachers with students and among students. This consistency of interaction creates a unique atmosphere that is known as a learning environment (Malik and Rizvi, 2018). This element is also interpreted as the psycho-social environment within the classroom. What is evident, in this case, is that the learning environment is complex, involves physical and human components, and is not limited to the classroom context (see Section 2.5.2)

The term classroom learning environment is further clarified by educational theorists. Fraser, Adediwura and Tayo (2007) suggested that perceptions on learning environments can be divided into two perspectives, psychological and physiological. Apart from using 'perspective' as a means for elaboration, researchers also note that the learning environment could refer to the classroom climate (Walberg, 1974; Fraser, 1991) or '*structures, processes, ethos within classrooms which are integral elements affecting student's learning*' (Fraser, 1991, p.231).

The investigation of the learning environment is an essential area of research (Malik and Rizvi, 2018). Two major approaches are used for the investigation of the learning environment (Fraser, 2012). Fraser (2012) distinguishes the two approaches as 'objective' and subjective'. The objective approach is based on the observation of learning activities or classrooms by observers who employ systematic coding of classroom communication and events according to some category scheme. The subjective approach is based on students' perceptions about their own classrooms; in other words, based on the '*milieu inhabitants' apprehension of the environment*' (Fraser, 2012, p.162). This study considered the subjective approach to be better than the objective approach because it involves the students who are active members of the class rather than from so-called objective

observers. In the literature, several studies used questionnaires to collect quantitative data to assess the learning environment in classrooms (Malik and Rizvi, 2018). Though my study does not intend to collect quantitative data by asking the young participants to answer short questions, those items and categories in the inventories or questionnaires serve as references for me to frame the scope of my inquiry.

Scales were developed to investigate the learning environment. Beld and colleagues (2017) suggested that the dimensions evaluated in most research on classroom climate refer to three broad domains of classroom experiences (Beld et al., 2017):

(a) Interpersonal Relationships (involvement, affiliation, and support),

(b) Goal Orientation (task orientation and competition), and

(c) System Maintenance and Change (order and organisation, rule clarity, teacher control, and innovation).

However, for gifted education classes, only sparse research has been conducted on the issue of classroom climate, and most of the existing research does not relate to the early-year settings. Referring to a validated inventory, Special Education Classroom Climate Inventory (SECCI), some aspects that can facilitate gifted students' learning and talent development were found. In the SECCI, four areas are delineated and covered in the inquiry. These are:

(a) Teacher support,

(b) Student interaction,

(c) Student affiliation, and

(d) The structure of the classroom environment,

Apart from the classroom climate, a measure called the Classroom Cooperative Environment Measure (CCEM), can help educators to systematically assess how and what the elements in the classroom have contributed to the social environment within this context, and thus, have influenced their students' learning outcomes (Premo et al., 2017). Six subscales are included in the measure;

(a) The benefit of working with a classmate,

(b) Friendship,

(c) Reciprocity,

(d) Enforcement of cooperation,

(e) Value from classmate ideas,

(f) A desire to offer support to peers.

Informed by the above scales or measurement, my focus in understanding how the learning environment (classroom) has effects on gifted students is situated in the following areas:

Categories	**Sub-categories**
Structure of the classroom environment	order and organisation
	rule clarity
	teacher control
	innovation
Interpersonal Relationship	involvement
	affiliation
	support
	the benefit of working with a classmate
	friendship
	reciprocity
	enforcement of cooperation
	value from classmate ideas
	a desire to offer support to peers
Goal Orientation	task orientation
	competition
Teacher Support	responsive to the needs of students
	paying attention to students
	taking complaints seriously
	respect

	trust

TABLE 1 THE SCOPE OF LEARNING ENVIRONMENT

Using the above table, I structured my semi-structured interviews to focus on these different topics when discussing the relationship between the learning environment and the accommodation of learning needs with the sample of children (see Section 3.1: Research Questions). While I perceive similarities between the learning environment for gifted students and for non-gifted students, I hypothesise that gifted children will struggle with aspects of the scope, as previously identified earlier in the literature review (see Section 2.3.1)

2.5.2 Home

Gifted children do not live in a vortex, constrained by a single existence; thus, it is essential to consider their learning environments from a well-rounded and diverse perspective. Furthermore, as parents were interviewed for this study, they would be best able to comment on the home environment of the children. Many models of giftedness, such as Tannenbaum (1989), Gagné (2005) as well as Heller et al. (2005), emphasise that the environment, which includes the home environment particularly, plays a significant role in the fulfilment and success of children's gifts, and the talents of each gifted individual.

Cited in Jolly and Matthews (2012), seven themes regarding families and parents of gifted children emerged from Colangelo and Dettmann's review in 1983. Some of them aligned with the area of the research questions of this study:

(a) Parental values and attitude,

(b) Family problems with gifted children,

(c) Role of parents in identification, and

(d) Parental encouragement and enrichment activities.

Another review in the gifted literature by Keirouz (1990) suggests six variables to be used as the basis for future research. Among those six variables, two are the focus of this study. They are (a) Educational issues and (b) The development of the child.

More relevant to this study, Reichenberg and Landau (2009) build upon previous research as they refocus theories on development. The authors developed six areas that have an influence on gifted children's development in the early years. Three of them are examined in this study:

(a) Families' roles in providing enriched language and learning experiences,

(b) Parents' understanding and perceptions of giftedness and ability, and

(c) Their attitudes toward gifted programming, and views on non-traditional services.

Other more recent studies also highlight how the family environment contributes to the talent development of gifted children. Four major areas, which align with the scope of this study, have been commonly investigated. They are:

(a) Relationship and communication (Knafo and Plomin, 2006),

(b) Family lifestyle, values, goals (Reichenberg and Landau, 2009),

(c) Family structure, e.g. gender, number and birth order of children in the home (Steelman et al., 2002), and

(d) Socioeconomic status (Nisbett et al., 2012; Eccles and Roeser, 2012; McLoyd, 1998; Ramey and Ramey, 2012)

All of the above studies point out how these factors affect the talent development of gifted children. For example, the socioeconomic status of a child's family can be associated with academic achievement and with general intelligence assessment scores. This is in addition to the accumulation and distribution of resources for education, modelling of high expectations for achievement, and the education-related beliefs and values of parents (Reichenberg and Landau, 2009). It is also pointed out that the development of children is primarily affected by their family goals, values and lifestyle in spite of the child's genetic influence (Knafo and Plomin, 2006). It is suggested that children's intelligence development can be affected by family structure in relation to the amount of cognitive stimulation and the extent to which the emotional and intellectual needs of the child are being addressed (Steelman et al., 2002).

Landau and Weissler (1993) developed a questionnaire to characterise the way that the families are constructed for gifted children in terms of the parental environment. By assessing the families of gifted children and the families of children who perform within an

average range of ability, significant differences were found that suggested that increased opportunities enhanced attainment, no matter the status of giftedness. The variables in the questionnaire included:

(a) Socioeconomic status,

(b) Environmental stimuli,

(c) The atmosphere in the home,

(d) Parents' academic achievements,

(e) Diversity of parents' interests,

(f) Parents' personality traits (assertiveness, self-confidence, and liberalism),

(g) Cognitive interaction between parents and children,

(h) Affective interaction between parents and children, and

(i) Parents' attitudes toward their children's intelligence.

All of the above variables, items, or areas of investigation are helpful for this study because they offer a foundation from which the semi-structured interview questions could be constructed and they also provide an elaboration of Gagné's environmental factors. As the children in my study had been identified previously as 'gifted' by either a teacher or educational psychologist, there was some difficulty in differentiating between the outcomes from 'gifted' children and non-gifted children. While it was not the goal of this study necessarily to focus on this type of distinction, it is important to consider whether these children were able to be classified as gifted due to some of the variables of the environment defined by Landau and Wessler (1983) or whether these children would have been classified as gifted despite their environment. This research will explore the role of the learning environment for gifted children. Informed by the above literature, the importance of the family in providing a place to nurture gifted children so that they can achieve their potential seems clear. Indeed, the awareness of and response to a gifted child's talent, and the nurturing of the child's intellectual and emotional needs requires the contribution and dedication of the family.

2.6 Chapter Summary

Overall, definitions provided for giftedness range from demonstrating academic abilities, to possessing specific abilities such as artistic, sporting, or musical abilities (Lusk, 2018). There are those who would argue the problem exists because there is no universal definition as to how a gifted individual should be defined, which makes it challenging for policymakers to support certain areas of gifted education (Lusk, 2018). In addition, without a universal definition of what it means to be gifted, there are existing difficulties concerning the identification process from nation to nation or even in city contexts. This project, however, has used the definition of giftedness provided by the Hong Kong Education Bureau and supported by the models of giftedness (see Section 2.2.4). In the study referred to by Carman (2013), while the literature review identified several gaps, one was the challenge of how to identify gifted students. If researchers experience challenges in clarifying what comprises a gifted student and the identification of these students, educators of gifted students may experience increasing challenges to understand just how to provide appropriate support and learning environments for them.

Despite the constant modification of definitions, researchers generally agree that the value of the learning environment is essential for the talent development of the gifted student. However, gifted students' needs cannot always be met — it is a variety of variables from which this inability exists (Joel, 2019). Due to the fact that there is a general lack of knowledge associated with parents, teachers, and various stakeholders, the setting and the atmosphere of the learning environment are not adequately addressed and, thus, best accommodations for gifted students are not fully addressed. As a result, the lack of ability to properly address the needs of gifted students becomes the cause of disinterest, which often results in lower than expected achievement for this demographic (Repinc and Juznic, 2013).

Due to the above reasons, disconnection can be seen between adequate nurturing for gifted students and studies that support the inclusion of more rigour in gifted education and demands in parents and teachers training to meet the gifted students' needs. Researchers must continue to conduct additional research in the average classroom setting because an effort should be made to create programs that help gifted students to thrive in a different classroom. Studying gifted children and how to best address their needs is helpful for supporting the existing body of literature and making a contribution to knowledge.

3. Methodology

3.1 Overview

The methodology of any research project is crucial because it demonstrates how the researcher is able to justify the research process, how the research questions of the study are articulated, and how the research has been designed to be purposeful (Cohen, Manion and Morrison, 2018). Critical thinking is important for maintaining openness and ensuring that the research is significant in its aims since "*without such methodological frankness, we run the risk of reporting knowledge that ain't so*" (Miles and Huberman, 1994 p. 294).

During the research process and particularly during the methodological design, the following thoughts, as documented by Cohen, Manion, and Morrison (2018) were examined, to justify the choices made:

(1) What specific questions are being asked, and how were they created?

(2) How are the questions and method design linked?

(3) To what extent do the methods fit the purpose?

(4) To what extent does the analytical approach fit the required analysis?

(5) Are ethical considerations being addressed?

(6) Are the views of children as participants being fully considered?

(7) What are the implications for future practice?

The primary purpose of this study is to inform practice in a relevant area which has the opportunity to make a real difference. Hong Kong is in a period of transition, where it has opportunities to shift away from a typically British model of education to one that focuses on best practices in the Hong Kong context. Children are able to explicitly articulate what their needs are, and at this time of transition, it is worth listening to what they have to say in order to inform future policy. In this way, there is an implicit focus on transformative practices into the broader policy context. This links back to Clough and Nutbrown's (2007) 'Four P's' associated with social research, which include:

(1) Persuasive, persuading others of its importance;

(2) Purposive, achieving a result;

(3) Positional, showing a particular point of view; and

(4) Political, leading to change either personally or in the wider social sphere.

This research intends to achieve Clough and Nutbrown's (2007) 'Four P's' in the following ways:

(1) being persuasive by highlighting the views of gifted children and their parents and then comparing them with the existing literature in order to contribute to the wider academic field of knowledge and to suggest changes to social policy in Hong Kong;

(2) being purposive, as this research aims to document children's voices in the field of giftedness;

(3) being positional by expressing the view that gifted children's perceptions of the learning environment should be valued as these may affect their development; and

(4) being political, as this research aims to change current policy after providing a nuanced understanding of children's conceptualisations of giftedness and how they construct this concept.

The previous chapter concluded by emphasising the imperative for research on gifted students. In keeping with this, this research collected data on how the learning environment affects the construction of giftedness in young children. As this study aims to understand how giftedness is constructed, six children (three boys and three girls) between the ages of five and seven years old were invited to participate in this research project. The children, all from Hong Kong, were classified as gifted by past teachers or educational psychologists; their parents (five sets of parents) also agreed to participate in semi-structured interviews (see Section 3.4.4). The purposes of this study are:

(1) To explore the effects of the home and school learning environments on gifted children in Hong Kong and

(2) To critically examine how the variables above influence children to construct their concept of giftedness.

Following a review of the literature review, the following research questions were delineated, to contribute to knowledge in this area and address current gaps:

RQ1. How do young gifted students construct the concept of giftedness and explain the relationship between their learning environment and the accommodation of their learning needs?

RQ2. To what extent, if any, do young gifted students, or their parents, view their learning environment as contributing to the development of their giftedness?

RQ3. What do gifted students and their parents, view as the best possible methods for positive learning development?

These questions demanded a methodology that would allow me to explore children's views of a complex concept. It was important that I develop research instruments that enabled me to examine not only children's opinions about what giftedness actually is but to also understand the factors that influence how these constructions are developed (see Research Design, section 3.4). Thus, a case study approach was adopted for this project.

This chapter focuses on my positionality, ontological assumptions and epistemological considerations when selecting qualitative methods in order to investigate the perspectives of young children with giftedness. This chapter also provides the details of the data collection and the analysis process of my research. It seeks to provide a descriptive account of how I used a case study approach using the semi-structured interview to obtain perspectives accompanied by child-friendly strategies, such as drawing. With the discussion of research considerations and ethical considerations, support is provided to justify why I chose particular methods and strategies for analysis. This chapter also contained an

explanation of thematic analysis as my decision for the data analysis approach in order to identify emerging themes from the data.

3.2 Research Philosophy

It is necessary to have a framework that guides this research project, determining what elements will be measured and the types of relationships that exist. One common strategy of explaining the many different layers in the development of a research project is the 'research onion' illustrated by Saunders et al. (2007). The research onion comprises five stages, research philosophy, research approaches, research strategies, time horizons and data collection methods (Saunders et al., 2007). In the broadest understanding of research theory is the research philosophy; my research is positioned both by my own background and unintended bias, but also in relation to ontological positionality and a general alignment with an epistemological approach (see Section 3.2.1). I address this research from an interpretive approach, and a position of social constructivism, which assumes that reality is socially constructed and that value is to be had from shared meanings among individuals.

3.2.1 Positionality

Parker (2005) suggests that what researchers often understand as their 'objective' stance can be 'suffused' with their own fantasies and interests (p.4). I was aware that my positionality in this research was affected by the various experiences and identities I had. First, I was a school social worker who worked in primary schools to support children with special educational needs, including giftedness. Second, the previous research for my master's degree explored children with special educational needs in low-income families (e.g. Montgomery, 2013; 2015). Third, as management staff working in a non-government organisation monitoring the quality of educational services in Hong Kong and Macau, I have a passion for speaking up for children who cannot enjoy their learning. This feeling may divert me to a presumption that the existing education system does not have enough support for the gifted students.

My position and experiences contribute to the interpretivist research philosophy (see, for example, O'Donoghue, 2006), as not only do I have these experiences, but the participants in this research do as well. The difference, however, is that because this

research employs qualitative methods (see Section 3.4.1), the way that I present the data may be affected by my previous experiences, thus creating bias. While it is acknowledged that bias exists within all research, there is a need to be upfront with how bias plays a role in this study (see Section 3.9: Limitations). Furthermore, my significant background experience and my current doctoral work may indicate to parents that I am in a position of power; as a result, building rapport to narrow the hierarchy is imperative and can be achieved through communication and the semi-structured interview design.

3.2.2 Ontological Positionality and the connection to an Epistemological approach

Before embarking on the design of this study, it is essential to clarify the ontological, and in turn, the epistemological perspective that is being taken.

Ontology, as the study of being, can be defined as the nature of existence and what reality is created from (Gray, 2013). Grix (2002) also defined ontology as the researcher's perspective on the nature of social reality and knowledge. While there are multiple ways that reality and knowledge can be understood (e.g. positivism), this research project focuses on a socially constructed view of reality. Those who embrace constructivism believe that social phenomena are dependent on, and emerge from, human interactions and that they are continually changing (Priya, 2016), which aligns with this project and its constructivist social view of the world. Social constructivism is a strategy for interpreting the world in a way that is a radical and critical alternative to traditional psychology and social psychology (Burr, 2006). It obtains its influence from a variety of areas including education, sociology, linguistics and philosophy, which suggests that it is applicable across disciplines (Burr, 2006).

There are some fundamental assumptions underlying social constructivism. First, it applies a critical stance when focused on assumed knowledge, based on a person's objective, unbiased observation. Apart from that, it takes into consideration the specificity of culture and of history, and more specifically, the social constructions of childhood, assuming that all strategies for understanding can be relative to culture and/or history (Bruner and Haste, 2010; Priya, 2016). It also suggests that knowledge can be sustained through social processes, therefore when asking 'Where does knowledge come from?' the response is that people are able to construct it among themselves (Priya, 2016).

Furthermore, constructivism contends that what is often assumed to be truth may be thought of as currently understood ways of worldly comprehension (Priya, 2016; Raskin, 2002). Knowledge may not be the result of objective observation of the world, but might instead consider the social processes and interactions that people are continually engaging in. Additionally, there is an assumption that social action and knowledge can be combined in a way that each social construction is able to provide a different kind of action. Constructions and descriptions of the world, as a result, sustain certain patterns of social action while negating others; this directly links them up with power relations (Burr, 2003).

Ontological positions, in turn, influence the epistemological perspective that assists a researcher in gaining additional knowledge of the social phenomena that is being considered. Epistemology, as the study of knowledge, is concerned with how we understand things, which includes the nature of knowledge, and what we can understand to be appropriate knowledge (Moser, 2002). In the pursuit of knowledge, there are different perspectives. There are two perspectives a researcher could take: positivism and interpretivism. For the researchers who support positivism, they generally assume that there are prior truths existing in this social world. These scholars accept that knowledge is increased through deductive reasoning or intuition, and as a result, the aim of social research is to test the hypotheses they generate by obtaining objectively measurable data. Brynman (2016) suggests that researchers taking this position often employ a quantitative approach in their studies. Contrastively, researchers whom a value-free reality in the social world adopt an interpretive perspective. These scholars believe that the world can only be experienced through personal perceptions. As a result, the researcher is connected with the social situation that he/she is studying and is not interpreting the social world from an external perspective (Walliman 2006). The researchers who support the interpretivism support the notion that the purpose of social research is to reveal how various people interpret the social world. As a result, a qualitative approach is the most common one for researchers adopting this stance (Mertens, 2015).

It is vital that all components of the research approach logically align (Grix, 2002). Therefore, when considering the epistemological perspective and ontological position, the theoretical frameworks of giftedness that emerged from the literature review and research

questions have to be returned to and have become the foundation under which the data have been analysed. In regard to the nature of knowledge relating to giftedness, it seems that there may be some fundamental components about the interpretation of talents, gifts or intelligence that must be considered in the construction of methods (see Chapter 2). All of the models or theories of giftedness were constructed by researchers who defined or measured intelligence or abilities without discussing the results with the participants. For this reason, the ontological position of this research leans towards constructivism. Lock and Strong (2012) indicate that the approach of social constructivism assumes that as 'social beings, researchers complete a unique process of constructing inherent immersion with other people in a shared experiential world' (p.5). This way of thinking best supports my choice of project, as I was focused on obtaining a better understanding of the concept of giftedness among young children.

3.3 Participants and Sampling

The study involved six child participants between the ages of five and seven and their parents. All of the children were either studying in local kindergartens or primary schools. As the aim of this study was to explore the effect of the learning environment on gifted students, it was my intention to involve students who are in different academic stages. One boy and one girl were in kindergarten (K3 students), one boy and one girl were in primary one (P1), and one boy and one girl were in primary two (P2). The reasoning to involve K3, P1, and P2 students were that this study focused on the experience of young children who were identified as gifted. Interviews were held in a private tutorial centre that catered to children between the ages of four to twelve years old. It is also the centre that the participants attended for support programmes for gifted children weekly, making it a familiar place for the children.

The participants in this study were identified using purposive sampling which is a sampling strategy that relies on the judgement of the researcher's deliberated choice when it comes to selecting the participants that are to be studied (Sharma, 2017). This sampling technique is also widely used "*in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources*" (Palinkas et al., 2013, p.534). The choices are made upon the qualities the participants possess. The methods of

purposive sampling include typical case sampling, critical case sampling, expert sampling, maximum variation sampling, homogeneous sampling, extreme case sampling, and total population sampling (Etikan, 2016). This study employed typical case sampling, attempting to elicit responses from students who were classified as gifted. One of the significant disadvantages of adopting purposive sampling is the "judgemental subjective component" of the researcher on the selection of participants (Sharma 2017), it is critical that the participants are determined based on clear criteria with the theoretical framework, which in this case included classification that they were gifted, were willing to participate, and met the appropriate age criteria.

In this study, the selection of participants was purposive, which indicates the participants share similar characteristics and life experience (Bryman, 2016). With the consideration of the purpose of this study, which was to explore how the concept of giftedness is constructed, children needed to have experience of being outstanding or appreciated in some areas in order to understand how concepts of giftedness influenced these children's perceptions of themselves as learners. Furthermore, the participants represented different stages of learning (i.e. primary school and kindergarten). The choice of setting was mainly determined by the level of accessibility to the participants and the availability at the given time. It is important to note that there is a lack of testing for participants in relation to giftedness in Hong Kong, and these children had been identified by a past teacher and sent for evaluation with an educational psychologist, or a parent had taken their child to a private assessment centre. Thus, the onus is on the parents and teachers of these children to identify giftedness in certain areas, though testing is available in primary schools.

The centre used in this study was familiar to both the children and the researcher. I had previously worked at this centre and had a good relationship with the staff. Additionally, when time permitted, I volunteered time at the centre, working with children who were classified as gifted; as a result, the children who participated in this study had seen me in the centre, even if they had not worked with me specifically. A pilot study was conducted with two children at this centre prior to the main study; changes were made to the main study, including the inclusion of parental interviews, as a result. This information

and the participants of the pilot study are documented in Section 3.7. It had not been my original intention to solicit responses/participants solely from this centre, as I had intended to obtain participants from the local area, in order to obtain a higher level of diversity, which I thought might add value to the study (Reybold, Lammert and Stribling, 2013). Recruitment for participants was sent out before the pilot study (see Section 3.7: Pilot Study).

No response was received several months despite ongoing efforts made to obtain participants. Posters on requests for research participants were put up on local notice boards, and hundreds of flyers were given out at various churches and private tutorial centres in the region. Despite this, these tactics were not valid because there were no responses to the requests (Saunders et al., 2007). Taking a different approach, I called a friend who is an owner of the tutorial centre I was familiar with and requested her help. The centre is privately owned but closely connected to local public schools to provide enrichment programmes for gifted children who are referred from their schools. The centre's owner then sent out some requests to those who match the requirements of this research. As I was looking for six participants, the owner of the centre knew my research criteria and sent out targeted requests to parents that she thought would participate and had children of the correct age. When parents agreed to participate, as long as the children fell within the age range and were classified as gifted, they were accepted into this study. Therefore, no students were turned away or dismissed, as all fit the criteria and agreed to participate.

As I was aiming to gain understanding rather than seek generalisation, the sample of this study was expected to reflect the gender, ages and schooling experience. Although the plan was not necessary to have an equal number of boys and girls, the study resulted in a balance of 3 boys and 3 girls. The age group of the children ranged from 5 to 7 years. The types of giftedness demonstrated by the children included those who were verbally gifted, performance gifted and had a high IQ (scoring 130 or above) (see Section 2.8.1 for an overview of participants in this study).

The purpose of this study was to explore the effects of the home and school learning environments on gifted children in Hong Kong and how those effects constructed giftedness; one of the significant criteria of the recruitment of the children participants was that the children needed to be formally identified as gifted in Hong Kong. The assessment could either be done in their primary schools by the in-school educational psychologists, or other clinical psychologists in some private assessment centres. The children's assessment results that were provided by the parents clearly indicated that the child was gifted through the following criteria: verbal (verbal ability relates to reading, vocabulary, and explanation in an assessment, children's quotient ranged from 85-164, which was above the standard range), performance (non-verbal ability relates to ability in a performance area such as art or music; children's quotient ranged from 105-157, which was above the standard range) or full-scale IQ (score ranged from 121 to 180).

3.4 Research Design

This section explains the data collection methods used; the epistemological and ontological foundations of this project, combined with its qualitative and constructive nature, have had an impact on the choices made in undertaking this project. This study also seeks reliability and generalisation through triangulation and ensures that the data collection methods chosen to assist the researcher to eventually present the interpreted data, as told by a small number of participants in a case study design (Cohen et al. 2007).

3.4.1 Qualitative methods

The research questions were aimed at understanding how gifted children and their parents, in Hong Kong, perceive the concept of being gifted and how the concept is constructed. It also considers learning environments, attempting to determine the most conducive settings to implement steps to address learning needs. Using an interpretive, qualitative approach seemed to be appropriate in terms of answering the research questions and allowing comparison against theoretical frameworks, whereas adopting a more positivist experimental approach seemed less appropriate. Reality needed to be constructed by the children and their parents and then interpreted by the researcher.

3.4.2 Case Study

This research utilised a case study design. Hartley (2004) suggests that a case study is not a method but a research strategy instead. It can be linked back to the Research Onion design that was created by Saunders et al. (2007). Case study research typically includes investigating one or a few social situations through the use of a variety of data sources (Easton, 2010). A case study is able to provide a framework that allows the research to "retain the holistic and meaningful characteristics of real-life events" (Yin, 2009, p.4). This strategy is deemed to be appropriate when:

- Answering "why" or "how" questions
- The '*focus is on a contemporary phenomenon within a real-life context*' (Yin, 2009, p13).

A case study approach is applicable in this context as this research is intended to '*focus on a contemporary phenomenon within a real-life context*' and asking "how" questions on this phenomenon (Yin, 2014). According to Yin (2014), there are four reasons that justify case study research that include: explanation, description, evaluation and exploration. These elements lack mutual exclusivity and may overlap (Yin, 2012). This study seeks to explore and describe the construction of the concept of giftedness among children, and therefore this is a study that can be characterised as exploratory and description (Yin, 2014).

This study is classified as a case study. Creswell (2013) explained a case study to be research that explores real-life bounded systems through extensive data collection and one that may involve multiple sources of information (p.97). Despite this definition, it is challenging to describe what a case study is, though a case study is an excellent method to better explore a setting in order to understand it (Gustafsson, 2017). In the design of a case study, depending on the issue of the question, either multiple case-design or a single-case can be adopted (Zainal, 2007). As a result, this study employs a multiple case study framework, with each case including one child (who was interviewed and produced a drawing) and his/her parents (who were interviewed) (see Section 3.4.4: Semi-Structured Interviews). There were six children participants; therefore, six cases under examination. A qualitative case study is a flexible method that is commonly used in educational research

(Yin, 2012). The reason that a multiple case study design was chosen is that it allows the researcher to study the similarities and differences between the cases, thus allowing the researcher to make more significant contributions to the literature (Baxter and Jack, 2008).

3.4.3 A Child-Centred Participatory approach

A child-centred and participatory approach is also one of the methodological repertoires in this research. As explained previously, this piece of research sought to explore the concept of giftedness from the perspectives of the children themselves (see Chapter 1). As a researcher and educational practitioner, 'the voice of the child' is particularly crucial to me, as children are at the receiving end of most of the aspects of education (Nutbrown and Hannon, 2003). Other than collecting data about the children's perception through an adult researcher's eyes, the children's views were also hoped to be obtained by directly involving them in the research, and through the involvement of their parents in the interview process (see Section 3.4.4: Semi-Structured Interviews).

Examining children's experiences and their viewpoints about issues that are concerning to them have gained considerable interest over the last twenty years (Nutbrown and Hannon, 2003; O'Kane, 2008; Levy, 2008;). Other entities have been significant in giving children their own universal rights, rather than considering then as undeveloped adults, for example, The UN Convention on the Rights of the Child (UNICEF, 1989). The consistent modification of what is understood to be the views of children and childhood has impacted the ways that professionals, work with children because children become active participants instead of passive bystanders (Corsaro, 2011; Billington, 2006). Under the above assumption, this project expands on participatory research methods applied by researchers who have focused on the perceptions of children on issues that directly concern them.

Current literature on 'researching with children' was reviewed once the decision was made to address the perceptions of giftedness as understood by children, that directed to suggestions that there were multiple feasible methods of working with young children by implementing research methods that helped to encourage them to participate as well as being age-appropriate (Christensen and James, 2008; Levy, 2008; Dockett et al., 2009). The activities that are implemented to generate data from children are best if similar to those

that the children are most familiar within their school or in their home. It is also suggested that the children have some familiarity with those undertaking the study, and the research is conducted at a place that children feel comfortable (Khimji and Maunder, 2012).

It is important that children are able to participate in the decision-making process, not only from an individual perspective but from a broader social perspective; Article 12 of the UN Convention on the Rights of the Child (1989) provides clarity on these rights. O'Kane (2008) indicates that by using participatory techniques, there are opportunities for children to actually be heard, especially when researchers create spaces that are meaningful, thus adding value to the research project.

> "*Participatory techniques provide one framework which is responsive, with open-ended research goals and methods which allow children to set their own agenda. Furthermore, these methods can be adapted to suit work across wide age-range of children and young people and can be used in a wide range of settings*" (O'Kane, 2008; p. 151).

Focusing on the mentioned considerations, I chose to conduct an individual semi-structured interview with six children who were invited to participate in the study via their parents. These semi-structured interviews consisted of a set of open-ended questions and drawing activities that led the data collection process (see Section 3.4.4: Semi-Structured Interviews). Each interview offered the flexibility to allow the children to explain and elaborate on the details that they felt were particularly important or to add other information not necessarily outlined in the main questions. In the interview, it is important for the researcher to maintain an open mind as a way to allow young children to share their viewpoints about their own gifts and talents. Moreover, due to the leaflet, the children were familiar with the research and were willing to participate in the discussion (see Section 3.8.1: Overview of Participants). These semi-structured interviews provided the opportunity to openly discuss their dislikes and likes, their experiences, thoughts, and reflections on their concept of giftedness and also to have their views taken seriously. A copy of the semi-structured interview questions can be found in Appendix D)

In providing a meaningful context, a researcher must consider the ethical requirements and limitations that are involved in the process of engaging children in the research process. This includes the extent of the engagement as well as the amount of time that children are asked to participate. Ethical considerations and tensions were also expanded upon as part of this research process, which is documented in Section 3.6.

In terms of working with young children, it is important to consider how research methods that include a vulnerable population best address the needs of that population. In this case, the research firstly indicates that using children as participants repositions their voices to be central in the research process, which is a valuable position and not one that should be taken lightly (Barker and Weller, 2003). It is further suggested that research methods must align with what children feel most comfortable with and that this generally means questionnaires or more traditional methods might be intimidating, inappropriate, or boring (Smith and Barker, 1999). As a result, new methodologies have been developed, such as drawing or stories that encourage participation and are synonymous with the ability level of the children (Christensen and James, 2017). In other cases, pairing interviews with other methods (i.e. drawing) can create a fun and safe space, build rapport and trust, and promote inclusion and understanding (Sapkota and Sharma, 1996). Thus while working with young children means that more care needs to be taken to ensure the children remain free from harm, interviews and drawings seem a logical methodology to pursue.

3.4.4. Semi-Structured Interviews

Semi-structured interviews were used to collect data from the children and their parents. Interviews can be adopted when researchers need to collect 'in-depth' data (Mukherjin and Penny, 2018). This study adopts a semi-structured interview because it offered the most flexibility when working with the children, as it was possible that the children would highlight topics that could not be anticipated by the researcher. The interview questions required the flexibility to probe for details in relation to a particular response (Mukherjin and Penny, 2018). At the same time, semi-structured interviews allowed the researcher to ask similar questions of all the participants, so some degree of standardisation was achieved. Semi-structured interview questions were piloted with the children during the pilot study (see Section 3.7). When questions were designed, the

Munich Dynamic Ability Achievement Model (MDAAM) was consulted. Specifically, competencies, perceptions, and abilities were considered in the question design in order to obtain results that could most fully address the research questions. In addition to this model, the social, emotional, academic and intellectual needs documented in the research were considered (see Section 2.4). Finally, environmental needs such as the classroom, teacher support and relationships were addressed.

Child	**Drawing**	**Number of interviews / Interview Length**	**Parents**	**Number of interviews / Interview Length**
Jordan	Yes	3 sessions / 30-45 minutes	MJE/FJE	2 sessions / 45-60 minutes
Eunice	Yes	3 sessions / 30-45 minutes		
Charlotte	Yes	3 sessions / 30-45 minutes	MC/FC	2 sessions / 45-60 minutes
Ioana	Yes	3 sessions / 30-45 minutes	MI/FI	2 sessions / 45-60 minutes
Noah	Yes	3 sessions / 30-45 minutes	MN/FN	2 sessions / 45-60 minutes
Liam	Yes	3 sessions / 30-45 minutes	ML/FL	2 sessions / 45-60 minutes

Table 2 Data Collection and Interview Timings

3.4.5 Use of Drawing

Drawing is one of the widely used techniques in studies that involve young children. Drawing is used in collecting data from children because "it gives children time to think about what they wish to portray. The image can also be changed or added to" (Punch, 2002b, p.331). During the time of drawing, children can express their views and interpretation of the things happening around them in their own presentation freely (Sapkota and Sharma, 1996, cited in Thomas and O'Kane, 2000). Additionally, Young and Barrett (2001) conclude,

> "*When asked about what they had drawn, the majority talked freely increasing the quality of the information gathered…resulting in a much richer data set that could have been obtained from pictures or discussion alone*" (p. 145).

In my study, children were encouraged to draw during the semi-structured interviews. They were provided with blank paper and crayons. The children were asked to draw a picture of themselves with their classmates in their classroom or what they thought

they were gifted at. Some questions were asked to clarify the children's ideas, and some questions were asked to seek for more perspective from the children. The drawings were interpreted by the children, so they were not interpreted by the researcher. These drawings acted as an aid to get the children comfortable with talking. They were used to support what the children said in the interviews.

The value of the drawing also serves as a multimodal method for stimulating conversation between children and adults. By using children's drawing in the interview, children can translate their thoughts from invisible to visible (Bland, 2015). Drawing was used, in this study, as a tool of communication to facilitate conversations between the researcher and children. For instance, when Charlotte drew a picture full of hearts (see Appendix F), a conversation of the meaning of those hearts was then generated. Charlotte could therefore process and elaborate her ideas about what she thought she is good at. Children's drawings are "a rich source of qualitative data (Walker, 2008, p.10), it also help the researcher to increase the opportunity for young children to extend and contribute their voices and participation in education and educational research (Carrington, Allen and Osmolowski, 2007; Bland, 2015).

3.5 Research Considerations

3.5.1 The need for Reflexivity

The need for reflexivity is particularly essential in qualitative research (Mukherjin and Penny, 2018). Social science researchers must be fluid in the research setting instead of a fixed self (Mukherjin and Penny, 2018) (i.e. they must be adaptable). Under this notion, "reflexive researchers are self-aware of their biases, assumptions and interpretations of the research issues" (Guy, 2018, p. 205). It is essential to adopt reflexivity in this study. My bias in this research is documented in the "Limitations" section (see Section 3.9), and I acknowledge that in the semi-structured interviews, questions were designed to be adaptable and I worked to be reflexive in my actions.

3.5.2 Generalisability and Validity

The concept of generalisability is the "extent to which findings from your research are true or relevant beyond your sample size and to different contexts" (Guy, 2018, p.xviii). I

purposively choose the appropriate methods to capture the children's views in order to answer the research questions. One of the reasons I chose to adopt a qualitative approach is my interest in the complexity and diversity of human interaction. I believe that the concept of giftedness among children complexly interacts with the context. My epistemological stance in adopting qualitative data from a small sample of young gifted children meant that the results would not be generalisable to other young children. Despite this, it was not a priority for my research findings to be generalisable. I wanted to investigate the different accounts of the children involved in my study by gathering rich, qualitative data that could help to inform the education practice in Hong Kong. Therefore, in considering the validity of this study, I needed to represent the participants' ideas accurately. At the same time, I need to check the authenticity of the data by triangulating their responses by other people to see whether their responses are consistent (Guy, 2018).

Completing this research would allow for the personal professional development of my practice as a researcher and would have implications to affect policy at the centre where the research was conducted. There are also implications for future research, as this case study could be expanded to a wider context to further influence policy across Hong Kong. In order for this to occur, the findings of this research must be appropriately presented with suggestions for further research in the completed project.

3.6 Ethical Considerations

3.6.1 Informed Consent

Participants' consent should be informed before the research is carried out (Guy, 2018). It is not only a part of building trust between the participants and the researcher but also a procedure to facilitate the participants' understanding of the research. Participants also have the right to understand the complete research process. Guy (2018) suggests that children are "*deemed too young to provide informed consent*" from a legal perspective (p. 62); therefore, this research required parental consent. However, it was still necessary to obtain consent from the children, as it was important that they were informed and able to make a decision as to whether to participate or not. In this case, David, Edwards and Alldred (2001) point to this being educational consent, in that the children need to be told what

they are participating in. While the children may not have been legally able to provide consent, it was ethically necessary that they understand the basics of this research project and provided consent (Powell and Smith, 2009).

In this study, I provided the child participants and their parents with an information letter and a consent form (Appendix A) where more extensive procedures and details were addressed, as this is generally seen to be standard practice in qualitative research (Bryman, 2016). This was done first by e-mail and then through a phone meeting with parents. For the children participants, I made a child-friendly leaflet explaining my project so that the parents could explain it to their children because I was concerned that the children would not be able to read the information letter (Appendix B). When preparing the child-friendly leaflet, I attempted to provide the children with an opportunity to grasp what the project was about and make a choice whether or not to participate in the research. In the information letter and leaflet, the information included was:

- The research backgrounds
- The research purposes
- What their role is in this study
- What the consequences of participating in the study are
- What will I do with the collected data?
- How confidentiality will be maintained
- The choice that they have to participate or not to participate
- The right of withdrawal from the project at any time?

I met with the six children individually in their tutorial centre prior to the study to explain my project using a leaflet. I also wanted to gain informed consent from the children and ensure they wanted to take part in my study. I also gained parental consent before meeting the children (Powell and Smith, 2009). Both information sheets and leaflet were read out by me to participants before they decided to take part in the study. For children participants, time was given to discuss anything that they may have concerns; they showed their concerns by asking questions, such as ‘why are you still studying?’, ‘is your teacher a kind teacher?’, etc.

Apart from participation, consent was also sought from children to present their drawings in my study. Not all the drawings were documented in this study as not all of the children felt comfortable to have their drawings to be shown in my study. Therefore, not showing some of the children's drawings is an ethical decision I made in response to the children's decisions.

3.6.2 Right to Withdraw from Participation

For the adult participants, I was explicit on the rights of participants, including their right to opt-out, the data collection procedures, and how the data would be handled. I included this information into my script that I used at the beginning of the interviews. This was also made clear to the children but using the leaflet instead of a direct conversation. All of the adult participants were clear about their rights in the study and were invited to sign a consent form to show that they and their children were fully informed. However, Mukherjin and Penny (2018) suggest that children demonstrate their intention of withdrawal in their ways, such as failing to engage with the researcher, turning away, sounding distressed, remaining abnormally quiet, and crying, failing to participate or complete any materials requested as part of the project. In order to ensure children's right to withdrawal from participation, I had an individual interview session with their parents to discuss the usual practice of children when they are under similar circumstances. Ongoing negotiating consent also happened on a moment-by-moment basis; for example, I continually asked the children if they wanted to answer the question I was asking to check their level of engagement.

3.6.3 Anonymity, Confidentiality, and Data Protection

In this research, interviews were audio-recorded, and so a certain level of care when handling the data was required. Before beginning the research, I obtained permission from the parents for the audio recording. I explicitly informed the parents that pseudonyms were going to be used instead of each child's given name. It should be noted that the pseudonyms chosen for these participants are 'Western' in nature (i.e. more typically associated with the North American or British context. The children in each of these situations either had a Western sounding name as a first name or had been given an 'English' name that they used. While this may seem culturally confusing, it is generally a

common practice in Hong Kong; thus, the 'Western' type names were also applied in the pseudonyms. Additionally, in order for further analysis to occur, it was necessary that I collect some demographic information from the participants that were related to their learning experiences and the journey of the identification of giftedness. However, as child protection issues may make it necessary for disclosure in some situations, it was crucial that the children participants understood there was a limit to the anonymity and confidentiality that can be given. It was also important that the understanding was sought before children and other research participants gave their informed consent and actually participated in the research (Guy, 2018).

Regarding data protection, when I sent all of the details (i.e. information letters and consent forms) to the parents of participating children via e-mail, I consistently used my University e-mail address to ensure a level of security. After obtaining informed consent, the signed documents were securely stored. All the electronic documents were stored in a password locked online drive, and paper documents were stored in locked storage in my workroom at my home where only I would have access to the data.

3.6.4 Protecting Children from Harm

The participation of children in research can be viewed as, what Allen (2005) suggests, constituting a 'risky' activity. These risks differ from those in biomedical research, but they are increasingly social rather than physical' (Allen, 2005, p. 20). This means that though the child is not likely to come to physical harm, it is essential to consider the emotional and social harm the research might cause upon any participant, regardless of age.

First, the topics may be of little interest to the children and may have little meaning for the children. I needed to design research methods that were meaningful to the children (Mukherjin and Penny, 2018). Also, in the interview sessions, the questions needed to be carefully thought through to ensure all the children were able to understand what was being asked of them (Mukherjin and Penny, 2018).

Second, there may be a power imbalance between adult researcher and children participants (see Section 3.9). Therefore, in this study, I was aware that it was my responsibility to consider how the children participants might feel when they were invited

to participate in the interview. I also established rapport with the children and made them feel as comfortable as possible. Hatch (1995) suggests that children are more likely to be comfortable in a familiar setting. My study was therefore designed to be carried out in a quiet room within the centre that participants were already familiar with and used for weekend lessons. This ensured that there was minimal disruption to the participants' typical and predictable weekend routine. Children were generally excited to participate in this research and felt like they had an important job; this was largely attributed to parental participation, as the parents involved in this study were surprisingly enthusiastic, despite having difficulty recruiting participants in the first place. Therefore, children felt included and confident as a result of participation.

In addition to the above, while the focus of this thesis was on discussing the ethical issues in detail, formal procedures were also observed, and ethics approval was granted prior to the commencement of the research. An ethics approval form was generated, submitted for review, and accepted. The approval letter can be found in Appendix C).

3.7 Pilot Study

In order to check the appropriateness of the data collection procedures and the design of the data collection tools, a pilot study was conducted in September 2018, about a year before the main study. Specifically, in this pilot study, my focus was to examine whether the interview questions and drawings could be applicable tools used to gain insights into children's perceptions of the issues related to giftedness and their learning. Since this project was designed to investigate the perspectives of children through an interpretation of their words and drawings, it was important to consider the possibility that difficult situations could occur, such as the participants not wanting to talk (which could have been classified as a withdrawal of consent), or repeatedly saying: "I don't know". Thus, it was important for me to practise my skills as a researcher in building rapport and inviting children to be active participants in the research without undue stress or concern. Maintaining a reasonable time frame for interviews was also considered. It was difficult, but important, to find a balance between waiting for the children to respond and taking too

long in the interview. Pilot studies are deemed to be a valuable part of the research process (Creswell, 2013). This is because they allow for methods to be assessed and the researcher to obtain practice with the question types (Crewell, 2013). According to Bryman (2016), piloting interview schedules also allows for the confirmation that the questions designed to address the research questions and are clearly understandable by the participants, thus adding a level of rigour to the study.

3.7.1 Participants and Setting

Two children (one 6-year-old boy named Ben and one 6-year-old girl named Teresa) participated in the pilot study that took place in their tutorial centre. Both of them were identified as gifted when they were four years old, and both of them know that they are gifted. Nevertheless, I still needed to explore how they perceived the concept of giftedness, as that was the primary concern of this study.

I obtained informed consent before conducting the pilot study. Information letters, consent forms, child-friendly leaflets were provided to the children and their parents to inform the participants regarding the details of the study. When informed consent was gained, an informal visit to the participants' tutorial centre was made. I was intended to visit the children participants to build rapport through informal play, as I had never worked with either of these children before. During the visit, I explained the schedule with the child participants and their parents. I advised the children that they were invited to present their views by drawing and telling stories. The pilot study was organised over three sessions in three weekends using the following procedures.

3.7.2 Procedures

The pilot study was divided into three sessions in order to engage the participants and check the appropriateness of the research methods. Questions were asked that related to the Munich Dynamic Ability Achievement Model (MDAAM), specifically in relation to the building of domain-related general competencies, learning environment, and chid social, emotional, academic and intellectual needs, as per the research model. The arrangements were as follows (see Table 3):

Activities	What I did and what I asked
Session 1: Warm-up questions Open-ended questions	I asked the child to draw a picture of their classroom and friends using crayons: What do you like to do at home? What do you find easy to do at home? What do you find hard to do at home? What do you like to do at school? What do you find easy to do at school? What do you find hard to do at school? We then concluded the session by reading a storybook (to build rapport) that they chose, and I told them what would happen in the next session.
Session 2: Drawing	I prepared a big piece of paper. The children were invited to draw what he/she thinks he/she is gifted at. Before they drew, I asked them some question to check their understanding of giftedness. Children would then be invited to draw what characteristics he/she has to be gifted.
Session 3: Drawing	The children were invited to draw something about their learning at schools or at home or anywhere that they could think of. During their drawing, I asked some questions such as: What do you enjoy learning? What kinds of lesson do you enjoy at school?

Table 3 Pilot Study arrangement

Engage the participants / Building rapport

I visited the participants' tutorial centre individually and asked them whether they wanted to draw together. After drawing, the child was invited to read a storybook together. During the reading, both of the participants showed their willingness to participate by paying attention and showing their smiling faces. Field notes were taken to record my observation and experience. In one of the sessions with Teresa, she just concentrated on listening to my reading and rarely showed any interactions such as asking questions or responding to the story. Thus, I asked her if she wanted to continue and checked if she needed anything. She then presented that she felt hungry and wanted to have a drink and some snacks. I did not offer any food but called her mother to bring her some snacks and drink. We then had a conversation about what she likes to eat and drink. Both sessions reached a pleasant end, and both of the participants said that they were looking forward to the coming session.

Drawing

At the second session of the pilot study, I asked each child to draw a picture of a gifted person on a big piece of paper and had a conversation during this time. I recorded the drawing activity and the conversations using an audio recorder. I gained detailed information from the drawing activity, mainly in relation to what the children had failed to address when answering the verbal questions. For example, when I asked Teresa what her idea about giftedness, she simply answered "being good at something" or "being super good at something", but when I asked her to tell me what it means to be "being super good at something" by drawing, she then drew something that she is actually good at (i.e. dancing, singing and telling stories to her little brother) This aligns with the models initially described in the literature review, specifically the MDAAM model, as it links back to building knowledge and demonstrating competence, as identified within the model.

Learning from the drawings of children is something that has been documented in the literature in relation to the social, emotional, physical and psychological effects of analysis (Farokhi and Hashemi, 2011). It becomes a useful tool for analysis because drawing transcends culture and, while the style of drawing may differ, children tend to use the same forms to document what they want to say (Farokhi and Hashemi, 2011). There is a range of techniques that can be employed during this interpretation, but the most common is to focus on words and concepts that children use to explain their drawings in addition to the pictures themselves (Trend, Everett, and Dove, 2000). This holistic method of interpreting children's drawings offers a researcher greater allowances for interpretation, as data is collected from multiple points (Haring and Sorin, 2014). Thus, a combination of drawing interpretation and children's explanations offers the best avenue for my research study to pursue.

3.7.3 Lessons Learned from the Pilot Study

The pilot study allowed me to gain valuable insights into how the main study might be conducted. The following information outlines the relevant details.

Viability and flexibility of research tools

I discovered that the tools that I use to collect data, including drawing, might be helpful when investigating the children's understanding and facilitating their presentation. In the beginning, they tended to hesitate to tell me what they thought. I waited for the children to be ready and then asked them to draw anything related to the school setting. Because I assumed that their reluctance might be due to the fact that this might be a 'test-like situation', I tried to make it flexible to their needs (Pappas and Pettegrew 1991, p. 431), I continued to suggest that there was no assessment of their responses, I was just looking for honesty. As a result, it was my goal to better understand the ways that they made sense of the world and how they specifically constructed meaning.

It was important for me to have conversations with the children about their drawings while they were actually doing the work. Contrastively, I also discovered that I need to carefully consider the ways of asking questions. I often asked, in the pilot study, what the children were drawing or what they represented was while the children ware drawing. Ben was able to openly answer my questions. Teresa, contrastively, seemed upset when she was concentrating on drawing. Therefore, there needs to be time for the children to draw freely, which will allow them to experience positive feelings.

I also discovered that the procedures of the study could be modified to take into account the context. Teresa was less willing to answer my questions and asked if she could draw first and talk at the end when she saw the colouring pencil on the table. As a result, I realised that the research tools used to collect child participants' data could be modified to be suitable for the children's preference (Einarsdottir et al. 2009).

Time management

Prior to the pilot study, I was concerned about the timing of the interviews and drawings and whether this would place undue stress on the children. Both Teresa and Ben completed the interviews within 60 minutes. This suggested that the pilot study was an appropriate length, and I encouraged children to be actively engaged. I had anticipated that the interview would be less than 2 hours. I found that a maximum of 2 hours would be appropriate though I anticipated that a one-hour time frame might be more appropriate.

Data consistency

In the interviews with children, it was not unusual to have an ambiguous and inconsistent response from the participants. This may occur due to the children's lack understanding of some of the terms and the fact that they still tried to answer what I asked them. When I realised this situation in the first session of the pilot study, starting from the second sessions, all the interview questions were asked at least twice to ensure the answers from the participants were consistent. However, the participants may not have an interest in answering too many questions. So, the questions needed to be asked more directly and simply. Follow up questions were also needed to be prepared before the interview as the children might be distracted when I was processing the follow-up questions.

As a result of completing this pilot study, I noticed that I needed more data than what the children could provide. As such, in the main study, I added parental interviews as an additional data point.

3.8 Main Study

3.8.1 Overview of Participants

Six children and their parents participated in this research. I sought consent from parents to determine if they were happy for both themselves and their children to participate. The parents were also informed that I would also seek consent from the children themselves. All of the participants were informed that pseudonyms were used for reasons of confidentiality. The table below shows the information of the participants.

Child's name[1]	Child's gender	Child's age at the time of the interview	Age of being identified as gifted	Types of giftedness	Stage of schooling
Jordan	Male	5	4	Performance	K3

[1] Pseudonym used

Charlotte	Female	5	4	Verbal	K3
Ioana	Female	7	6	Performance	P1
Noah	Male	6	6	Verbal	P1
Eunice	Female	7	5	Performance	P2
Liam	Male	7	4	IQ	P2

TABLE 4 THE INFORMATION OF PARTICIPANTS

All the interviews were conducted at the tutorial centre that the children used to visit at the weekend. It was my intention to carry out the interview in the place that participants were already familiar with and used for weekend lessons in order to ensure minimum disruption to the participants' routine.

3.8.2 Data Collection

The methods used in the data collection process were semi-structured interviews with both children and parents and drawing (with children only)—several interview sessions over several weekends. Three interviews sessions were conducted with the children participants and two with the parents. For both children and parents, each interview lasted about 30-60 minutes.

3.8.3 Disruption and Delays

The original schedule of the interview started in July 2019, but due to the widespread protests in Hong Kong, for the consideration of the participants' safety, the interviews were postponed for several weeks. The first session was then started at the end of September, but a few days after National Day (1st October 2019), the government enforced another law, and this action intensified the unrest and disruption. Interview sessions were therefore cancelled again as the children could not safely arrive at the tutorial centre. One of the participants, Charlotte, was attacked by a tear gas bomb one day before the interview (6th October 2019). I asked Charlotte's parents and checked whether she was well. The reply from Charlotte's parents was, "*She is fine, she is not afraid. But she is having some allergic condition, such as skin inflammation and coughing. She may need to take some rest. The doctor said the allergic condition should be relieved in a week*". I then called other participants to check if they were safe. All of them, apart from Charlotte, were unharmed and were willing to resume the interviews when the protests ceased. The

interviews could not start even in November, as there were protests and vandalism every week. For the consideration of the participants' and the researcher's safety, the interviews were not resumed until the city was calm.

3.8.4 Data Analysis: Transcription and Translation

Words or texts reflect individuals' stories on an ongoing basis when people are explicating their feeling or opinions by language (Ho, Holloway and Stenhouse, 2019). The language itself is already a translation of an individual's experiences (Ho, Holloway and Stenhouse, 2019; Ho et al., 2019; Merriam et al., 2001). Therefore, when the participants replied to the interview questions, I was aware that I understood the meaning of participants' experience through their language. At the same time, the meaning of the participants' experience could be influenced by my previous experiences, positions, values, and beliefs. In this sense, I "*become part of the process where meanings are shared and co-constructed by both the researcher and researched*" (Ho et al., 2019).

The interpretation in the translation between two languages can cause some challenges, particularly in qualitative data (Ho et al., 2019). In light of the influence of cultural differences on meaning construction when evaluating language, the translation process became complicated in this study. In this study, the collected data were in Chinese (Cantonese) and needed to be translated into English. The differences in the two languages generated additional challenges in transferring meaning.

In the translation process, I sometimes found difficulties in finding equivalent concepts between two different languages, especially when the participants were using metaphors. For example, a mother described her son's personality is like "eating people with spitting out bones". I realised that it is a Chinese metaphor which means an individual maximises his/her own benefit only. But I still needed to figure out if there was any implication in the context of using that metaphor and if there was any positive or negative comment within that metaphor. After the clarification of the Chinese meaning, I then translated that statement into English that "my son's personality is like knowing how to approach people to maximise the satisfaction of his own interests". It was a challenge that the researcher needed to convey the meanings using terminology that offered equivalency,

rather than to provide a word for word translation. In order to avoid the loss and misinterpretation of meanings and to ensure the validity of this qualitative study, I needed to ask any follow-up questions in the interviews. Parents were also invited to comment on my interpretation. As a researcher and the translator, I played a facilitating role to ensure the presentation of meanings constructed by participants was accurate. Through this translation process, participants' experience and viewpoints were understood and appropriately conveyed (van Nes et al., 2010; Ho et al., 2019).

Some literature suggested involving two to three translators in the process (van Nes et al., 2010; Ho et al., 2019), but for the consideration of participants' confidentiality and the corresponding research questions, the involvement of other translators could have complicated the whole process of the research. I, therefore, focused my attention on being a translator and analyst to analyse the data. In reference to past research, I decided to mitigate potential limitations by analysing data in the original language for as long as possible. This aided in interpreting the participant's experience and points of view (Ho et al., 2019; Chen and Boore 2009; van Nes et al., 2010). Adopting the translation process from Ho et al. (2019) and Ho, Holloway and Stenhouse (2019), and after considering the context of this study, the translation process in this study involved six steps:

1. transcribing data (verbatim) in the original language, Cantonese
2. developing categories and subcategories in English (as my study is written in English),
3. analysing data in Cantonese,
4. translating the coded data from Cantonese to English,
5. coding the translated data in English,
6. contrasting the two forms of codes, categories and subcategories, and developing meaning-based translated findings.

While analysing and interpreting the translated data, my thinking was done in English, and my subsequent explanations were also in English. Contrastively, while analysing the data in Cantonese, my thinking was in Cantonese. This strategy assisted me in the development of a more precise understanding in reference to the unobvious differences in meaning and arriving at the English phrasings that were closer to the Cantonese data. A dictionary and thesaurus were both consulted to help with this process.

There was a limitation of bias, in that the interpretation of the data during translation and the analytic process required interpretation by the researcher (see Section 3.10). Therefore, to further demonstrate the credibility of research findings, it was important to emphasise the clarity of the decision-making process. The involvement of my supervisor could also minimise the misinterpreting data and findings.

3.8.5 Coding

In an attempt to organize the data, thematic coding was employed. This was divided upon the research question, and coding structures matched elements in the literature that were highlighted.

In the construction of giftedness, there were elements in the literature that were particularly apparent. These themes included academic/intellectual ability, creativity, social ability, and athletic ability (Gagné, 2005) (see Section 2.3). Therefore, in attempting to define giftedness, these became the themes. This was a relatively straightforward process, as the responses by both children and parents fell into these categories (see Section 4.3.1), and there were no outliers to consider.

In terms of linking giftedness to the learning environment, I began with four themes, classroom activities, teachers, working individually or in groups, and the home environment. These were derived from my interview questions (see Appendix D) and seemed to encompass four distinctly different elements that responses could be divided into. From this point, I was able to narrow these down further into sub-themes, documenting instances that were most commonly mentioned by children. As there were only six children, each of the themes was then divided into two subthemes (see Section 4.3.2).

In considering themes for positive learning development, from research question three, I began with four codes that were taken from the literature; this included (1) structure of the classroom environment, (2) interpersonal relationships, (3) goal orientation, and (4) teacher support. Sub-themes were then created, corresponding to the study by Beld et al. (2017) (see Section 2.5.1). I had initially included other sub-themes, as documented in the literature by Beld et al. (2017), but there when there were no instances of these in the findings, they were subsequently removed.

3.9 Limitations

3.9.1 Positions of Power

There are some crucial assumptions that must be considered when conducting research with young children. It is crucial to examine these considerations in order to mitigate criticisms of traditional research. The criticisms of traditional research when using children as participants may include children being treated passively, the existence of unequal power relations between adults and children, a narrow focus that only addresses the needs of the research and other considerations which might exist in unequal power dynamic situations (Woodhead and Faulkner, 2008). In the current research study, as described above in positionality, there is implicit bias and imbalance of power between the researcher and the children. It is my responsibility as the researcher to ensure the children participants have the right to choose what they want to tell me during the interview. The matter of children's rights in the study is also discussed in the Ethical considerations section above. The imbalance of power is a significant limitation, as the power structure will always exist, no matter what the researcher does. Instead, it is important to acknowledge that the researcher understands the imbalance and works to build a rapport with both the children and the parents.

3.10 Conclusion

This chapter described the policies and procedures that comprised the methodology of this thesis. In doing so, it evaluated not only the theoretical framework that framed the study but the intricate details of how this was accomplished. To begin, the research was situated within Clough and Nutbrown's (2007) '4 P's' of social research: persuasive, purposive, positional, and political. In using these as building blocks, the context of the study took shape.

The intention of persuasive research is to convince others of its value. In this project, the value to Hong Kong and the educational process is evident. A gap in the literature has been identified, and a clear strategy for how to approach the lack of research in this area has been identified. Furthermore, it considers an issue from the perspective of children, which is a novel way to approach this type of study. Children, especially children in Hong

Kong which can be identified as a collectivistic, paternalistic, and hierarchical cultural context, are often not given the opportunity to express and to have their opinions heard and validated (Kwok and Li, 2015). This study attempts to break that mould by demonstrating to the reader that a process can be employed that allows children to speak and draw their perspectives in order to better understand their reality. The value that the children get from being heard translates to the value that others get from this study. Thus persuasiveness is demonstrated.

From the standpoint of purposiveness, this research study intended to achieve something as a result. In reality, it attempted to achieve several elements from both a personal and professional position. From a personal view, this type of qualitative research was a learning experience, and this methodology chapter allowed for clear and methodical steps to be identified. Research of this nature is relatively fluid, and there is no possible way to document every step of every process within a single chapter; as a result, I learned to focus on the important elements and to highlight the inherent value of the interviews, drawings, and pilot study that led to my final result. From a professional position, the chapter was able to demonstrate that the methodology was embedded within an appropriate context, as a considerable amount of literature was consulted to ensure that guidelines were adhered to, research practices were appropriately implemented, and ethical guidelines were followed; all of these elements combine to demonstrate purposiveness.

This project also demonstrates positionality, which Clough and Nutbrown (2007) indicate expresses a distinct perspective. While it is acknowledged that this type of research elicits a researcher bias within the findings, what is more influential is the perspective of the children. By using multiple methods (i.e. interviews and drawing), the children were provided with a unique opportunity, and the project as a whole takes on a different perspective. In other research studies, it has been the responsibility of the teachers or administrators to dictate what gifted children need to be supported and nurtured throughout their education (Wong, 2002). While these studies are valuable, this methodology chapter demonstrates that there are feasible ways to collect data from children and that when this data is combined with perspectives of parents, a more well-

rounded picture is presented of how giftedness is embedded in all aspects of the learning environment, including both the classroom and the home.

The final 'P' in Clough and Nutbrown's (2007) social research philosophy is 'political'. In this instance, the project facilitates some type of change. Up until recently, Hong Kong functioned under the British system of education and has moved to a more independent view of its own educational needs within the last decade. The participants in this study are living at a time when Hong Kong is experiencing widespread change and considerable disruption. This methodology identifies two significant challenges, the social uprisings and protests and the infiltration of COVID-19. Both of these external factors will shape the way that education proceeds in the future, and it is still uncertain what this will look like specifically. As a result, it is even more important that this methodology chapter comes across as clearly presented and transparent, as it is being presented at a time when there is a real opportunity for change.

In terms of methods, semi-structured interviews for parents and the addition of drawings to this process were deemed to be the most appropriate for this type of project. Qualitative research processes were justified, and this was framed within the context of ethical considerations to ensure that appropriate protocols were in place to protect the parents, children, and the researcher from any harm. Children were also given pseudonyms. It is acknowledged that pseudonyms usually are culturally appropriate (i.e. the children would be given Chinese pseudonyms), however, in this case, the children all had 'Western' names in their gifted centre, and so were provided with 'Western' pseudonyms in this study. While it is acknowledged that the practice of giving children 'Westen' names for the learning setting is controversial (Roberts, Smith & Pollock, 2004), this goes beyond the scope of this paper and is not appropriate for discussion. Pseudonyms are designed to provide anonymity for the participants, and in this case, this has been achieved; thus, the purpose of their inclusion has been justified. Furthermore, all participants were given the right to withdraw from this research at any time and were encouraged to email me with any associated questions. None of the participants chose to withdraw, and no questions were brought to my attention at the time of writing this thesis.

Finally, this chapter highlighted the limitations that exist within it. All research projects have limitations, and there are no exceptions here. The most poignant one identified is the position of power, which is acknowledged as significant but not overwhelming. Researcher bias was also considered as an area where this research project had the potential to provide a skewed view of reality. It is understood that the process of mitigation of these limitations is well documented within this chapter. This leads to the following chapter, which documents the findings that were obtained using the methods described above.

4. Findings

4.1 Overview

Obtaining the data for this study was anything but straightforward, with the uprisings in Hong Kong and the subsequent outbreak of Covid-19, interviews for this project were postponed for several weeks. Beginning with data collection in September 2019, this research project examined the concept of giftedness using three methods: semi-structured interviews with children, drawing with children, and semi-structured interviews with parents of the children participating in this study. All interviews with children and their parents were completed by December 2019. Interviews were conducted in Cantonese, translated into English, and analysed by thematic coding (see Chen and Boore 2009; van Nes et al. 2010; Ho et al. 2019). After the completion of the coding and the creation of subcategories, findings are presented using meaning-based translated findings (Ho et al. 2019). The translation process was a challenging one, as not all phrases translated particularly well, especially in terms of metaphors (see Section 3.8.3). During the coding process, there were also statements made that could be categorised in multiple ways; in these cases, both codes were applied to the statement, despite the overlap.

This findings chapter is divided into three main sections, each of which corresponds to one of the research questions designed for this study. While the first section concerns only responses from the interviews with the children, sections two and three focus on both child and parent perspectives on the learning environment, giftedness, and positive learning development.

For the six participating children, each child has been provided with a pseudonym (Jordan, Charlotte, Ioana, Noah, Eunice, and Liam). There were five sets of parents, as Jordan and Eunice are siblings. In each case, both the mother and the father were present at the interview. The coding structure for the parents was designed to recognise the different participants, and they were divided as Mother (M) or Father (F) followed by the first letter of their child's name, as follows:

Child's Pseudonym	Child's Parents	Parent Code
Jordan and Eunice	Mother	MJE

	Father	FJE
Charlotte	Mother	MC
	Father	FC
Ioana	Mother	MI
	Father	FI
Noah	Mother	MN
	Father	FN
Liam	Mother	ML
	Father	FL

Table 5 Parent Coding Structure

Each interview with the child took between 45 and 60 minutes; subsequent interviews with parents took 60 minutes. In the parental interviews, where both parents were interviewed together, each participant did not necessarily answer each question. In most cases, only one parent provided a response, though parents generally took turns when commenting.

4.2 Connecting the Learning Environment and Learning Needs

4.2.1 The Self-Identified Learning Needs of the Children

The first research question that was considered for this study asked the children participants the extent to which they were able to explain how their learning environment was able to accommodate their learning needs. Overall, this aspect of the investigation was at quite a high level for these kindergarten and primary school students, and so a series of simplified questions was constructed to ensure that the best possible description was provided by the children in response to this overarching theme. From a review of the literature, it was evident that students' learning needs comprised two major areas: social/emotional needs, and academic/intellectual needs. Therefore, before the researcher asked the children to assess whether the learning environment could connect to their learning needs, it was important to determine what types of needs the children felt that they had. In order to achieve this, a list of statements was made, and students were asked to respond with 'yes' or 'no'. Regardless of their answer, they were then asked 'why'? In doing this, the children were asked to explain the justification for their response. In some

cases, the children changed their response after an explanation of what they meant. It should be noted that these are translated from the Chinese language, and sometimes the translations are challenging to produce precisely. However, the grammar and structure that existed when they were presented to the children were assumed to be clear, since none of the children expressed confusion when responding. These statements are documented in the table below:

The statement made to Children	**"Yes" Response**	**"No" Response**
Social & Emotional Needs		
I want to do something perfectly. If I get part of the task wrong, I feel bad.	Eunice, Ioana, Charlotte, Noah, Liam	Jordan
I think I am very sensitive.	Charlotte, Eunice, Ioana	Jordan, Noah, Liam
I have lots of friends	Jordan, Eunice, Ioana, Noah, Liam	Charlotte
Sometimes the other children do not want to play with me.	Charlotte, Jordan, Liam	Noah, Eunice, Ioana
Sometimes the other children do not want to do classwork with me.	Jordan, Liam	Eunice, Ioana, Charlotte, Noah
I get angry if I cannot do something on the first try.	Eunice, Noah, Liam	Ioana, Charlotte, Jordan
If I do not think that I can do something well, I do not want to try it at all.	Jordan, Eunice, Charlotte, Noah	Liam, Ioana
Academic & Intellectual Needs		
I think I am smart.	Jordan, Eunice, Ioana, Charlotte, Noah, Liam	
I like it when the teacher gives us difficult work to do.	Eunice, Ioana	Charlotte, Noah, Jordan, Liam
I like it when we do classroom activities where I get to work in a group.	Eunice, Jordan, Noah, Liam	Charlotte, Ioana
I like it when we do classroom activities that involve technology	Jordan, Eunice, Ioana, Charlotte, Noah, Liam	
I like it when the teacher gives me special work to do	Eunice, Ioana, Liam	Charlotte, Noah, Jordan

Sometimes I get bored in the classroom, especially when the work I do is too easy.	Jordan, Eunice, Charlotte, Ioana, Noah, Liam	
I like it when the teacher lets us do creative things.	Jordan, Eunice, Charlotte, Ioana, Noah, Liam	

Table 6 Children's perspective on Learning Needs

In addition to providing these 'yes' or 'no' responses, the children were asked to explain their responses. In terms of social needs, female children were more likely to indicate that they were sensitive. Charlotte, despite being one of the youngest, was the most willing to talk about being sensitive, she noted:

> *Sometimes the people in my class do not want to play with me or work with me, and it makes me sad. I think I am fun to play with, but sometimes they do not want to play the same things, and so I do not play with them, and then that makes me sad* (Charlotte).

In looking at this quote, Charlotte is implicitly indicating that she is only willing to play with the other children if they play the games that she is suggesting. If they suggest a game, she is not willing to participate in that activity unless it is something that she likes to do. She indicates her sensitivity by expressing her feelings about a certain event (i.e. the other children not wanting to play with her). As a result, Charlotte is indicating that playing with her friends is a component of her social needs.

Of the group, Jordan was one of the most boisterous children. He was quite willing to talk and showed very little reservations about saying exactly what he felt. He was asked if he liked to do things perfectly, and he was the only child that indicated that this was not important to him. When he was asked to explain, he said:

> *I cannot do everything. My mother and father can do things better than me because I am only small. When I am bigger, I will be able to do more things…. better things… and so it is okay if I am not perfect every time, but I should try hard* (Jordan).

His sister, who grew up in the same household, offered a different opinion about perfection. She felt that being perfect was an important part of being gifted (under her interpretation of giftedness) and so she made a comment:

> *My father likes it when I do things perfectly. When I bring my work home, and it is all perfect, then he is very happy. I am happy to show him my work when it is perfect because then he smiles at me, and I know that I did well* (Eunice).

In this statement, Eunice is showing social awareness about the feelings of others, so she is not necessarily talking about her own well-being but is cognisant of the feelings of her father. Eunice's response, here, may be interpreted as a gendered approach to social structure, as there was not the same type of response given by her sibling, and it was much more apparent that the female children discussed the need to please their parents. This level of failure avoidance was generally consistent across all the children in terms of social needs; while some of them suggested that they were not sensitive, they were not willing to acknowledge any particular problems with the social structure in their classroom or in their home setting. For example, the children did not indicate that other children in their classes were less gifted (or more gifted), they did not generally pinpoint any particular student as a problem for them, but each spoke much more generally about their social needs.

In an attempt to link the social needs to the academic ones, the children were asked if other children wanted to work with them in groups during class time. Jordan and Liam indicated that this was sometimes a problem for them, Liam commented:

> *Sometimes when the teacher makes the groups, maybe not everybody wants to listen to me, but when I can pick my group and work with my friends, then we can work well together* (Liam).

For the other children, they generally felt like working with other peers in groups was not necessarily a problem. Eunice, as an example, commented:

> *If we have to work in groups, then we can do the work in groups, it is not such a problem* (Eunice).

In an overall evaluation of the social needs of children, they were very divided on how they might identify their own social needs. For some, there was a demonstration of a lack of social cues, whereas, for others, there was more pressure to conform to the expectations set out for them by their teachers and parents. In addition to these social needs, children were also able to talk briefly about their academic needs.

There were three statements which all the children agreed with. They all felt they were smart; all felt that technology was important for learning, and felt that they tended to get bored if the work was too easy. Liam made a comment that appropriately summarised the views of many of the children when he indicated:

> *I think that sometimes the teachers give us too easy work like we are babies, but I think they have to give this work, and sometimes they just talk to us, and that is boring. I like it when I can do well on hard work…but not too hard* (Liam).

The children were also asked to comment on how they felt in the classroom, and it was Eunice who agreed with every statement that was presented to her. She felt like it was important for her to do well and to continue to do well in her studies. She liked it when the teacher paid special attention to her, and her comments, when responding to academic needs were often directed to how other people saw her, for example:

> *My teacher is nice to me, and she gives me some things to do and tells me that I do a good job and I like that. If I did not work very hard, then the teacher would not be nice to me and let me do special things, so I think I should do well and do everything perfectly* (Eunice).

Eunice did appear to be the most rules-bound child of the ones in this study, as she often focused heavily on doing what she was told and conforming to the requirements set out by the teacher and her parents, thus demonstrating failure avoidance and a willingness to please. She also seemed content with doing difficult work, if assigned by the teacher and working hard to achieve success.

Based on the participants' responses to the above questions, I tailored other questions to align with the pre-defined categories that outline the scope of the learning

environment (see Table 1). In doing this, four categories of support were noted: structure of the classroom environment, interpersonal relationships, goal orientation, and teacher support. As many of the children were very happy to talk about their friends and their teachers, these were avenues that were further explored with the willing participants. Specifically, aspects of trust and respect, that had not been covered in previous questions were posed to the children. All the children were able to explain the terms of trust and respect when asked. Generally, they attributed trust to be "telling the truth" (Jordan) or "not telling secrets" (Ioana), whereas they provided examples for respect such as "not talking when the teacher is talking" (Liam) or "listening carefully" (Noah), or "not laughing at other classmates' ideas" (Jordan).

When asked the questions, do you respect your teacher, and does your teacher respect you, all six children answered yes. They were then asked if this was an important part of their classroom experience, to which they all responded 'yes,' but none could give a direct answer as to why classroom respect was important, and answers ranged from "just because it is" (Jordan) to "so nobody feels sad" (Charlotte). Similar responses were provided when the children were asked to consider a trust. All six indicated that trust was important between the teacher and the students so that "everyone can be happy" (Charlotte) and "so we can learn a lot" (Eunice). These demonstrate age-appropriate responses, which might be expected from these children.

Overall, the children prioritised a learning environment that fostered inclusion and development. The teacher was seen as a hierarchical figure in a position of power, which is unsurprising in the Hong Kong context. As a result, a good learning environment was clear, and the teacher made rules that appeared fair and achievable. All children knew that they had to complete their work on time and that sometimes that work involved group-work and socially working well with other children. As a result, if the children felt that they could achieve what they were asked to do and that they were respected and trusted to achieve these goals, they were in a good position for success within the learning environment.

4.2.2 Connecting Learning Needs to Learning Environment

Having identified a range of social and academic learning needs that the children self-identified (see Section 2.4), the next task in the interview was to connect these learning needs to the environment. Attempting to determine what the teachers were doing in their classes was a challenging one, as the children all had difficulty describing what the teacher was doing in the classroom. It is acknowledged that this lack of teacher input is a limitation to this research project, as this would have presented an alternative viewpoint to discuss. Yet, despite this, there was concern that teacher and parent voices would overshadow those of the children and not provide the appropriate perspective needed for this project. The addition of teacher perspectives would be a useful element for future research studies. In order to try and identify some of the positive aspects of the learning environment, the children were asked (1) what was your favourite class this/last week? And (2) why did you like this class specifically. Of the six children, all six had different preferences for their favourite class including Science (Eunice), Gym (Jordan), Reading (Charlotte), Math (Ioana), Art (Noah), and Recess (Liam).

Some of the aspects of the learning environment were clear. For example, when Eunice was describing her science class, she talked about making basic circuits using a circuit board. In her class, she described a scenario where each pair had their own circuit board, and they had to use different materials to turn on a small light. The teacher gave them instructions at the beginning, and then they were allowed to work to create different circuits, but some elements, such as wood, did not make the light work. What is shown in this example is self-directed learning through an active learning classroom. Students in Eunice's example were allowed to experiment with the materials. Eunice commented that she could write down which pieces worked to light up the light. She also suggested that when she finished, she could find things in the classroom to try and make the light work. This also indicates that Eunice's teacher provided a learning environment that motivated Eunice (and her partner) to achieve success.

For Charlotte, she focused on the physical nature of the classroom. She indicated that she liked reading class, and while it is somewhat unclear whether this was a specific class or just free-time where she was allowed to read, she indicated that she liked to be able

to sit in a comfortable chair in the reading area with her new books, which she received from the school library. She commented on the 'reading corner,' as a separate place from the rest of the classroom.

The physical component of the classroom was also echoed by Noah and by Jordan. Noah completed some painting in art class and commented that he liked this type of a class because he does not have paints at his home and so this was his only time to participate in this type of activity. He indicated:

> *At my house we have only coloured pens, we do not have paints, so I liked the painting class because I can make a mess, and no one gets mad at me* (Noah).

Jordan's interpretation of the social space was much more literal and demonstrated competitive elements, as he was happy with the arrangement of the groupings during his gym class. He suggested:

> *In gym class, the teacher put us in groups, but I was with my friends and most people who were good at the game, so we did really well. We won the game. It was excellent* (Jordan).

While it is unclear if the teacher intentionally put Jordan with his friends or whether this was a chance outcome, it is clear that Jordan felt that the decision to put him with his friends positively affected the outcome of the game and felt supported by the teacher.

From a bit of a different perspective, Ioana indicated that she enjoyed the math class the best. She said:

> *I liked the math class. I like my math teacher because she just gives us what we need to do, and then we can do it, and if we have a problem, then we can just ask* (Ioana).

In this way, Ioana is focusing on the clarity of the rules associated with the math class, suggesting that it was important that she was given clear instructions and then asked to complete the work. In this way, she is still commenting on the classroom environment, but focusing more on the method of instruction, rather than the physical space.

4.2.3 Summary

The research question asked the students to explain the relationship between the learning environment and the accommodation of their learning needs, and the outcome was that students were, to some extent, able to explain this connection. They were able to identify different aspects of the classroom where they felt they learned best, including the implementation of technology-related activities and active learning pedagogical strategies. Students were able to talk about ways in which their understanding of the learning material was supported through trust and respect, as well as through rule-clarity, task orientation, and, in some cases, competition.

While the children were very excited to talk about many of the good aspects of the class, they were clearly hesitant to talk about the more challenging aspects, when asked specifically about the classes they did not like. While they could indicate situations where they were bored in the classroom, none of the children would go as far as to say that they did not like their teacher or their classmates. Students were unwilling to point to a particular classmate and express why he/she was problematic to their learning. This positive-only approach likely relates to the cultural context of Hong Kong. While the children did value the competitive nature of sports-related activities or game-based learning, it is possible that their cultural background played a role in how they described their situations.

As a result, the outcomes from these interviews demonstrate that students are able to make implicit connections of the relationship between their learning environment and the accommodation of their learning needs, but because of their young age and cultural upbringing, they are less able to make explicit connections or to identify situations where the learning environment does not meet their learning needs when asked. Future research may need to investigate classroom dynamics through other techniques, such as observation, which would allow for the connection between class and learning needs to be interpreted from a slightly different perspective.

4.3 Connecting the Learning Environment to Giftedness

4.3.1 Understanding giftedness

In terms of defining giftedness, both children and parents had different ways of interpreting the term. The table below, which aligns with the thematic coding for interpretation of giftedness, outlines a summary of the findings.

Understanding Giftedness	Academic/ Intellectual Ability	Creativity	Social Ability	Athletic Ability
Jordan, Eunice & Parents	MJE/FJE Eunice			Jordan
Charlotte & Parents	MC/FC		Charlotte	
Ioana & Parents	MI/FI Ioana			
Noah & Parents	MN/FN	Noah		
Liam & Parents	ML/FL (for Liam only)	Liam (ML define)		(ML define)

Table 7 Findings from Understanding of Giftedness

There was a considerable amount of detailed material provided by both the children and the parents on the topic of giftedness. For all the children, defining the concept of giftedness was not one that they were fully cognisant of, and some children did not actually acknowledge that they were gifted. Each child was asked the question: "What do you think it means if I tell you that you are gifted?" For example, Charlotte indicated that giftedness could be associated with the amount of love that a person had to offer. She suggested,

> *I am gifted because I am very good at loving. I can love lots of people in my family, like my mother and father. I also love my teachers, and it is easy for me to be able to love.* (Charlotte)

Charlotte's interpretation of giftedness was associated with feelings/emotion, and many of the other children also associated with being gifted with being good at something. For example, Ioana suggested that she was very good at schoolwork, and so that is how she knew she was gifted, as she stated:

> *I am a good student, and sometimes I do not have to work very hard, and I am still good at it. Mostly I am the best at mathematics, but I am also a good reader. I could read when I was three* (Ioana).

Ioana's comments about being gifted at something were echoed by both Noah and Liam, but both of these students indicated that they were good creators. Liam suggested that he was an excellent Lego builder and therefore he was going to be a structural engineer, whereas Noah indicated that he was gifted because he was very good at art class, and his creativity made him gifted.

Both Jordan and Eunice initially indicated that they 'did not know' what it meant to be gifted and both struggled to fully comprehend the question. As a result, in both cases, I prompted the children to think about their abilities, aligning my wording along with the same structure as the model presented by Gagné (2008). In doing so, I asked them to tell me what they thought their abilities were. Eunice was eventually able to suggest that she had abilities in science class and that she had a good memory. Jordan responded that he was:

> *Super fast and strong! I can run faster than my sister and faster than my friends.* (Jordan)

Therefore, while all children were able to provide a definition of what they understood giftedness to be on a personal level, there was a lack of consistency in their responses, which aligns with the literature around different types of giftedness. The children also had been designated as gifted in different areas, with Jordan, Eunice and Ioana being linked with performance, Charlotte and Noah with verbal, and Liam with IQ.

The lack of awareness that was common among the children was less evident among the parents. Obviously, the parents were aware that their children had been classified as gifted and that the children had certain abilities or talents where that giftedness resided. Parents were asked two questions related to giftedness; first, they were asked to explain how they interpreted giftedness, and secondly, they were asked how that giftedness related to their children.

In terms of defining giftedness, almost all parents defined giftedness exclusively to academic ability. None of the parents directly linked IQ specifically to giftedness, but several (MJE, MC, FI, MN) mentioned intellect as a component of being gifted. Examples of comments included:

> *I interpret giftedness as being above average at something like math, science or language…children who are classified as gifted generally, well they outperform their peers, and so they might be bored in a class because they find the material too easy, for example* (MN).

> *I equate being gifted with being smart, and generally, I would assume that a gifted child is one where the concepts come easy, versus having to work really hard to understand* (FI).

> *Giftedness implies potential in a specific area, especially among children….so a child that is good in math should have that potential explored because it might be very likely that they will turn out to be excellent at math as an adult, simply because they have a talent for it* (MJE).

The only parent who took a slightly different approach was ML, who suggested that giftedness could manifest itself in a number of different ways, she suggested:

> *I might define giftedness as being good at something, but that something could be demonstrated through any number of different ways. There are children who are particularly gifted at music and others who are excellent at sports….so I think that while most of the time we think that giftedness is being smart, I am not convinced that it always has to be* (ML).

What is shown in these comments is that the parents mainly felt that a definition of giftedness was directly associated with intellect and that it could be defined as a set of attributes.

As the questions moved on to explaining how giftedness related to their children, the parents again all commented on academic ability. For example:

We knew that Liam was gifted from the time he was around 18 months old. He started to talk very early on and was forming complete phrases very quickly. When I would take him to a mother and baby group, the other mothers would always comment on how advanced he was for his age (ML).

Ioana has always been very good at mathematics... I remember working with her when she was three, and she was already able to do simple division and multiplication. I think it was at that point that we knew she was working at an intellectual level that was greater than some of her peers (FI).

With Eunice, we did not know what to expect, she could read very early on, and the doctor suggested that she was surpassing the typical intellectual benchmarks for her age group…. But we never really thought anything of it, but then with Jordan, we sort of knew what we were looking for, so it seemed like we were able to identify that he was gifted more easily than we did with Eunice. Now looking back on it, Eunice was very good with language and with mathematics, so we probably should have identified that she was gifted at an earlier stage (FJE).

In terms of the coding for the definition of giftedness, the adults were much more likely than the children to associate giftedness with intellectual and academic ability. The literature which shows the similar division in the definition is that of Joseph Renzulli who refined the definition of giftedness into 'schoolhouse' and 'creative-productive giftedness' (Renzulli, 2005). The identification of schoolhouse giftedness is determined by standardised tests which measure cognitive abilities, such as IQ (Hamaza, Mohamed & Elsantil, 2020). Different from schoolhouse giftedness, creative-productive giftedness defined by the ability of applying and retrieving information from previously learning to new domains (Hamaza, Mohamed & Elsantil, 2020). This seemed to be true regardless of the type of giftedness that the parents identified was associated with their child initially (i.e. Performance, verbal or IQ, see Table 2). Furthermore, while the parents were willing to acknowledge that giftedness could span to areas beyond academic or intellectual ability when referring to their children, the focus was solely on academics. While this is noted, the interviews were held in a private academic tutoring centre for gifted children, so the parents may have been influenced by

setting. More research on definitions related to giftedness is required, and further clarification is provided in the next chapter, focused on Discussion.

4.3.2 Linking Giftedness to the Learning Environment

This study was interested in a variety of different learning experiences for children, and while the classroom was the most obvious setting where children would apply their giftedness, there was also justification to talk to the children and their parents about social environments and the experiences at home. In order to do this and after asking the children about their own understanding of giftedness, I explained to each child that giftedness included being talented or very good at something. Once this baseline was established, I asked them (1) what classroom activities they thought helped them to learn best, (2) what things the teachers do that are helpful for their learning, (3) whether they liked working in groups or individually, and why, and (4) whether they thought they also developed their talents outside of school, such as in the home. Parents were asked similar questions, though from an adult perspective. The following table summarises these results.

Giftedness and Learning	Classroom Activities		Teachers		Working individually or in groups		Home Environment	
Sub Category	Technology	Games	Niceness	Engagement	IND	GRP	Homework	Other
Jordan, Eunice & Parents	Jordan Eunice		Jordan Eunice	MJE	Eunice MJE/FJE	Jordan	Jordan Eunice MJE	MJE
Charlotte & Parents		Charlotte	Charlotte	MC FC	Charlotte MC			MC FC
Ioana & Parents	Ioana		Ioana	MI FI	Ioana FI			MI FI
Noah & Parents	Noah	Noah	Noah	MN FN		Noah MN FN	Noah	MN
Liam & Parents	Liam		Liam	ML FL		Liam ML	Liam	ML

						FL		

Table 8 Perspectives on the link between giftedness and the learning environment

In terms of themes, five of the children (except Charlotte) indicated that they enjoyed it when the teacher used some form of technology. This could include time on an iPad, watching videos, using a reading pen (e.g. Leap Pad), or playing an online game on the computer. According to Liam:

> *I like to watch movies in the classroom, sometimes we watch a cartoon, or we learn about the world, but it is not the teacher doing the teaching, we just get to watch, and I think this is exciting* (Liam).

For Noah and Ioana, the lessons that involved literacy were the ones that they equated with the engaging lessons, indicating that technology could help them to read certain stories in the classroom.

> *The best lessons are when we get the time to work on the iPad, but we only get to do this if we have been really good or done all of our other work because the iPad has games or we can read stories, and that makes it really fun, and so I like that the best* (Noah).

> *In my one class, we get to read by ourselves, and there is this reading pen that can help me to read books that have hard words in them. Not everybody gets to use the pen, but the teacher always lets me use it if I'm done my work early* (Ioana).

Charlotte commented on the use of games in the classroom. She indicated that she really liked when the teacher made the class interactive and then compared this to a 'normal' class where she would just have to sit and do work. For example, Charlotte commented:

> *…when we play games. The games are fun, and I think I can learn in the games. Sometimes I am the best at the games, and I can win, or sometimes my team wins. Games are better than when we just have to do normal work because then I get bored sometimes* (Charlotte).

Noah also commented on the use of games, but his response largely related to the physical aspect of learning. He stated:

> *Sometimes I get tired in class, but then we go outside and play a game in gym class and get some exercise and the teacher plays with us too. I think I learn a lot about how to be a sports athlete when we have gym class* (Noah).

While technology and games were the most prominent activities that helped them learn best, there were also single instances where the children mentioned mathematics worksheets (Eunice), science experiments (Jordan), and math games on the computer (Liam), which tend to indicate that the children often prefer active learning activities to passive learning.

The children were then asked what the teachers do that is helpful for learning. In terms of this question, the expectation was that the children would suggest ways in which the teachers were helpful, but instead, all six children focused on the 'niceness' of the teacher. Some were very overt in their claims, such as:

> *I like [Teacher X] because she is nice to us* (Eunice)

> *I don't like [Teacher Y] because he yells at us a lot. I don't think it is good when a teacher is mean* (Liam).

Other children were less obvious in their comments, but largely represented the same types of information, for example:

> *[Teacher Z] takes time to listen to us, and that is nice* (Charlotte)

> *[Teacher A] is so silly and makes me laugh* (Jordan).

From these examples, it is clear that the children are seeking teachers that are socially and emotionally supportive and are able to link that to their development.

The third question asked of these children related to their preference for individual or group work. One of the components of the learning environment relates to the social dimension, and therefore, it was important to examine how these children perceived others. In this case, the children were divided by gender, with the girls claiming that they

preferred to work individually, whereas the boys preferred to work in groups. None of the children could identify why, specifically, they preferred to work in this way, though Noah did mention:

> *It is more fun when I get to work in a group with my friends because then we can have fun and not be so serious* (Noah).

This statement suggests that Noah is seeking group interaction and works well in a social setting.

Finally, the children were asked about whether their home environment helped with learning. Four of the children (Jordan, Eunice, Noah and Liam) suggested that they had to do some homework after school was finished that was set by the parents, and that this likely helped with their learning. This excluded Charlotte and Ioana, but there was no explanation as to why these children did not complete homework at home, other than the parents did not set it for them. For the children that did homework, the following examples highlight the theme:

> *Our mother makes us do homework every night when we get home from school. It is really boring, but then when I get to school, I can already know the answer* (Eunice)

> *My father makes me do math homework with him. Sometimes we make it into a game, but usually, I have to do some math every night* (Noah).

For Ioana and Charlotte, they indicated that they did not learn at home, as Charlotte commented:

> *At home, I can just play. I don't need to do learning* (Charlotte).

Interestingly, this comment further suggests that Charlotte is equating learning with intellectual activities and not with any other component of giftedness.

The parents of the children provided much more comprehensive responses. In some ways, they were apprehensive about the classroom environment and what the children were learning academically. For example, MC indicated

I worry a little bit about putting Charlotte in gifted classes and having her work to a higher standard. She is only little, and I think it is also important for her to enjoy her childhood. I don't want her to think that she is different in a bad way. I just want her to be healthy and happy (MC).

Along similar lines, Ioana's mother also commented that she was concerned about her daughter's balance of giftedness and childhood development when she commented:

Ioana can become very focused on getting everything perfect, and when she is not perfect, she can be very hard on herself. Some of the activities in the gifted classrooms are meant to challenge her, and she can become very frustrated when she does not get it right on the first try… but the activity is difficult, so I wonder if she really needs this level of stress in her daily lessons (MI).

All of the parents, at least to a certain degree, felt that the teacher was instrumental in developing their child's giftedness. Noah's father suggested:

[Noah] spends a lot of time at school, probably more time than he spends at home, so we expect the teacher to work with him to make sure that he is developing at a rate that is suitable for him. This might be faster than the other children, but we don't just want him to be good at one thing, we want him to have lots of different experiences and to enjoy them, the teacher is responsible for that (FN).

This train of thought was echoed by Liam's father, who suggested:

Liam tends to do better in the classes where he likes the teacher. He becomes more engaged. When we ask him about what he did at school, he always picks out the more interesting activities to tell us about, like a science experiment, or a game he played (FL)

From a thematic perspective, it is evident that the parents valued both the classroom activities and how they were taught, suggesting that the teachers were instrumental in making the lessons engaging and interesting, thus promoting learning. Parents tended to speak from a more general perspective, in that they did not specifically

reference giftedness when referring to different activities in the classroom, but more than the teacher's actions could foster and develop learning overall.

When asked about whether their children were likely to prefer group work or individual work, Parents of Noah and of Liam suggested that group work would likely be preferred, whereas all other parents suggested that their children might prefer to work individually. Noah's mother suggested:

> *Noah likes to talk, so I would imagine that he would prefer group work. I do not know if this is better for him, because it is possible that he could distract others* (MN)

Whereas Liam's father suggested that it was Liam's competitive nature that led him to believe Liam would prefer group work.

> *[Liam] always wants to win, so he wants to be in a team and then to be the star. This can be somewhat problematic because he can then dominate over some children that are a bit quieter, but he wants to always lead his team to victory. I think that is true both in the classroom and when he participates in any extracurricular stuff* (FL).

Other parents (of Jordan, Eunice, Charlotte, and Ioana) simply suggested that their children were quieter and typically preferred individual activities but did not necessarily equate this to a better or worse learning environment, but rather, personal preference.

Finally, parents were asked about learning in the home, and this was a situation where parents' responses differed significantly from those of their children. Parents pointed to other activities such as piano, gardening, baking/cooking, and sports as elements where learning extended beyond the classroom, all of which appeared to be quite gendered in relation to the children. The mother of Jordan and Eunice suggested:

> *Both of our children learn at home. We read to them every night, and they read or look at books before dinner, but they also help to make dinner, help to set up the table and do chores around the house like make their beds. Eunice does piano every day, and Jordan plays football, so they are learning to do other things besides school when they are at home* (MJE).

In a similar comment, the mother of Charlotte commented:

> *When we are at home, Charlotte is very good at helping. We are teaching her simple things like how to make her breakfast. In this way, we are teaching her independence and discipline. Also, we take her on a lot of walks and try to get some exercise because we know this is important for her. Even though she is little, we try and support her school learning with other aspects of life* (MC).

What is evident from this is that parents focused on the home environment as being part of the learning process but tended to differentiate how it is different at building skills and talent for elements that go beyond academics.

4.3.3 Summary

This section has addressed the second research question for this study, examining the understanding of giftedness from the perspective of the children participants and their parents. Distinction was reflected in the finding that parents tended to define giftedness as relating to academic or intellectual ability (schoolhouse giftedness), though the children were much more open in their definitions in creative-productive giftedness (Renzulli, 2005). It has also examined the link between the learning environment and giftedness, suggesting that the learning environment is not solely focused on the school setting, but applies to a much wider context with a range of variables. What was documented was that the children believed that learning was the result of a nice teacher and an engaging or fun classroom, but parents tended to view learning on a wider scale, suggesting that giftedness can be developed across a wide range of elements and that children must be encouraged to do multiple different activities in order to truly learn effectively.

4.4 Themes of Positive Learning Development

The third and final research question for this study looked at what methods the children and their parents viewed as the most essential for positive learning development. For this research question, it was essential to use both the words of the children and the drawings that the children produced. Because there were so many elements of data, each child and their parents were interviewed individually, before themes between children were

established as a whole. The table below summarises the findings before each individual perspective is documented.

Scope of learning Environment	Subcategory	Jordan, Eunice & Parents	Charlotte & Parents	Ioana & Parents	Noah & Parents	Liam & Parents
Structure of the classroom environment	Order and organisation	MJE (Eunice)	Charlotte	Ioana	Noah, MN	Liam, FL
	Rule clarity	MJE (Eunice)	Charlotte		Noah, MN	Liam
	Teacher control		FC	Ioana, MI	MN	
	Innovation	Jordan, Eunice		MI	Noah	
Interpersonal Relationship	Involvement	Eunice	Charlotte			
	Friendship	Jordan	Charlotte			
	Working with classmates	Jordan Eunice	Charlotte		Liam	Noah
	Willingness to help classmates	Jordan	Charlotte		Liam	Noah
Goal Orientation	Task orientation	Jordan Eunice		MI		Liam
	Competition			Ioana		Liam, FL
Teacher Support	Responsive to the needs of students	MJE (Jordan)	FC	FI	Noah, MN	Liam, FL
	Respect	MJE (Jordan)	Charlotte, FC		Noah	Liam
	Trust			MI	Noah	Liam

TABLE 9 CODING FOR THE SCOPE OF THE LEARNING ENVIRONMENT

4.4.1 Jordan

Jordan drew a picture of a play structure, including a slide. He chose to use a variety of different colours with crayons. It was a simplistic drawing, and of the children, Jordan was not particularly interested in drawing, but he was very vocal in his interpretation. According to Jordan, the ability to go outside helped to create a positive learning experience. He indicated:

> *If I want to learn well in the class, then I should go outside because when it is sunny, then I can play outside with my friends…. if I am bored in the class, and we go outside, then I feel better when have to come back inside…but sometimes I am sad to come inside…but I can focus better on my work after I go outside. I think it is important to not just have school but also to have fun because we are kids.* (Jordan).

This response came after Jordan drew the play structure on the paper. His thoughts, in this case, demonstrate aspects of attention and building of motoric competence. Furthermore, his connection between his level of activation and attention in class and his ability to take breaks and go outside is a clear indication of knowledge about his individual characteristics.

Jordan's parents focused more on the academic components for learning development. Jordan's father suggested:

> *Jordan is a very active child, so he does not do as well when he has to sit and listen for long periods of time. He is curious and likes to learn things through the investigation. He is lucky to have a sister that learns in the same way, so they can learn together and work together. Jordan, even though he would never admit it, wants to be like his sister, and wants to do many of the things she is doing* (FJE).

In doing this, Jordan's father is suggesting that active learning is an important element of Jordan's progress, but he is pairing this with the larger learning environment including siblings and family, which suggests that he believes the best possible learning development for Jordan comes from a mix of school and home activities. In this way, Jordan's father was able to point out ways in which Jordan was similar to his sibling, but also ways that he was different, highlighting the individual characteristics required that makeup Jordan's learning environment.

4.4.2 Eunice

Eunice's drawing depicted school as a zoo (see Appendix E), but there were many facets to her picture. It included a ticket office, a food stand, and a mermaid singing under the sea amongst some sea creatures. Initially, when Eunice drew her school as a zoo, it was

thought that she was going to talk about a somewhat chaotic atmosphere, as would typically align with the metaphor 'like a zoo.' In fact, Eunice meant that it is a great opportunity to experience so many things. She said:

> *I like the zoo, and I like school. When we go to the zoo, I can see all different animals, but in the school, I can see all different teachers, and I can have mathematics class, or science, or music, or art, and I like that* (Eunice).

Some of Eunice's depictions were slightly more abstract, she said:

> *When I am in music class, I pretend that I am a mermaid singing under the sea with all my sea friends* (Eunice).

> *My friends and I eat lunch at school every day. Food is very important because it keeps me healthy* (Eunice).

With these statements, Eunice is talking about elements beyond her intellectual abilities. She is fostering creativity through imagination when she talks about being a mermaid under the sea. When she talks about eating lunch with her friends, she is demonstrating social competence characteristics and her understanding of how multiple elements (e.g. food and learning) link together in a bigger picture.

From the perspective of Eunice's parents, they felt similarly to what they expressed for Jordan, specifically that:

> *Eunice is better at staying focused on a task over Jordan, but she is older, and so this is expected. She is very good at paying attention in class, and the teachers often tell us that she is very good at staying focused on a particular task. We know she likes school, and she likes to read and learn at home, particularly about animals and nature. She is calmer than Jordan, and she has many friends that she likes to play with at school. We also know that she likes it when the teacher engages with her and gives her special attention, but we always want her to know that she is not better than her peers, she must work with them, not against them* (MJE).

From this representation, Eunice's mother is highlighting the learning environment that fosters inclusivity and promotes both academic and social interaction. In this case, the focus was also on the home as being part of the learning environment, in addition to the school. Eunice's mother also indicated the ability to build knowledge through learning about topics that were of particular interest (e.g. animals and nature) but is also displaying gendered expectations between Jordan and Eunice, where Eunice should be calmer because she is a girl.

4.4.3 Charlotte

For Charlotte's drawing, she drew a self-portrait of herself surrounded by hearts (see Appendix F). She indicated that it was important for her to love other people and for them to love her back. When asked to describe the best methods for learning development, through the questions (1) "what do you like best about your school?" and (2) "what things do you need in your life to help you learn the best?" Charlotte was able to indicate:

> *I like my friends and my teachers. If I did not have friends and teachers, then I would be sad* (Charlotte).
>
> *I need a pencil to learn…and an eraser because sometimes I make some mistakes* (Charlotte).
>
> *I need to always listen carefully so I can learn a lot* (Charlotte).

Charlotte was generally unable to make strong connections between her learning environment and how she learns best, focusing on the literal rather than her own personal learning (e.g. by indicating she needed a pencil). Yet despite this, Charlotte did make reference to levels of activation (e.g. listening carefully) and to attention control. She also made reference to intellectual ability (e.g. learning a lot) and to social competence (e.g. not having friends would make her sad).

Charlotte's parents, when asked about the best possible methods for Charlotte's learning development, indicated:

> *Well, Charlotte can be very creative when she wants to be, but in our society, sometimes this creativity is not valued as much as being good at mathematics or*

technology. So it is important that Charlotte learns both because we want her to be well rounded, but the teachers must work to ensure that she is supported in all her classes, not just the ones she is particularly good at (FC).

Charlotte's parents, in this instance, focused very little on the learning that Charlotte was doing outside of the classroom, and they made no reference to her home life or how she might learn in social contexts beyond the school setting. Again, this could be due to the location of the interview at a private tutoring centre. What was clear, in this sense, was that Charlotte's parents were very aware of the cultural setting in Hong Kong and what was valued for children within this setting.

4.4.4 Ioana

In Ioana's drawing, she drew a picture of herself holding a science beaker. The single figure used a mixture of crayons and pencil, and she drew herself smiling and appearing happy in a brightly coloured dress. When asked to describe her learning, she said:

I think I learn well when I am doing things, like science experiments. Today we did a science experiment, and I got to be the helper, and I was so happy (Ioana).

When I asked her why she was happy, she suggested:

[I am happy] because I get to be the helper and do stuff…I can see everything close up… I think it is better when I can do the helping (Ioana).

While Ioana was very focused on her performance and involvement with the teacher in his setting, she was also very interested in task orientation, and to some extent, competition (i.e. being the centre of the teacher's attention). In doing so, she is indicating that a classroom environment where she gets considerable support from the teacher is valuable.

Similar views were expressed by Ioana's mother, but with some hesitation. She indicated:

Because Ioana is so focused on getting everything perfect, she can sometimes become overly focused on her own needs. She is very good at mathematics and so….

If another student does better than her, or if the teacher chooses another student when Ioana wants to be chosen, she can get very frustrated. She needs involvement from the teacher (MI).

Ioana's father added to this conversation, indicating that while Ioana was very good in school, her ability to handle emotional relationships may not be at the same level as her peers, making it difficult for Ioana to work coherently with her classmates. He indicated:

We have always supported Ioana in her abilities, but largely these abilities relate to academic or creative endeavours. She likes mathematics, reading, and music, and we have always encouraged these passions… but Ioana is very happy to be by herself, like introverted, and so even if other children are playing or working together, like on a puzzle, she might not interact with them, but will instead sit and read or do her own thing. She can interact with others, but she may choose not to (FI).

From this comment, it is apparent that Ioana's father feels that familial support is important for learning development when it comes to academics, but he made no mention of familial support in relation to emotional development as if this was a secondary aspect that needed to be considered. His choice to focus on her giftedness in areas of mathematics, reading, and music indicates that he feels learning development should be focused on specifically in relation to areas of giftedness.

4.4.5 Noah

In Noah's drawings, he depicted his school in the mountains, but he described a school with many underground levels that had different rooms, all of which has special things to do. Each room was designed, according to Noah, to allow people to do certain things that they liked the best. On the uppermost level, was the teacher and one student, and that student was talking with the teacher about school. In the subsequent levels, there were children doing science, playing with technology, and doing art. He also included some fish, because the children in the school would like to see nice things and take care of the animals. They could go in the submarine to view the fish up close. In Noah's picture, he focused on order and organisation, there were different subjects that existed on every floor,

and students were 'required' to do the activity designated to the specific floor. When he described his drawing, Noah commented:

> *Everyone can choose what they want to do, and they can go with their friends, or they can go by themselves. There should be instructions for them to do, and if they want some help, then they can ask the teacher, but maybe they can just do it themselves and be happy* (Noah).

From this statement, we can gather that Noah is pointing to self-directed learning, in a way where the children are able to maintain a level of autonomy over their own learning. They must attend school, and so, therefore, there is some teacher control and rule clarity, but there is also a level of trust between teachers and students because, for Noah, if the students work independently, they are not monitored by the teacher.

Noah's parents were less clear on what they felt the best learning methods for Noah were. They had already pointed to the fact that the teacher should be responsible for enhancing Noah's development because he was at school for more time than he was at home. They also suggested that Noah might like group work, and collaboration, over working as an individual, meaning that he could benefit from the ideas of others. In addition to what they had already noted, Noah's mother also mentioned:

> *[Noah] is good at many things, but we are not experts on learning. We can try to promote Noah to excel in the things that he is gifted at, but we cannot dictate to the teacher what is best for his learning development. Only the teacher can know this because they know about teaching. We must be supportive of Noah and encourage him to listen carefully to the teacher* (MN).

This type of deference to the teacher indicates that Noah's parents are willing to take a learning position when it comes to determining the best possible methods for Noah's learning development.

4.4.6 Liam

Like Noah, Liam also drew a picture of his school with multiple different components. For Liam, he focused on both the inside and the outside of the classroom. On

the exterior, Liam drew a playground with several play structures and a multitude of basketball nets for sports. This sporty theme continued inside where he drew a slide to get from one class to another. For the majority of Liam's interior drawings, there were practical spaces that depicted situations in real life, for example, he drew classrooms where teachers were teaching, and students were sitting at tables. He also drew lavatories for both male and female students, and a library. Most of the children appeared on the top two floors, and in the busiest class was a science teacher and several students who were listening carefully.

When asked how, if he was part of his school drawing, Liam liked to learn best, he commented:

> *I want to be in all the classes because I like to do all the things, especially to go outside and play sports. I like science class, so I can be with my friends. Other classes can be boring sometimes…and, that is why there are no children in those classes. When I don't want to do something, I can take a break and relax* (Liam).

It is not surprising that Liam put himself in the class with the other children, as it has already been acknowledged that Liam wants to be the star in the class and that he always wants to win. What is more evident in this drawing is that Liam is able to suggest that he learns best when other children are involved and that he knows that he cannot be the best at everything. His suggestion about taking a break when he does not want to do something suggests that Liam is focused on being diversely talented.

Liam's parents suggested that Liam's learning development was best supported by teachers who paid attention to Liam and for whom Liam had trust and respect. They acknowledged that Liam generally likes classes where he likes the teacher, and they added:

> *Liam definitely likes to win. He likes to win at school things and at sports, sometimes even if others might be upset* (FL).

Such a statement indicates that Liam's father is prioritising academic and athletic components over others, such as emotional ones when considering Liam's learning development.

4.4.7 Overall Themes

In reviewing the themes that correspond to the best possible methods for learning development, there are four main components that have been identified. These include teacher support, student interaction, student affiliation, and the structure of the classroom environment. While no two children documented exactly similar structures for their own learning, they all pointed to activities where they were engaged with the material in some capacity, which suggests a preference for active learning over passive learning.

From a parental perspective, active learning also played a major role in the strategies parents identified for learning development. Parents were less likely to comment on emotional development and certainly considered social interactions as secondary to academic ones. Parents also did not suggest a significant influence on the impact of the home. While learning development in the home was briefly discussed in the interview settings, parents tended to prioritise what their children were doing when in school or at the tutoring centre. As a result, there was not a significant amount of discussion surrounding family structure, lifestyle, values, or goals in relation to anything other than the academic setting.

4.5 Chapter Summary

This chapter sought to address three research questions on giftedness. The first research question examined the construction of giftedness and the relationship between the learning environment and the accommodation of students' learning needs. In examining this, the main findings suggested that students were able, to some extent, to link their learning environment to needs. The children were able to identify ways in which they learned best and to indicate suggestions on how certain learning environments would promote this.

The second research question focused on the link between the learning environment and the development of giftedness. From these findings, it was documented that the children had very different interpretations of what it meant to be gifted and that there was no real consensus among the children as to what giftedness could include. This made it challenging for them to be able to explain an environment that promoted their giftedness. Parents were much more focused on linking giftedness to academic ability, which is

something the children did not always focus on. As a result, when attempting to link giftedness to strategies, the children highlighted technology as the main element that could promote learning. Children also focused on the niceness of the teacher and whether working individually or in groups might best promote giftedness. Parents generally echoed these findings, though they did often suggest that they worked at home with their children in some capacity to enhance their child's talents.

The third research question examined the best possible practices for learning development. From reviewing the drawings provided by the children, as well as their statements and the statements of their parents, it was evident that the school setting was an important focus, either as a structure (e.g. Eunice, Noah and Liam) or in relation to the activities (Jordan, Charlotte, and Ioana). Parents tended to support their children's statements, by also claiming that school was the priority for learning development. Parents commented on the structure of the classroom environment, on interpersonal relationships with other children, on task orientation and on teacher support, all of this suggests that the scope of the learning environment necessary for learning development is expansive.

5. Discussion

5.1 Overview

The premise for this research was that gifted children might not be getting the support they need for success in the classroom. It was acknowledged that a diverse range of learning styles exist in every classroom (Lusk, 2018) and that within that classroom, there will be both motivated and unmotivated students who must be considered and assisted. Teachers must juggle these types of students, while also considering that gifted students may become bored or disruptive if asked to conform to the standard curriculum (Lusk, 2018). Because the needs of gifted students had not largely been addressed in the literature prior to this study (Subotnik et al., 2011), the findings presented from the interviews with these gifted children and their parents provided a useful contribution to research, particularly in the Hong Kong context.

Initially, it was identified that "*the conflict between [excellence and equity] often lies in the reality that excellence becomes a long-term goal, while equity, because of its immediate crisis character, is more often a short-term goal*" (Gallagher 2012, p.461). Allowing for equity may present their own challenges for gifted children because they are not an educational priority (Sampson, 2013). Special programming is often not covered in the curriculum, and so teachers must spend their own time creating activities that can best support gifted children while ensuring that unmotivated or struggling students are also getting the attention required. This can become problematic in the mainstream classroom and is one of the reasons why parents of gifted children often seek out tutoring centres, like the one attended by the children in this study. Attending the tutoring centre allowed each child to obtain a separate focus where they could pursue their interests and be challenged in a way that was conducive to the promotion of learning and development. This links well to the literature, as Joel (2019) suggests that a supportive learning environment and adaptable school culture is essential for gifted children. This is not to suggest that it is unimportant for non-gifted children, as rationally, a supportive learning environment makes sense for all children, but the types of supports offered to gifted children may differ from the cases of other students (Wong, 2002).

While there were many findings that were consistent between the literature and the outcomes from this study, which are described in this chapter, the literature also tended to point towards behavioural challenges associated with gifted children. There was a considerable amount of research that pointed to behavioural and emotional problems (e.g. Joel, 2019; Gubbins, Callahan, and Renzulli, 2014), suggesting that classwork directed at the median student mean that gifted children may act out of frustration at the lack of challenge (Samardzija and Peterson, 2015). The literature also suggested that due to a lack of challenge in a regular classroom, gifted students may have a higher risk to become hyperactive (Cooper, 2012) and that gifted students may also become quickly involved in a disagreement with adults and peers (Händel, Vialle, and Ziegler, 2013). In terms of this study, and the interviews with children and parents, no indication of hyperactivity, frustration, or conflict were identified that were consistent with the accounts and descriptions presented in the literature. Each child was happy to participate in the interview, happy to speak freely about their experiences, and indicated no frustration, anger, or hyperactivity. Contrastively, other than Jordan, who was quite outgoing but not behaviourally disruptive, the other children all behaved in a calm and focused way that related to a more mature demonstration of emotion than I was initially expected.

In assessing the discrepancy between the literature and practice, it is recognised that these were children and parents who were very disciplined, as the children were attending a tutoring centre and were asked to work hard, and to remain focused, despite their young age. The families were, arguably, of a higher socioeconomic status, as they were able to afford this type of tutoring and support for their children. Furthermore, the interview setting was new for the children and different from what they might have experienced in the classroom, which could be a justification for their calm behaviour. Considering any combination of these reasons is also possible or other external variables, but it is important to recognise the difference between what is documented in the literature and what was experienced in practice.

While there was a deviation from the literature in this sense, there were also multiple instances of consistency. This chapter examines the needs and learning environment of the children in this study, determined through the findings, and compares it

to the literature that was presented in Chapter 2: Literature Review. Each section targets one of the three research questions posed for this study.

5.2 Identifying their needs: the self-assessment of children

Before asking the children to define how their learning environment accommodated their learning needs, all the participants in the study were asked to consider what those learning needs were (see Table 6). Section 2.4 of this thesis identified learning needs of being comprised of two elements: social and emotional needs, and academic and intellectual needs (Blaas, 2014). While the children focused primarily on their academic needs, they also pointed to elements of social and emotional requirements that have previously appeared in the literature.

Blaas (2014) identifies a range of challenges associated with social and emotional needs including being at risk of both internalising and externalising problems, such as low self-esteem, irritability, anxiety, depression, anger, frustration, and failure-avoidance behaviour. Some of these were prominently identified among the children. For example, Eunice's comment, "My father likes it when I do things perfectly" (Eunice), or Ioana suggesting that she liked to "get things correct". In looking at perfection, there was only one student, Jordan, who suggested that perfection was not as important. Jordan's comment, "it is okay if I am not perfect every time, but I should try hard" (Jordan), suggests that he may be more socially confident than any of the others, at least in this area, which is not necessarily similar to the literature, which suggests that gifted children tend to lean towards perfectionism over social confidence (Parker, 1997). The discrepancy could be due to the fact that significant amounts of research link giftedness to IQ, and for Jordan, his giftedness is linked to performance, which has a paucity of research connecting social confidence and giftedness. Similarly examining the social needs of these children, it was clear that frustration and anger were components worthy of discussion among these children. Ioana, Charlotte, and, surprisingly, Jordan identified anger as a component where they tended to struggle. Ioana's parents indicated that Ioana "can become very frustrated when she does not get it right on the first try… but the activity is difficult" (MI), suggesting that the parents are keenly aware that some of the children have social challenges in the classroom that are somewhat overt.

While Blaas (2014) points to the social and emotional problems with being perfectionist, not all researchers tend to view perfectionism as problematic. According to Christopher and Shewmaker (2010), perfectionism has a range of constructs that can have both positive and negative aspects of school-aged youth. In fact, perfectionism, according to these authors, cannot be viewed as a single entity, but rather appears on a larger continuum, ranging from average levels of perfectionism to neurotic. Those at an average level of perfectionism would be described as those who experience a sense of pleasure as a result of a painstaking effort, and who persevere, and who have satisfaction when looking at the results or outcomes. Those perfectionists who align closer with the neurosis end of the continuum fail to experience this satisfaction but are caught feeling 'never good enough.' This is the level of perfectionism that can lead to specific social issues. Among the children in my study, there were no suggestions that they felt a sense of despair. Each child came to the interview willing to share their opinions, without feeling a sense of shame or insecurity. While some children spoke more than others (e.g. Jordan), the quieter students did not demonstrate anxiety or insecurity, either in their speech or body language. This suggests that the literature on perfectionism and the corresponding issues that can be associated with giftedness, may not necessarily be particularly problematic for the children in this study. Instead, while they may be classified as gifted, they likely do not present neuroticism in relation to their perfectionism.

In addition to their social needs, the literature identified academic and intellectual needs as components to consider when discussing gifted children. Findings from the literature suggest that despite certain children being classified as gifted, there will be varying levels of developmental and cognitive abilities (Leikin et al., 2014; Samardzija and Peterson, 2015). In addition to seeing different developmental and cognitive abilities among these children, there were factors relating to age that likely also contributed to the children's interpretation of giftedness. Younger children, such as Jordan and Charlotte (both age 5), did not particularly understand the concept of giftedness, and so, therefore, it was difficult for them to identify their learning needs within this context. It is acknowledged that the five-year-old children had only one year of schooling, whereas the seven-year-olds had three. Expectations in the school setting in Hong Kong may be slightly different from other

parts of the world. Hong Kong is divided between the Confucianism practices of China, which value collectivism, and the individualistic construct of culture that is more valued in the UK and other parts of the Western world. As a result, children are encouraged to both support others in their environment, but also to excel individually, especially in areas of academics.

Because of this notion of individualism, children become aware of individualised attention, specifically in academics. In my study, Eunice commented:

> *My teacher is nice to me, and she gives me some things to do and tells me that I do a good job and I like that. If I did not work very hard, then the teacher would not be nice to me and let me do special things* (Eunice)

This suggests that she is very aware of the value of the personal attention of the teacher. In a similar way, Ioana drew a picture of herself in science class, where she got to be a special helper and work at the front of the class. This suggests that she was also benefitting from individual attention. It is unclear whether the attention provided by the teacher is linked directly to the giftedness of the students, or whether this is simply an example of a teacher attempting to be inclusive and engaging in the classroom. In order to examine this in a well-rounded way, future research may want to consider observing various classes, interviewing teachers, or some combination of both, to gain a clearer pedagogical image of the situation.

When focusing on the wider academic needs, Chan (2001) suggests that gifted students found that discussing controversial and difficult topics is more enjoyable than learning easy material. Samardija and Peterson (2015) suggest that the design of the instructional method in a regular classroom is more favourable to the needs of most students. Therefore, gifted students may feel unchallenged and annoyed. In terms of my study, this was equated to boredom among the children. All children indicated a 'yes' response to the statement, "Sometimes I get bored in the classroom, especially when the work I do is too easy". There were several instances where the children indicated that they were bored in the classroom; specifically, Liam suggested,

> *I think that sometimes the teachers give us too easy of work like we are babies, but I think they have to give this work, and sometimes they just talk to us, and that is boring* (Liam).

Liam was able to further clarify this with his drawing, where on some levels, there were no children present. He stated:

> *Other classes can be boring sometimes…and, that is why there are no children in those classes* (Liam).

And Charlotte exemplified this perspective when she suggested:

> *Games are better than when we just have to do normal work because then I get bored sometimes* (Charlotte).

Here, while there seems to be some understanding by the children that certain activities are boring, and that they are likely boring because they are easy, there is no indication that the activities were appropriate for other students in the class. It is possible that the other students in the class also felt that these activities were boring, regardless of their level of giftedness.

In a longitudinal study by Gross (2006), he suggests that young children who are identified as gifted benefit significantly from grade advancement and radical acceleration but clarifies that this academic advancement must closely be monitored to ensure that children have the social and emotional maturity which allows them to have success. Pairing intellectual and social needs together becomes challenging for both parents and teachers, as children who are academically gifted may struggle with social or emotional development, as highlighted in other studies (e.g. Blaas, 2014). The children in this study had not been advanced in their grades, but they were participating in supplemental instruction via the tutoring centre, indicating that while they were not receiving radical advancement, the children were getting targeted academic support that aligned with their academic needs.

While the children generally were able to comment on their social and academic needs, in order to address the research question, it was necessary to determine whether the learning environment assisted in developing such learning needs. Learning

environments, within the context of the literature, included both the classroom setting and the home. In the current study, the emphasis by both children and parents was to focus on the classroom environment, with the home setting mentioned only briefly.

The home setting was one where the children did do learning, but they did not necessarily explain this as a learning space. Being as these children are so young, learning at home linked to both academic and social skills. In the literature, four main areas have been commonly investigated, including:

(a) Relationship and communication (Knafo and Plomin, 2006),

(b) Family lifestyle, values, goals (Reichenberg and Landau, 2009),

(c) Family structure, e.g. birth order and number and gender of siblings in the household (Steelman et al., 2002), and

(d) Socioeconomic status (Nisbett et al., 2012; Eccles and Roeser, 2012; McLoyd, 1998; Ramey and Ramey, 2012)

In examining these elements in relation to the comments made by the children and the parents, it is clear that the children were respectful of their parents and that they seemed to generally be willing to undertake the tasks that they were given. Comments that the children provided included:

Our mother makes us do homework every night when we get home from school. It is really boring, but then when I get to school, I can already know the answer (Eunice)

My father makes me do math homework with him. Sometimes we make it into a game, but usually, I have to do some math every night (Noah).

In this way, a connection to academic learning beyond the classroom is drawn, and a family lifestyle where learning is extended into the home space emerges. Other than these sparse mentions of home life, an investigation into the home lives of the children, according to the parents, revealed that all the children in this study were only-children with the exception of siblings Jordan and Eunice. It was noted that for Eunice, the interpretation of her giftedness was not noted until she was slightly older because the parents were new

parents and did not really understand what giftedness truly meant. Contrastively, with Jordan, the giftedness was noted earlier, as a result of the parents' past experience, and so learning needs were modified earlier for Jordan than they were for Eunice. Finally, it is evident that all families are at a higher socioeconomic status, all falling at least within a middle-class hierarchy simply in their ability to afford the tutoring centre tuition fees. In this way, while the parents may not be completely integrating aspects of extended learning in the home, the capacities of the tutoring centre fill some of this perceived gap through its extended classes and curriculum.

In summary, despite their young age, the children in this study were able to self-assess their needs and indicate academic needs in the classroom setting that are best supported. This is generally consistent with the findings that are presented in the literature, despite the fact that the learning needs in the home setting were not fully addressed.

5.2.1 Linking Needs to the Classroom

The literature suggests that the classroom setting can be divided into subcategories, including the physical component, comprising tangible objects (e.g. furniture, lightings, boards, books, computers, etc.) and the human component (e.g. teachers and students). These settings can overlap at times (e.g. seating arrangements) but comprise an important part of the learning space.

In terms of the physical learning space, children identified several components of this space that were conducive to their learning. In some cases, such as with Charlotte, the physical space was particularly important to foster her own learning. Aligned clearly with the literature, Gagné recognised that the environment (physical, cultural, social and familial) serves as the catalysts in the talent development process (refer to figure 2: the DMGT model) and plays a significant role in shaping the talent development process (Gagné, 2005). Gagné recently reviewed the DMGT model in 2013 and highlighted that "*environmental effects are themselves influenced by genetic influences*" (Gagné, 2013, p.12). Particularly, it means one domain in the DMGT model, the gifted individuals' natural abilities (G) and one catalyst, the gifted individuals' intrapersonal characteristic (I) will influence how the sub-component, individuals (EI) (including parents, family, peers, teachers and mentors) in the

environmental catalyst (E) shape the talent development through interaction (Gagné, 2013). Though this review highlighted the interaction between the gifted individuals and the environment, the discussion focuses only in biological underpinnings. In terms of physical environment, Gagné only emphasizes how the environment (EM) cause influence in talent development (Gagné, 2013). It implies that gifted individuals are passively affected by the environment. However, from the finding in this study, the gifted individuals also take part in making sense to their learning environment on the subject of how elements of the classroom would work best for their own talent development. Charlotte explicitly commented on the reading corner, suggesting that the comfortable chairs and closed-off setting made the learning experience better. Charlotte was not the only one to comment on the tangible; in their drawings, Eunice, Noah and Liam all drew the physical school and how elements of the classroom would work best for their own personal learning. These children tended to focus on dividing up their designs into sections, which focused on areas of interest. There were also comments by children on the use of technology; things such as iPads and computer projectors were required for the children to play games and watch videos. While they identified these things as important, it means children are able to identify physical elements of the space that meet their learning needs. More importantly, they are the subject to define what and how the environment (E) can be or cannot be a catalyst. This tends to align with the interpretation offered by Malik and Rizvi (2018) when they identify how physical space is an important part of the learning environment. Despite of the fact that the physical environment is provided by adult, children are the person who identify what components are conducive to their leaning.

The DMGT model provides a framework of identification and intervention for the gifted individual. It also suggests the significance of the learning environment in talent development. However, the model overlooks the fact that the learners' views are also critical in deciding how the learning environment work best for them.

When turning to the human component, the children had already identified that specialised attention from the teachers was particularly important. Yet it was also important to consider how they interacted with other students. This was generally discussed with the children in relation to group work. In this case, contrastive opinions on group work were

presented. From Liam's perspective, group work was problematic sometimes because the other children did not necessarily want to work with him, a thought echoed by Charlotte. In other instances, such as with Eunice, group work was simply a natural part of the learning process. There was also a difference in the types of groups that were created, with the children tending to prefer groups that they personally created over teacher-created groups. This is consistent with the literature. Peer influence and grouping are also presented as one of the catalysts in Gagné's model to facilitate talent development (Gagné, 2005). However, it is criticised that the grouping that recommended by Gagné is not entirely achievable in a school context (Cathcart, 2018). Jaques (2000) comments that group work can be difficult to implement in practice because children who work with their friends are likely to choose peers of similar academic ability (assuming they know their peers), which means that groups can become unequal, potentially putting some students at a disadvantage. Contrastively, teacher-created groups, may not produce the same type of dialogue that would emerge from groups in which the students designed themselves. The children in my study all had different perceptions of group work and how it fits into the larger context, however, without explicit information from the teachers about how these groups were designed, it is difficult to produce an objective interpretation of whether these groups accommodated students' learning needs.

Moving into the drawings created by the students, there were many students who drew what they felt was a positive learning environment, representing this through the creation of their own school. In doing this, the children highlighted aspects of autonomy and self-directed learning, which the literature would suggest links well with the independence and specifically tailored learning that allows gifted students to grow and develop their own personal sense of learning (Thomson, 2010). As a result, children tended to draw elements within their pictures that they were good at or that they enjoyed. These elements ranged from very basic design, such as the inclusion of food (Eunice) or more comprehensive aspects such as sporting activities or classrooms with desks for more than one student (Noah and Liam). The detailed nature of the drawings themselves demonstrates high levels of creativity, which is consistent with that element of the Three Ring Model outlined by Renzulli (1978) in the literature. Renzulli (1978) was able to explain that "*Giftedness consists*

of an interaction among three basic clusters of human traits – these clusters being (1) above-average general abilities, (2) high level of task commitment, and (3) high levels of creativity" (p.261), which in this case clearly aligns with the drawings that the students developed. The detailed nature and intricacy in some of the drawings are consistent with high-level task commitment, as the children were very focused on finishing the drawings, regardless of whether the interview had ended or not. Yet, the model is not an exact fit for these children, as Renzulli (1978) indicates that there are two types of giftedness: "schoolhouse giftedness" and "creative-productive giftedness." The children were largely focusing on schoolhouse giftedness and did not tend to emphasise the creative, other than through demonstration in their drawings.

Of all the children, the only one that deviated from drawing the school setting was Charlotte, as she branched out into the social and emotional components of her life. Her interpretation of her drawing, and of school, was that it was important that she feels loved and protected, whether she was in school or in the home setting. She felt it was important to have friends and to make sure that those friends knew that they were part of her friend group. When looking at the social and emotional aspects of giftedness, the literature suggests that Charlotte's extension of the school environment beyond the physical structure shows high levels of creativity and the use of different clusters of human traits (i.e. emotion), which are consistent with the descriptions offered by Renzulli (1978). As a result, while the drawings that were completed by the children offer a range of outcomes, there is evidence that the children were able to describe their learning needs and link this to the classroom setting in a way that is consistent with ways in which this is explained in the literature. This consistency is important, as it may suggest that future studies on this demographic of children could be widened to incorporate a larger sample size of participants, further contributing to the trustworthiness of the data.

5.3 An interpretation of giftedness

Each child participant was asked to consider the question "What do you think it means if I tell you that you are gifted?" While their responses were diverse, they are consistent with the diversity of interpretations that exist in the literature. According to Gagné's (2008) Differentiating Model of Giftedness (see Figure 2), giftedness comprises

natural abilities, environmental abilities, intrapersonal activities and competencies. In using this model as a foundation, the children described intellectual, social and creative abilities, as well as natural physical abilities in Jordan's example of being able to run 'super fast'. The children were also able to identify having an above-average ability at something, for example, when Ioana indicates that she is a good student and does not have to work hard for success. The creativity explanation offered by both Noah and Liam also fits Renzulli's (1978) three-ring model, both suggesting that they had the above-average ability at being creative, which constitutes giftedness.

Renzulli (2005) suggests in the literature that children who are able to display creative-productive giftedness have an excellent ability to produce knowledge, whereas those who demonstrate a 'schoolhouse giftedness' are excellent consumers of knowledge. From the examples that the children provided, it is evident that the children manifest giftedness in different ways. As Renzulli (2005) defines giftedness as aligning with intelligence, creativity or reminiscence, the children were all able, in some capacity, to link their own abilities to this framework, demonstrating consistency between what exists in the literature and the findings of this study.

However, children in this study provided a few differences worth pointing out. The definition of giftedness from children's view is neither merely 'schoolhouse' or 'creative-productive'. Finding in this study reflected that the gifted individuals are able to perform well when encouragement and guidance were provided clearly. Their gifted traits are more an attitude than abilities. Aligned with Sternberg (2020), "*giftedness becomes an attitude toward life – that success is following directions in exchange for rewards*" (p.234), the gifted individuals in this study are more likely driven by the external rewards, such as teachers' attention and a sense of accomplishment, than their inner ability to producing or consuming knowledge. Therefore, the perspectives of the persons who accommodate or nurture children talent are critical, as their perspectives direct their interaction with the gifted children and their decision of the provision of their children's talent development.

From the parental perspective in this study, the focus was almost entirely on academic or intellectual ability, except for ML who commented that giftedness could also

link to creative endeavours or athletic abilities. This outcome tends to deviate from the concepts that exist in the literature. Renzulli (2005) suggests that those who are recognised as 'truly gifted' individuals are those that are the creative and productive people of the world, not those who score well on academic tests (p.256). While this deviation exists, the literature certainly does suggest that in some cases, intellectual ability is particularly important (e.g. Sternberg, 2005). The parents, from this interview, have taken steps to ensure that their children are expanding their talent. Fong, Yuen and Roeper (2014) suggest that this notion of having a special 'gift' of intelligence is only valuable if it is applied in a way that will bring natural harmony to the world. Therefore, while parents may not have verbally expressed more expansive definitions of giftedness, their actions of putting their children into programs that focus on addressing the natural 'gift' tend to suggest that they understand deeper meanings of giftedness than simply being academically superior to peers.

Nevertheless, tension between the interpretation of "schoolhouse" and "creative-productive" giftedness was appeared in children's perception and experience. Children's perceptions of giftedness were affected by their parents' view even what they were experiencing is different. Although not all the children were identified as having intellectual giftedness or schoolhouse giftedness in their primary classification (i.e. some children were classified as gifted in performance), this differentiation never arose when talking to the children or their parents. The children were very focused on how they were doing academically. Even when the children focused on the creative-productive aspect of giftedness, such as creativity, social ability, or athletic ability, they brought it back to the school setting (see Table 7: Findings from Understanding Giftedness). In these findings, Noah and Liam identified creativity as components of giftedness, but these were linked back to art projects that they were undertaking in class. Charlotte linked the social ability to friendships that she had established in school, and Jordan linked the athletic ability to recess and physical education classes. What was evident from these findings is that while some of the literature suggests that looking only at intelligence is a flawed method of interpreting giftedness (Spearman 1904), there is still an ideological understanding of giftedness, especially among these case study individuals, to associate giftedness with intelligence and

academic performance. Although, it was noted that early models of giftedness focused largely on intelligence, specifically IQ (Colangelo and Davis, 2003; Gross, Macleod, Drummond and Merrick, 2005), the underlying ideology which led to the overemphasis on schoolhouse giftedness is contextual. Hong Kong is touted as exemplary for high academic achievement. Dai (2021) identified that values such as credentialism, achievement through conformity and a preference for institutionalised pathway to success can impede the advancement of creative-productive giftedness. In this context, giftedness was associated with 'being smart' or 'academically outstanding', which was not so different from the concepts that the children were identifying.

Giftedness, in relation to intellectual abilities, was something that was highlighted in the literature review for this thesis. It was noted that early models of giftedness focused largely on intelligence, specifically IQ (Colangelo and Davis, 2003; Gross, Macleod, Drummond and Merrick, 2005). In this way, giftedness was associated with 'being smart', which was not so different from the concepts that the children were identifying. While not all the children were identified as having intellectual giftedness in their primary classification (i.e. some children were classified as gifted in performance), this differentiation never arose when talking to the children or their parents. The children were very focused on how they were doing academically. Even when the children focused on other aspects of giftedness, such as creativity, social ability, or athletic ability, they brought it back to the school setting (see Table 7: Findings from Understanding Giftedness). In these findings, Noah and Liam identified creativity as components of giftedness, but these were linked back to art projects that they were undertaking in class. Charlotte linked the social ability to friendships that she had established in school, and Jordan linked the athletic ability to recess and physical education classes. What was evident from these findings is that while some of the literature suggests that looking only at intelligence is a flawed method of interpreting giftedness (Spearman 1904), there is still an ideological understanding of giftedness, especially among these case study individuals, to associate giftedness with intelligence.

One element that can be gleaned from the changes to the interpretations of giftedness is the seven factors of intelligence that were established through the Thurstone (1941) model. These included: (1) Verbal comprehension, (2) Verbal fluency, (3) Number, (4)

Perceptual speed, (5) Inductive reasoning, (6) Spatial visualisation, and (7) Memory. In examining these as individual entities, it is relatively easy to see that both the parents and the children focused on some of these specifically, rather than an overall interpretation of intelligence. When participants documented instances of being good at math or reading, they were essentially highlighting aspects of fluency, comprehension, and number awareness, which fall within this model. The only parent who went beyond intelligence in her conversation about giftedness was Liam's mother when she indicated:

> *I might define giftedness as being good at something, but that something could be demonstrated through any number of different ways. There are children who are particularly gifted at music and others who are excellent at sports….so I think that while most of the time we think that giftedness is being smart, I am not convinced that it always has to be* (ML).

Yet while Liam's mother acknowledges that giftedness can comprise a variety of factors, when she refers back to her own child, she focuses solely on intelligence, claiming:

> *We knew that Liam was gifted from the time he was around 18 months old. He started to talk very early on and was forming complete phrases very quickly. When I would take him to a mother and baby group, the other mothers would always comment on how advanced he was for his age* (ML).

In terms of the connections with the literature, it is evident that preconceived notions of giftedness that have existed throughout history, which specifically link giftedness to intelligence and academic performance, are prevalent among these participants. It is possible that this is a wider perspective across Hong Kong specifically.

5.3.1 The link to giftedness in Hong Kong

Hong Kong has continually fostered gifted education since the beginning of the 1990s (Chan 2000). In doing so, and even in acknowledging that giftedness spans beyond intellectual abilities, Hong Kong has tended to focus on IQ tests as the predominant measure for giftedness. This is not so different from other nations, which have taken a similar approach, implementing standardised testing focusing heavily on an intellectual or

academic focus. Yet, for Hong Kong, the mix of culture and the value of being gifted have put it in a unique position.

Hong Kong is located within Asia, so in some stereotypical ways, it tends to align itself with certain beliefs. Asian parents are stereotypically seen as very focused on the education of their children, specifically mothers (Juang, Kim and Park, 2013). Asian children, as a result, are stereotyped as very focused on academics, good at math, and are good at playing instruments or other tasks that require a significant among of discipline. Having a child that can demonstrate these stereotypical traits can bring honour to the family when considering the Confucianism perspective to family dynamics. On the other hand, Hong Kong, being part of the British colonies for so long, gave it a unique position where Western influences infiltrated its borders. As a result, Hong Kong gained access to Western schooling practices and, in particular, access to standardised testing for intelligence, such as the HK-WISC: Hong Kong Wechsler Intelligence Scale for children (Chan, 2010).

All of the parents within this study were very happy to speak to me about their children. They were respectful but proud of their children's abilities. They all commented on the children's strengths, claiming:

> *I remember working with [Ioana] when she was three, and she was already able to do simple division and multiplication* (FI).
>
> *[Eunice] could read very early on and the doctor suggested that she was surpassing the typical intellectual benchmarks for her age group* (FJE)
>
> *[Liam] started to talk very early on and was forming complete phrases very quickly* (ML).

None of the parents chose to focus on elements that were problematic for their children, other than certain social challenges that would not necessarily constitute a problematic situation. This is generally consistent with the research, which indicates that parents may not be entirely truthful in disclosing their own children's weaknesses (Tveit, 2009). It is further noted, that while all these children were identified as gifted, they were tested through parent nomination, something that is common in the Hong Kong setting (see

Section 2.2.4). As a result, the Hong Kong Education Department was able to make a determination that these children could be classified as gifted, and strategies could be implemented to ensure that these children were meeting their full potential.

5.4 Linking the interpretation of giftedness to the learning environment

The literature identifies the learning environment as the pedagogical, social and psychological setting in which learning occurs. The learning environment also has an impact on students' motivational, cognitive, emotional, and behavioural outcomes (Lüdtke et al. 2009; Joel, 2019). Therefore, all elements require consideration when attempting to link giftedness to the learning environment.

From a psychological perspective, many of the children did not entirely understand their own giftedness, some could identify what they were good at, but they did not necessarily identify this as a special element within the larger framework of their learning when Jordan suggested that he was "Super fast and strong! I can run faster than my sister and faster than my friends" (Jordan), it was evident that he was not fully comprehending or caring about other elements, in which he was classified as gifted. From a psychological perspective, children who are consistently told that they are 'good at' or 'talented at' something or who receive reinforced praise from parents and teachers have a tendency to have more confidence when completing that skill (Greene et al. 2006). Under this theory, Jordan's inability to understand his own giftedness becomes problematic within the learning environment because he is showing a lack of awareness. On the other hand, Jordan's young age may be the justification for his lack of knowledge. While Jordan may be correct in identifying being 'super fast', he was also an excellent reader and demonstrated superior problem solving and investigative skills that allowed him to excel in science, but also to see the bigger picture in many of the tasks he was undertaking (e.g. football).

Some of the other children were more aware of their giftedness in a particular area. With Eunice, she was able to identify the differences among people, specifically depicted in her drawing of the school zoo. She was able to identify that she could interact with a variety of different teachers and take a range of lessons that piqued her interest, as she comments:

I like the zoo, and I like school. When we go to the zoo, I can see all different animals, but in the school, I can see all different teachers, and I can have mathematics class, or science, or music, or art, and I like that (Eunice).

In this way, it is unclear whether the learning environment is meeting the psychological needs of gifted children. This could be a factor because of their young age, or other variables that have yet to be considered. Despite this, the psychological learning environment goes beyond what the children think of themselves and comprises the feelings of school belongingness and positive student-teacher relationships (Corpus et al. 2009). In all of the situations, the children indicated positive relationships with their teachers. They were able to identify teachers that they had the best relationships with, and oftentimes, this corresponded with their areas of respective giftedness. In making this connection, it is possible that while the children may not have had an overt understanding of their own giftedness, they had an implicit understanding of areas where they tended to excel. This is demonstrated through comments made by the children such as:

My teacher is nice to me, and she gives me some things to do and tells me that I do a good job and I like that (Eunice).

Not everybody gets to use the pen, but the teacher always lets me use it if I'm done my work early (Ioana).

From these comments, it appears as if the psychological component, as identified in the literature, is being met for these students.

From a social component, much of the focus for this study was on group work and working with peers in a social setting. The children were all able to identify situations that they were working with other children in the classroom through group work or various other classroom activities. As a result, there were clear indications that the social element of the learning environment was helping to motivate students to learn, but there was less of an association with giftedness, specifically. Eunice, Jordan, Noah and Liam all commented that they liked classroom activities where they got to work in a group. For Eunice, her parents indicated that she had many friends, and she felt that the group work was "not such a problem" (Eunice). Jordan's appreciation of group work was when he got to work with his

friends in groups, rather than teacher-created groups. This social element of friendship was echoed by Charlotte and Noah, both of whom indicated that working with friends was preferable. This notion of friendship extended beyond the classroom to other elements (e.g. eating lunch) where Eunice commented that she continued to interact with her friends, consistently, outside the classroom.

As it is acknowledged that social support is a key component of the learning environment, it is evident that in this case, the children are well supported to foster social relationships both inside the classroom and within the wider school setting. Parents did not necessarily comment about how these friendships extended beyond the school setting, but the parents were aware that their children had friends and generally experienced a positive class climate. According to Gregory and Weinstein (2004), learners can be motivated to collaborate and to follow classroom instruction and to become socially accountable by peer support. While this thesis did not fully investigate the social accountability in the classroom, further research might consider this as a possibility, looking specifically at students' actions, in association with peers, and conformity to social accountability in the early years setting.

Finally, in terms of the pedagogy associated with giftedness, it has already been mentioned that gifted students tend to excel when they are challenged, and so pedagogical strategies might include elements of learning that promote independence and growth among these gifted children. Using Gagné's Differentiating Model of Giftedness and Talent (2008) (see Figure 2), provisions for the environmental aspects of learning would promote enrichment, the pacing of pedagogy, grouping and acceleration. In terms of the comments made by both the children and their parents, examples of pedagogical strategies implemented in the classroom align with what is presented in the literature. For example, Ioana made a comment:

> *I liked the math class. I like my math teacher because she just gives us what we need to do, and then we can do it, and if we have a problem, then we can just ask* (Ioana).

In this case, Ioana is suggesting a certain level of autonomy, which is a pedagogical strategy used by the teacher. In this situation, Ioana is encouraged to work through the problem herself and to ask the teacher if difficulties arise. For Ioana to complete this lesson,

she required clear direction from the teacher, and, it is assumed that the mathematics problems that the class were completing were scaffolded in such a way that made them achievable. This assumption is possible because Ioana indicates a 'like' for this type of instruction. If she expressed frustration, it is possible that the material was too difficult or was not part of her usual curriculum or did not build on previous concepts.

Other pedagogical strategies were apparent in the classroom, specifically in relation to game-based learning. In Charlotte's comment:

> *The games are fun, and I think I can learn in the games. Sometimes I am the best at the games, and I can win, or sometimes my team wins* (Charlotte)

Game-based learning is a pedagogical used throughout education. The premise behind it is that students will learn better if they are actively involved with the material that they are learning. Game-based learning implements activities in the classroom that are intrinsically game-like and ultimately promotes engagement and motivation for learning (Plass, Homer, and Kinzer, 2015). Therefore, in this example by Charlotte, it is clear that there are links to previous literature, and especially to Gagné's (2008) model of giftedness and talent.

Such comments by the children were also echoed by the parents, suggesting that the link, for them, between giftedness and the learning environment also required clear pedagogical strategies. When Liam's father noted:

> *Liam tends to do better in the classes where he likes the teacher. He becomes more engaged. When we ask him about what he did at school, he always picks out the more interesting activities to tell us about, like a science experiment, or a game he played* (FL)

He is indicating that engagement and motivation are key elements to Liam's success and that this is achieved through interesting activities, like game-based learning or interactive processes, that encourage Liam to engage with the material.

5.4.1 Overall Interpretation

The findings from this study suggested that the learning environment is a complex entity and one that is difficult to describe from both the perspective of the children and of their parents. None of the parents was trained as teachers, and so there was no indication that the parents had any real idea about sound pedagogical strategies that might be successful; rather, these parents were able to comment on what they hypothesised an effective learning environment might entail. The children were largely too young to comment on anything other than the elements of the learning environment that they enjoyed, specifically engagement, interaction, autonomy and involvement. Despite these somewhat rudimentary responses, it was possible to make links to the findings from previous research. It was evident that elements of Gagné's (2008) model were still relevant, specifically linking to natural abilities, the environmental, and the intrapersonal. Definitions of giftedness were identified in relation to Thurston's (1941) elements for which he categorised giftedness.

Perhaps the main difference was the interpretation of giftedness in the research versus the interpretation by the parents. While Renzulli (2005) acknowledged that giftedness extended beyond intelligence into other elements (e.g. creativity), the parents still largely linked intelligence and giftedness together. Justification for this was provided by an understanding of the overall culture in Hong Kong, though this deviation between literature and practice is an important distinction for the findings of this study.

Therefore, research question two has been addressed in these findings, suggesting that there is a link between the learning environment and giftedness, especially in relation to aspects that concern intelligence. Considerably less focus is directed towards other elements of talent or giftedness even though they may be acknowledged by parents or children.

5.5 The Desirable Methods for Learning Development

From the literature review, the scope of the learning environment was informed by literature assessing the classroom climate, namely the Classroom Cooperative Environment Measure (CCEM), which can help educators to evaluate how the classroom contribute to the

social environment systematically, and how those contributions enhance the learning outcomes of students (Premo et al., 2017). Using this as a foundation, four categories of the learning environment were identified, including the structure of the classroom environment, interpersonal relationships, goal orientation, and teacher supports (See Table 1). While the literature acknowledged a fairly expansive list of subcategories, not all were mentioned or acknowledged by children or their parents. As a result, Table 9: Coding for the scope of the learning environment was documented in the findings, narrowing down what was presented in the literature into elements that were mentioned by participants. It is important that these elements are further examined, with respect to the literature, to document how each piece fits into the bigger picture and contributes to an understanding of the best possible methods for learning development among gifted children, thus addressing research question three.

5.5.1 Structure of the classroom environment

The order and organisation in the classroom were mentioned by all children except Jordan, as well as the parents of Jordan/Eunice, of Noah, and of Liam. In this definition, order and organisation were largely understood to be a disciplined and/or regimented strategy to classroom construction, and it largely related to the physical elements of the classroom because other coding categories encapsulated the order dictated by the teacher (e.g. teacher control). For many of the children, order and organisation meant the division of classes or spaces, and thus, the creation of boundaries. In their drawings, Eunice, Noah, and Liam all documented physical space dividing up the classes into different rooms but also having space for other elements, whether that is for food, for sports, or for something more creative (e.g. space for an aquarium). Liam commented:

> *I want to be in all the classes because I like to do all the things, especially to go outside and play sports…other classes can be boring sometimes* (Liam).

Liam's comments suggest that he is focused on the fixed nature of the classroom, and students' willingness to engage with areas of interest. This is echoed by Noah's comments:

Everyone can choose what they want to do, and they can go with their friends, or they can go by themselves (Noah).

In this way, we can see many of these children highlighting the order and organisation of the classroom. In linking this to giftedness, Beld et al. (2017) highlighted that the classroom experiences are instrumental for gifted children and that a positive classroom climate where children can feel comfortable is particularly necessary.

The second area of focus noted in the classroom environment is rule clarity. This pertains to the way in which rules are constructed to meet the needs of students. Classrooms with little rule clarity can be challenging for gifted children because they may often feel the need to achieve perfection (Rogers, 2002). Rule clarity lends itself to a situation where children are likely to succeed. In this category, Eunice, Charlotte, Noah and Liam all highlighted rule clarity to some extent as well as MJE and MN. Of all the children, Eunice seemed to be one of the most focused on rules. She indicated that if asked to work in groups or individually, she would comply, despite any personal preference. Her mother suggested:

Eunice is better at staying focused on a task over Jordan, but she is older, and so this is expected. She is very good at paying attention in class, and the teachers often tell us that she is very good at staying focused on a particular task (MJE).

With Noah and Liam, there was some overlap between what they indicated for order and organisation and how they explained rule clarity. For them, teachers had certain roles within the school, and therefore, some taught 'boring' subjects while others were more creative, and this was simply understood by the children as to how school was organised. The children generally acknowledged that they followed the rules and instructions provided by the teachers, regardless of their level of interest; therefore, links to cultural expectations of children in Hong Kong, which would align with this framework are logical (Chan, 2005).

The third element examined within this category was teacher control; this was something that was highlighted much more frequently by the parents than the children (i.e. only by Ioana). Ioana pointed to teacher control as being linked to the special attention that she might get in class, such as being the teacher's helper. From the perspective of

giftedness, special attention is a critical element in the success of learning, as documented in the literature (Chan, 2005). For the parents, teacher control was somewhat of a balance. There needed to be enough order and control by the teacher that the students remained on task and focused, but a generation of interest also needed to be fostered. The children, being so young, needed to learn the rules but also to 'like' their teacher. This element tended to blur with other subcategories, such as trust and respect, as it was difficult to differentiate. If a child did not have respect for the teacher, it was unlikely that teacher control would exist. Charlotte's father summarised this element best when he stated:

> *…the teachers must work to ensure that she is supported in all her classes, not just the ones she is particularly good at* (FC).

The last area of focus targeted innovation. This became difficult to code, as all the children commented on the inclusion of technology in lessons, which would have constituted innovation in previous literature. Yet in the current time period, technology in the classroom is not necessarily an innovative practice (i.e. technology use does not always mean innovation). As a result, I chose not to include technology as a part of this coding process, unless children specifically indicated an innovative activity within the learning environment. As a result, only comments made by Jordan, Eunice, and Noah were linked to innovation, and these did not have to do with technology but were more greatly associated with children being given the opportunity to make a choice about what they wanted to learn about.

5.5.2 Interpersonal Relationships

While there were numerous possible coding categories for interpersonal relationships, the children, and their parents did not focus greatly on these components in their discussions. Therefore, from the original list, only four of the sub-categories were identified in the findings from this research. These included involvement, friendship, working with classmates, and the willingness to help classmates. Consistent with the Special Education Classroom Climate Inventory (SECCI), as defined by Premo et al. (2017), student interaction and student affiliation are important components in the learning environment and can promote positive learning among all children. In terms of linking this specifically to

giftedness, there were some challenges in making this connection, as the parents could not comment on interpersonal relationships in the classroom because they simply got second-hand information from their children. Furthermore, the parents did not entirely discuss how these types of relationships affected learning at home, so this is an area that requires further investigation, perhaps through the observation of classroom lessons.

In terms of involvement, this was defined as ways in which the children engaged and interacted within the classroom setting. For Eunice and Charlotte, these elements were more overt, as both children suggested that they enjoyed being the focus of the teacher's attention in various classes. They liked it when they were given special or extra work to do if they had finished their work in advance of others. For Charlotte, involvement was directly linked to happiness; she consistently focused on the feelings of others making sure that "nobody feels sad" (Charlotte) and that "everyone can be happy" (Charlotte). Charlotte's definition of giftedness, in that: "*I can love lots of people in my family like my mother and father. I also love my teachers, and it is easy for me to be able to love"* (Charlotte) suggests that she is extending relationship-building beyond the framework of the school setting into her home setting. Charlotte's understanding of involvement links well to the Munich Dynamic Ability-Achievement Model (MDAAM) according to Perleth (2001) where aspects of social competence are highlighted. This links to both preschool and school-age children, indicating that it is an important stage of talent development.

In addition to involvement, several of the children also commented on friendship with a direct link to the learning environment. Jordan was the most obvious and overt with his comments suggesting:

> *If I want to learn well in the class, then I should go outside because when it is sunny, then I can play outside with my friends….if I am bored in the class, and we go outside, then I feel better when have to come back inside…but sometimes I am sad to come inside…but I can focus better on my work after I go outside. I think it is important to not just have school but also to have fun because we are kids.* (Jordan).

In linking this to the literature, it is important to consider what, exactly, Jordan is highlighting; he is suggesting that there is a clear link between different elements in his life,

including his friendships. He is suggesting that the building of knowledge, as described in the MDAAM, was directly linked to social and motoric competence. The framework in the literature makes explicit connections between knowledge and social competence, which connects Jordan's statements to what is found in the literature.

These comments lead to other subcategories found within interpersonal relationships and the connection to the learning environment, specifically working with others or the willingness to help. It was somewhat difficult for the students to link this to the actual learning environment, though all students except for Ioana were able to draw some connection. The children were not entirely able to discern the difference between working with classmates and a willingness to help. For Jordan, Noah, and Liam, working with classmates, working with classmates generally turned the learning environment into a competitive one, and therefore there was a greater willingness to help other classmates because it would mean that the group, as a whole, would 'win'. This somewhat indirectly links back to the need for perfection, as described by Blaas (2014), and somewhat links to other structures within the scope of the learning environment (e.g. Task Orientation) (see Table 1). In terms of gender, the boys tended to prefer group work more than the girls, which then made them more willing to work with and to help others.

5.5.3 Goal Orientation

The literature identified two facets of goal orientation, task orientation and competition, both of which appeared prominently in the children's description of the learning methods that they enjoyed. In terms of task orientation, Jordan, Eunice, and Liam were most focused on these elements. Task orientation was largely understood to mean the ability to stay on task to meet a certain goal. With Jordan and Liam, these tasks largely related to games and the construction of activities by teachers to achieve a certain outcome. Jordan's interpretation of task orientation was more abstract. He was able to directly link his mental well-being to his academic achievement, suggesting that going outside was particularly important to his learning. For Jordan, this became a cycle; children who were problematic or had behavioural issues may have to stay inside during play periods, but children who behaved and did their work could play outside. Jordan then

suggested that because he liked to play outside, he always did his work. He then linked that back to learning by suggesting:

> *If I want to learn well in the class, then I should go outside because when it is sunny, then I can play outside with my friends…. if I am bored in the class, and we go outside, then I feel better when have to come back inside* (Jordan).

This differed from both Liam and Eunice. For Eunice, the rules-bound nature of her personality allowed her to stay on task effectively and to maintain her own focus. For Liam, task orientation related to working within the boundaries of a certain classroom in order to learn the material in that class (e.g. science is only learned in science class and cannot be learned anywhere else). His focus on completing each of his lessons demonstrated similar outcomes to findings suggested in the literature (Premo et al., 2017).

In terms of competition, this has been highlighted as an important element of learning for gifted children because it stimulates them to engage with the material and to work towards goals rather than to become complacent if the tasks become too easy (Daniels and Piechowski, 2009). This desire for the competition was most prevalent among the male students, for example, in the comment:

> *Liam definitely likes to win. He likes to win at school things and at sports, sometimes even if others might be upset* (FL).

While the literature tends to focus heavily on competition between students, there seems to be a lack of investigation into cooperative learning, especially in relation to task orientation. Students may be asked to work in groups, but not all games and tasks require such intense competition. Instead, cooperative learning would allow students to engage in the social atmosphere of learning without having to 'win' against their peers. While this was not investigated in this study, opportunities exist for future studies to investigate such a phenomenon.

5.5.4 Teacher Support

The final area of investigation when examining the scope of the learning environment was teacher support. In the findings, there were three sub-categories that

were identified, including teacher responsiveness to the needs of the student, respect, and trust. In the first instance, teacher responsiveness was difficult to measure because of the perspectives of only the children and the parents. However, for the children, the indication was that they liked the additional attention when they had completed the assigned work. Ioana, in particular, liked that she was able to be the helper in science class and that she was given important jobs to do. For the parents, the expectation was that the children would be well supported in their classes, though how this support might manifest itself in the classes was explained less clearly. This is not necessarily surprising as the parents are not educators and may not be cognisant of the ways in which teacher support is demonstrated. In the literature, teacher support is generally linked to the building of domain-related general competencies (Heller, Perleth and Lim, 2005), and focuses on individual abilities, which was a focus identified by many of the parents, thus indicating a link between the findings of this study and previous studies.

In addition to this element, trust and respect were also mentioned by Charlotte, Noah and Liam. For Charlotte, as previously explained, this took on a social focus, whereas for Noah and Liam, there was a need to ensure that a focus was directed to the teacher to support a mutually beneficial relationship. Unfortunately, these links were less obvious than demonstrated in the literature, and more research is needed to tease out the children's interpretations of how trust and respect exist within the greater learning context. While this differs slightly from other research studies that discuss trust and respect, the lack of data does not pose a problem, but rather an opportunity for future development.

5.6 Chapter Summary

Based on the findings as described in the previous chapter and the literature documented in Chapter two, there is a clear indication that connections can be drawn between what has previously been documented and several of the outcomes from this study. First, it is acknowledged that the behavioural and emotional issues that were evident in the literature were not found among these children, creating a significant deviation in outcomes between the literature and this study. Despite this, it is acknowledged that the actual classroom was not observed, and it is possible that the issues not found in the interviews were actually present, in some capacity in practice. Furthermore, these children

were carefully selected from a tutoring centre, suggesting that their needs as a result of their giftedness were being met, thus removing behavioural issues from the equation.

Assuming then, that these children were in a position where their learning needs were being met by their learning environment, it is important to consider why this was occurring. It was found that the children did not entirely understand what it meant to be 'gifted' but that they could largely equate it to things that they were good at. For the children, the range of 'good' activities largely included academic activities, whereas, for parents, this outcome was universal. This aligned with the literature, indicating that people generally still tend to equate giftedness to IQ, despite research to the contrary. Giftedness was also solely related to the school setting, with only a few minor mentions of the home environment, despite its importance in the learning process, and despite the fact that these children had spent many years in the home setting before transitioning to the school context.

Yet the children now spend a considerable amount of time at school, which the literature suggests is approximately 7000 hours per year (Fraser, 2012). This is significant and constitutes a large portion of the children's lives; therefore, classroom climate becomes very important (Walberg, 1974; Fraser, 1991). While the literature has suggested this importance as instrumental, there were differences between what the children felt was a supportive learning environment and what existed in practice. The children, and their parents, did not highlight all aspects of a supportive environment, as described in the literature, which may not be surprising given the brevity of the interview period or the young age of the participants. Regardless of an exact match between the literature and the findings, there are many consistencies. Therefore, a better understanding of the themes that support a positive learning environment has been established.

In summary, this study has demonstrated clear links between previous knowledge and these new findings, indicating a useful contribution to knowledge, especially within the context of Hong Kong.

6. Conclusion

6.1 Key Findings

Thirty years ago, the Hong Kong Education Commission (HEC, 1990) defined gifted students as those with exceptional achievement and/or potential in one or more of these areas: (1) General intellectual ability; (2) specific academic aptitude; (3) creative or productive thinking; (4) leadership ability; (5) visual and performing arts; and (6) psychomotor ability. This research has demonstrated that since that time, attempts to define giftedness within the specific context of Hong Kong has been problematic. This definitional gap was attributed to the lack of formal and regimented mechanisms, via which public education systems can assess the abilities that are purported to illustrate giftedness. What has become evident via this research, is that formulating such a definition has been made the purview of teachers, parents, educational psychologists, and occupational therapists to think about the divergent ways in which different children interact in the classroom context, as a strategy for testing these children for giftedness traits. This study has argued that these dynamics have culminated in a system that is unable to identify all gifted children although those identified receive access to additional support systems to foster educational growth. This research established that these support systems are varied, and not mandatory. They nevertheless serve as a first step in refining Hong Kong's policy on giftedness and talent.

This research project derived data from six children and their parents, via a case study approach designed to address the research questions of this study. Interviews were conducted, separately, with children and then their parents to determine whether children could provide a construction of giftedness and to consider what forms of educational support best addresses their needs. While this qualitative research project has considered theories and models that have attempted to define giftedness, it has focused on filling a gap in the existing literature, which pertains to the lack of young children's perspectives on giftedness, what it means to be gifted, and what teachers and educators can do from children's perspective, to provide a learning environment that is conducive to advancement.

The analysis of the literature revealed that the term giftedness is concomitant with a fluid definition that has changed over time within different contexts. The literature review initially focused on Renzulli's (1978) three-ring model which suggests that there are two types of giftedness: 'schoolhouse giftedness' associated with learning and intellect, and 'creative-productive giftedness', which comprises other forms of giftedness that transcends intellect (e.g. performance, arts, and visual giftedness). This served as the basis upon which the findings of this research were contextualized. This research project focused on Gagné's Differentiating model of giftedness and talent (2008) and the Munich Dynamic Ability Achievement Model (MDAAM). Within these models, there were numerous stages and components that comprised giftedness, all of which aligned with Renzulli's (1978) three-ring model via the focus on above-average ability, creativity, and task commitment.

This enabled a nuanced focus on the Hong Kong context by leveraging aspects of these models to be realised in practice. Importantly, this study found that there is a significant lack of research that pertains to giftedness in Hong Kong in relation to young children. This research gap was identified as a function of the lack of formal structures in Hong Kong, that can serve as an impetus for identifying and supporting these children. What emerged from the literature, however, was Hong Kong's federal definition of giftedness which prioritises the following areas: general intellectual ability, specific academic abilities, creative or productive thinking, leadership ability, visual and performing arts, and psychomotor ability (Hong Kong Education Commission, 1990; Hong Kong Board of Education, 1996).

This chapter delineates in detail, how the research questions of this study have been respectively addressed. The key findings from these questions, the role of the researcher, avenues for future research, and the study's overall contribution to knowledge as well as the implications for policy, theory and research are also discussed.

6.1.1 Research Question 1

The first research question that this study sought to address is: how do young gifted students construct the concept of giftedness and explain the relationship between their learning environment and the accommodation of their learning needs? This question

entailed two components: the first part focused on how giftedness is constructed while the second part was designed to study the linkages between what gifted children need and the environment that they learn in. In discussing the research findings, each of these components are discussed separately.

This study found that parents and children primarily defined giftedness as relating to academic or intellectual ability, though the children were much more open in their definitions, as they also highlighted creativity (Noah, Liam), social ability (Charlotte), and athletic ability (Jordan). The interesting point in this finding was that the children were better able to define giftedness as it related to the literature than their parents, who almost universally defined giftedness as academic ability or intellect (the exception was ML). Interestingly, many of the parents had children who were defined as gifted in ways other than academic or intellectual ability (i.e. verbal, performance, arts). Consequently, there is the argument to be made that parents lack the ability to provide a definition of giftedness that transcends the overemphasis of IQ as a benchmark for giftedness. This research finding evokes questions about whether such interpretations of giftedness are culturally derived, whereby cultural norms have influenced a skewed emphasis on academic and intellectual ability, or whether there was some other justification for the parents reacting this way.

When linking learning needs to the learning environment, once again, this study established that children were more diverse in their responses to what they might need. Parents tended to focus on the role of the teacher, emphasising the teacher-student relationship. In this way, parents were directly identifying engagement. Yet the children offered a much more expansive perspective, indicating not only what they liked but what they thought was useful for their own learning. Many children suggested that elements such as technology would make the environment more conducive to learning. Additionally, the children were able to point to aspects where learning existed outside of the classroom (e.g. in the home setting when they were doing homework). While not all the themes within this section were universally recognized across all six children, the research question that was designed asked whether students were able to create links between the learning environment and learning needs which this study affirmed. The children were, in fact, very vocal in expressing what they thought they needed.

6.1.2 Research Question 2

This study proposed a second research question: 'to what extent, if any, do young gifted students, or their parents, view their learning environment as contributing to the development of their giftedness?' In posing this research question, I was invariably pre-empting the assumption children have an innate sense and understanding of their own giftedness and the concept of giftedness more generally. Starting from this flawed premise, I deemed it important to establish linkages between the learning environment and the development of giftedness. My findings did not support this assumption, as the children had some understanding of giftedness and could elicit responses, but did not really embrace the idea that they were any different from their peers. This made answering the question based on children's perspectives a difficult endeavour.

Drawing from the findings established in response to research question one, this study found evidence that children are able to identify their learning environment and can, to some extent, understand what giftedness is and how it relates to their own context. The children featured in this research were able to identify their learning environment, including the things that they liked and the things that they felt contributed to their learning. It was unclear however, as to whether this related to giftedness or simply to learning. As a result, and turning to the literature, the learning environment constituted the pedagogical, social and psychological place where the learning process occurs, and which impacts students' behavioural, emotional, cognitive and motivational outcomes (Lüdtke et al., 2009; Joel, 2019). It was noted that there was very little clarity as to whether the children were actually having their learning needs met.

The notion that children's needs may not have been met was not necessarily something that I considered prior to this research. I had made the assumption that these children, because they had been identified as gifted, and because they were attending alternative educational settings to focus on aspects of their giftedness, were having their learning needs met. This was a false assumption. As a result, it seems impossible to demonstrate that the children could make a connection between the learning environment and their development of giftedness without having these pieces of information. Therefore, while research question two was fully addressed in the findings and discussion of this thesis,

there is a need to ensure that more research is done in this area before it can be fully realized. What was evident, however, is that all the children seemed happy to learn and content to be forthcoming about their learning needs. It is also important to note that their learning needs went beyond the academic and also encompassed social dimensions, which demonstrates that they are thinking about learning development in a variety of different ways, not just in relation to the intellect. This also translates to the home setting, where children are learning outside of the school context, and again, were content to do so.

6.1.3 Research Question 3

Research question three: 'What do gifted students, or their parents, view as the best possible methods for positive learning development?', was coded to correspond to the categories and sub-categories that were initially defined under the Classroom Cooperative Environment Measure (CCEM), which Premo et al., (2017) suggested could help educators evaluate how the classroom contributes to the social environment systematically, thereby impacting students' learning outcomes. The categories identified in the literature, included (1) the structure of the classroom environment, (2) interpersonal relationships, (3) goal orientation, and (4) teacher support. There were many sub-categories defined in the literature, but not all of these ended up in the final study because they were not mentioned by participants.

This question, more than any other, used the drawings produced by the children to get a nuanced sense of how they were identifying what a positive method for learning development is. Via the observations of the researcher, the range of components drawn by the children were followed and it became apparent that they were able to explain these in detail during the interview. Because of the drawings that were produced, the children tended to focus on different things, thus not all children contributed to all four elements of the CCEM chart on the scope of the learning environment. Yet the goal of this project was not to obtain a consensus among the children, but rather to understand their perspectives. What they chose to focus on, when allowed complete freedom to discuss the topic, was inherently valuable, as the children identified elements that they felt were most important. In this way, the personalities of the children became much clearer because they were

excited to talk about an imagined world where they could have a learning environment that best suited them as individuals.

The children focused on elements that were previously defined in the literature. Jordan, for example, identified that being able to go outside and take breaks from his studies allowed him to learn better. This balance of work and play is crucial to understanding how children learn. Additionally, his sister Eunice identified a balance between classes, suggesting that changing teachers, classes, and topics frequently allowed her to learn best. This indicates that Eunice again requires balance and variety as important factors for her learning. Charlotte took on a much more social perspective, which also is not directly related to academics, but contributes to positive learning growth. For Charlotte, the social element was the ability to interact with her teachers and classmates. In focusing on personality, Charlotte was very sensitive in the way that she addressed others and even suggested that she was good at loving. The social interaction for her appeared to be instrumental. In this case, because Charlotte was not necessarily identified as having academic giftedness, but rather creative giftedness, this may suggest that her needs in the school setting might be different from gifted students demonstrating academic giftedness. In the discussion, this was described as being a future avenue for consideration, and the contrast between Charlotte and other children became more apparent as the interviews progressed.

While the children each had unique interpretations of the learning environment, there were some themes that emerged as particularly poignant, one of these was the classroom environment. Beld et al. (2017) postulate that a positive classroom setting is essential and particularly important for gifted children because these children may feel uncomfortable in a classroom context where not all students are gifted. Therefore, positivity and focus were identified as particular areas where positive learning development could occur.

In terms of learning development, the parents provided a much more diverse interpretation of what might be included in the classroom environment. This tended to vary depending on what they felt the needs of their child/children were. In the interpretation of

this, it was apparent that some of the parents felt that order and organization, through a regimented schedule and support by the teacher, offered the best opportunities for learning development (e.g. MJE, MN, MI). In this case, there were other variables that required consideration, as being within the tutoring centre, where classes were clearly structured and focused on particular areas of study could have skewed the results.

6.2 Implications for Future Research

As previously mentioned, this research study was not perfect in its design, as no research study can truly demonstrate this type of perfection. However, in reflecting on some of the weaknesses of this study, as well as some of the questions that the findings have elicited, there are some exciting options that could be pursued in the future.

First, Hong Kong is in a period of change. The uprisings that caused disruption during my study are unlikely to dissipate anytime soon, and many people in Hong Kong are pursuing other options for education, such as becoming British Overseas Nationals. It is difficult to predict how the changes that are happening in Hong Kong will affect educational policy, as the situation is constantly changing, however, this is something that is necessary to investigate and to discuss in future research studies.

The situation in Hong Kong also leads to discussions surrounding culture. One of the undertones of this research project was that gender and culture played a role in how parents saw their children, and to some extent, how children saw themselves. Parents noted elements such as quiet female children, whereas boisterous boys were seen as completely acceptable. The connection between gendered identity and culture overlaps, and in my project, I did not take enough time to delve into how culture played a role in the comments made by parents and children. Future research studies might consider elements such as collectivism, or patriarchy, within the Hong Kong context, but they may also choose to consider gendered norms and social identity. The extent to which gifted children are nurtured in relation to various stereotypes, bias, or other culturally sensitive components is important to consider because it leads to wider questions about how gifted children are supported within this context. If the support is based heavily on gender stereotypes, then there may be a lack of support for female children in science, technology, or sports, and

much greater support for performance and the arts, for example. Thus, future investigation is necessary.

One of the questions evoked from this research finding is the distinct interpretations of giftedness between children and parents. Distinction was reflected in this study that parents tended to define giftedness as relating to academic or intellectual ability (schoolhouse giftedness), though the children were much more open in their definitions in creative-productive giftedness (Renzulli, 2005). Future studies may also benefit by investigating whether such interpretations of giftedness are culturally derived, whereby cultural norms have influenced a skewed emphasis on academic and intellectual ability, or whether there was some other justification for the parents reacting this way.

Future research may also benefit by examining the perspectives of teachers of gifted children. As gifted children are often overlooked because there is a lack of formal structure to identify those who are gifted (or arguably a useful working definition of what constitutes a gifted child), examining the views of teachers who work with gifted children is inherently valuable. Teachers are often overlooked when the educational policy is created because decisions are made by administrators and bureaucrats; these people may not be the best suited to address the needs of gifted children. While the views of teachers have been investigated in research, because of the changing nature of Hong Kong and the educational system, additional investigation in this area seems worthwhile.

Research on gifted children could also be expanded. This study had a very small sample size and only looked at young children between the ages of 5-7. Interviews could be expanded to be longitudinal, looking at the development of children from very young to pre-pubescent (e.g. age 12). This would determine whether the support structure and nurturing environment were being met over a period of time. The research could also be expanded that focuses only on young children. My research project could not be classified as generalizable across Hong Kong because it only dealt with a small population, expanding this sample has the potential to uncover other aspects that link theory to practice that may have been overlooked in my study. In expanding the sample, future research may also want to consider quantitative elements, such as questionnaires, which could be distributed to

parents of gifted children to determine learning and environmental needs that could support future best practices. Quantitative researchers may also benefit by looking at the different types of giftedness (e.g. IQ, visual and performance) to determine the extent to which intellect/academic giftedness is prioritized over other forms of giftedness.

All of the above suggestions can help to shape the understanding of how giftedness functions in the Hong Kong context and can inform future educational policy to ensure that Hong Kong continues to work towards best practice within the context of education.

6.3 Overall Contribution to Knowledge

In order for a thesis, such as this one, to be accepted within the academic community, it needs to demonstrate that it has made a contribution to the wider field of knowledge, thus considering aspects that may not have previously been investigated in existing studies. The topic of giftedness offers some challenges in meeting these criteria because it has been studied so extensively. What is useful, however, is the way that research on giftedness has shifted over time to include theories and subsequent models that help to explain how nurturing and support can benefit young children who have been identified as gifted. For my project, these models have been useful, if not somewhat overwhelming. The definition of giftedness has been modified extensively over the last several decades and thus, arriving at a definition that is consistent with the literature, and that fits within the context of Hong Kong has been challenging. Yet, using the literature, I was able to arrive at this definition and to form conclusions based upon this outcome.

This project has also made a contribution to knowledge by investigating a unique context and perspective. There has been a paucity of research on giftedness in Hong Kong, and none of the research accurately reflects the situation that currently exists in the changing educational landscape. Furthermore, previous studies have largely investigated teachers, administrators, or parents of gifted children, but none have considered the perspectives of the children themselves. This new perspective is important, as it gives a sense of empowerment to children and allows them to be heard, rather than being told how to respond. This project has allowed children the opportunity to construct their own view of

giftedness, suggesting that children have an ability to understand how they might be different from their peers and to suggest ways in which their own learning environment can fit the needs that they feel need addressing.

While the contribution to knowledge is small, it is significant. I have offered academics in this field elements to consider when looking at perspective, value, and educational policy, which is beneficial to enhancing the experience of gifted children in unique learning environments.

6.4 Recommendations for Theory, Policy and Practice

One might argue that the children featured in this study are subject experts who through their subjective experiences, have an innate understanding of what their needs are to support their giftedness and learning. The insight they have provided must not be taken lightly and will play a crucial role in the design of targeted policies that seek to ensure that they receive adequate support in classrooms. In practice, the insights provided by the sample of children in this study, should inform teacher-student, as well as parent-student relationships. This is a salient point as this study has illustrated a disconnect between parent perceptions and children's perceptions of their needs in particular. The findings of this study can assist parents to have a more intuitive understanding of the support that their children require. Teachers and educationists can also leverage the findings of this research to influence their pedagogical approaches and curriculum designs, ensuring that these directly address their learning needs and empower children to take charge of their learning. The research findings can also be incorporated into theoretical frameworks that are skewed towards singular understandings of giftedness as tantamount to intellectual ability. It is recommended that future studies, possibly featuring a larger research sample, are conducted to provide empirical support that can expand the ideological foundations of such frameworks.

6.5 Role of the Researcher

It is imperative to address my role and experience as a researcher in relation to this study, as this invariably impacts on the research findings (Guillemin & Gillam, 2004; Finlay,

2002). A researcher's influence determines how research respondents are given a voice, the context within which the research findings are situated, and the manner in which the research findings are presented in addition to other aspects of the study (Collins & Cooper, 2014; Creswell & Poth, 2016; Fink, 2000; Orb et al., 2001; Slembrouck, 2015). Creswell et al. (1996) as well as Whaley & Krane (2011) have shown how a researcher's epistemological framework impacts the choice of research approach and design, and invariably, how a study is conducted.

In this section, I focus mainly on my experiences as well as my positioning as the researcher. As a novice researcher, interviewing can be particularly daunting. Prior to this study, I had worked extensively with children but in the case of this research and as I attempted to interview them, my positioning in relation to them changed. Suddenly, I was perceived as the subject matter expert and the voice of authority. Bearing in mind these changed power relations, it became important for me to ensure that the children were well taken care of and comfortable during the interview process. I consequently modified my interviewing practices in order to adapt to children who were hesitant to speak. It was imperative that I change my language to ensure that it was age-appropriate, enabling the children to understand and actively contribute to the conversation. I also learned how to effectively interview adults, as the parents in my study also perceived me as the expert, despite my own feelings and 'imposter syndrome'(Bothello and Roulet, 2019) I was experiencing alongside a sense of inadequacy, at least initially. Over the course of conducting the interviews, I however learned to be adaptable and to be a good listener, traits which I believe will help me in both future teaching and research opportunities.

The data collected from the interviews also allowed me to better understand the research process. Coming into this project, I was not expecting the data to be tidy, but I was ill-prepared for the extent of the messiness of the data. Qualitative studies produce vast amounts of data and narrowing it down and deciding what themes to present within the context of this thesis took more time than I had initially anticipated. It was nowhere near the relatively linear process I had anticipated and in actual fact, was iterative in nature. There were always questions in my mind as to whether what I was presenting was an accurate representation of the thoughts of the children and the extent to which my own bias was being inserted into the project. During this time, I had to trust my training and use my own intuition

to make decisions. The outcomes were not perfect, and going through the data made me realize that there were other questions I could have asked. While I initially felt frustrated about the pieces I may have overlooked, I can now see these pieces as opportunities for future research (see Section 5.3) and look forward to addressing these elements in larger and more inclusive research studies.

While the time management of the data analysis was something that I had initially overlooked, I was also unprepared to deal with disruptions that were beyond my control. Not only did I have to deal with the uprisings in Hong Kong, but the COVID-19 pandemic, which virtually halted all of my plans and deadlines, leaving me with feelings of uncertainty, confusion, worry, and frustration. Yet despite various setbacks, I still managed to complete the data collection process and conduct the research, largely, in the way that I had planned. The process of being in charge of a research project from beginning to end has allowed me to fully understand how I might proceed if I was to take on the role of a principal investigator without the direct oversight of a supervisor. More specifically, I would be comfortable submitting ethical protocols and undertaking qualitative research and would like to be able to expand this to include quantitative elements in the future.

In moving through this research project, I have demonstrated my expertise in this area, thus showing personal and professional growth, as I have become a subject matter expert in this area. Such a statement should not be taken lightly but should be a proud achievement for any researcher, and thus, I feel confident with the results I have achieved. Personal professional development is an important part of growth and learning, and it is something that should be valued, but also reflected upon throughout an academic career. In completing this research, I gained several valuable skills, which are crucial for education research, but also transferable across a wide range of contexts.

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Appendix A - Research information sheet and consent letter (parents)

Invitation to participate in a research project (Child and Parent)

邀請參加研究項目（兒童和父母）

Project Title: How young children construct the concept of giftedness?

研究名稱：幼兒如何建構資優的概念？

This project will be conducted by myself; Wai Ling TSANG. I am a doctorate candidate for an EdD programme at the University of Sheffield.

此項目將由本人曾慧菱進行，本人現正於英國謝菲爾德大學修讀教育博士。

I want to invite you and your child to take part in the research named above. For you to make an informed decision about whether you are willing to participate, this information sheet intends to provide you with relevant information about the purpose of my study. Please do not hesitate to contact me if you want more information.

本人誠意邀請您和您的孩子參加此研究。本文提供相關資料給予閣下及閣下的子女決定是否參與這項研究，如果您需要更多資料，歡迎與我聯繫。

Background information on the study:

The term 'giftedness' has existed in the research spanning multiple decades; as a fluid term, it used to be viewed as a preferred option, where those with a higher level of academic intellect were classified as gifted and given a higher position within society. As the years have passed, the understanding of giftedness has diversified to include individuals who demonstrate an above-average level of skill in a certain area, such as with performance, creativity, intellect, or artistic ability. As society has consistently attempted to identify these individuals, there have been some challenges as to how children, who are classified as gifted, should proceed through their education. Some have suggested separating gifted children into separate schools to focus and direct their learning to a higher level; others have indicated that a supportive and inclusive class within the mainstream education system is preferable. Ultimately, there has been no consensus as to what gifted children require to promote and enhance their learning. Despite an extensive literature on giftedness, and even on gifted children, most of the studies have considered how adults have made changes to the educational system or policies to support gifted children; a lack of studies have actually asked the children themselves about their interpretation of giftedness or of their learning needs in the classroom.

「資優」一詞在數十年的研究中已經存在。作為一個流動的術語，它過去曾被視為較優越，其中具有較高學識水平的人被列為有天賦並在社會中享有較高地位。隨著歲月的流逝，資優的理解已經多樣化，包括誰表現出高於個人- 在某方面技能的平均水平，例如能力表現，創意，智慧，或藝術能力。隨著社會不斷地嘗試識別這些人，在被分類為資優兒童應如何繼續其教育方面存在一些挑戰。一些人建議將資優的孩子分開到不同的學校裡，以集中和指導他們的學習；其他人則表示，在主流教育系統中最好選擇支持性和包容性的課程。最終，對於資優的孩子需要什麼來促進和增強他們的學習沒有達成共識。儘管在大量文獻中顯示如何更改教育系統或政

策支援資優兒童；實際上，文獻中缺乏詢問孩子們自己對資優的理解或他們的學習需求。

This study considers this gap in the research by interviewing young children (aged 5-7) and their parents about the nature of giftedness within the Hong Kong context. Hong Kong is currently within a period of transition, and so it is important that the children growing up in this time period have their voices heard.

這項研究就香港背景，對 5 歲至 7 歲的兒童及其父母進行訪談，從而彌補研究的空白。香港目前正處於過渡時期，因此，讓這段時期內成長的孩子們的聲音被聽到是重要的。

To achieve a fair representation of different ages and stages of schooling, I have decided to select the following participants: 為令參與的兒童能代表不同的年齡及學習組別，我決定選擇下列參與者：

- Two children (one boy and one girl) who are studying in kindergartens
  在幼兒園學習的兩個孩子（一個男孩和一個女孩）
- Two children (one boy and one girl) who are at primary one
  小學一年級的兩個孩子（一個男孩和一個女孩）
- Two children (one boy and one girl) who are at primary two
  小學二年級的兩個孩子（一個男孩和一個女孩）
- Parents of the above participants
  上述參加者的父母

As your child fits into the above category, I would like to invite both your child and yourself to be possible participants.

由於您的孩子屬於上述類別，因此我想邀請您和您的孩子成為此研究的參與者。

Please be reminded that you and your child are both free to withdraw at any stage of the project. After reading this information sheet, if you decide that you are happy to participate, you will need to sign the consent form. I will also need consent from your child. I have to provide your child with as much relevant information as possible for them to decide whether they wish to participate.

請注意，您和您的孩子在項目的任何階段都可以自由退出。閱讀完此文後，如果您確定自己願意參加，則需要簽署同意書。我也需要獲得您孩子的同意。 我必須為您的孩子提供盡可能多的相關信息，以便他們決定是否希望參加。

What will be expected of you and your child if you decide to take part?

如果您決定參加，對您和您的孩子會將期望甚麼？

I will be collecting my research data on the coming Saturdays. During these Saturdays, I will ask the participating parents to come into your child's weekend learning centre once (at a mutually convenient time), for me to conduct several short interviews. I would estimate that the interview should take about 45 mins each.

我將在接下來的星期六收集我的研究數據。在這個星期六，我將請參加活動的父母（在相互方便的時候）到您孩子的周末學習中心，以便我進行數次的簡短採訪。估計每次面試大約需要 45 分鐘。

The interview with your child will be using different activities, such as using drawing. In each interview session, I will ensure they feel comfortable to take part in the activities.

與孩子的訪談將使用不同的活動，例如繪畫。在每次面試中，我將確保他們感到很舒服地參加活動。

What might be the possible disadvantages of taking part in this project?

參加該項目可能有哪些不利之處？

Due to the nature of the study, I am not anticipating that this research will cause any potential physical harm. However, I am aware that talking about 'ability' can be a sensitive topic, so there may be likely for the children to feel uncomfortable. It is my responsibility to ease that uncomforting feeling. Children will be told that I am not the person who evaluates their abilities. The children will be told that I am a person who is very interested in understanding more about their thoughts about things like school and things children are good at and would like them to help. If any other unexpected/unforeseen discomforts are noted by yourself, please feel free to bring these to my immediate attention.

由於這項研究的性質，我並不預計這項研究會造成任何潛在的身體傷害。但是，我知道談論「能力」可以是一個敏感的話題，有可能會為孩子感到不舒服。減輕這種不適感是我的責任，參加者將被告知，我不是評價他/她的能力的人，也會告訴孩子們，我是一個非常有興趣了解更多關於他們對學校和孩子擅長的事物的想法的人，並希望他們能提供幫助。如果您發現其他任何意外/ 無法預見的不適，請隨時與我聯繫。

What if you are unhappy about something?

如果您對某事不滿意怎麼辦？

If at any time throughout the study, you or your child are unhappy about anything. Please feel free to speak to me or e-mail me via edp10wlt@sheffield.ac.uk, as soon as possible. If you feel I am unable to help you with your complaint, then please feel free to contact my supervisor at The University of Sheffield, Dr Sabine Little, who can be reached at the following e-mail address: s.little@sheffield.ac.uk.

如果在整個研究的任何時候，您或您的孩子對任何事情都不滿意。靖盡快與我交談或通過 edp10wlt @ sheffield.ac.uk 向我發送電子郵件。如果你覺得我無法幫助你或處理你的投訴，請隨時與本人在謝菲爾德大學的督導 Sabine Little 博士聯繫，您能透過電子郵件 s.little @sheffield.ac.uk 與她聯繫。

How will the data be used and protected?

資料將如何使用和保護？

The collected data will be analysed and published in my final thesis, which I hope to submit in 2020. As I am interested in studying 'giftedness', the finding from this study may also be used in my future research. You and your child are always welcome to obtain a copy of this study when my thesis is published. All the collected data will be kept strictly confidential. All the participants in this study will remain anonymous. The data in this study is saved on my personal computer and my google drive, which are all password locked. As I will audio record the interviews with both adults and children, please be reassured that all the recordings are only for me to transcribe the interviews. All the

recording files will be destroyed when the conversations are fully transcribed.

收集到的數據將在我的最終論文中進行分析和發表，我希望在 2020 年提交。由於我對研究「資優」此題材感興趣，因此這項研究的結果也可能會用於我的未來研究中。當我的論文發表時，歡迎您和您的孩子獲得本研究的副本。所有收集的數據將嚴格保密。本研究的所有參與者將保持匿名。這項研究中的數據保存在設有密碼鎖定的個人電腦和 Google Drive 中。由於我會在訪談中錄音，但所有錄音僅供我抄錄。談話全部抄錄後，所有錄音檔將被銷毀。

Who has ethically reviewed this study?

誰從道德上審查了這個研究？

The school of the education at the University of Sheffield in England has managed the ethics review procedure for this project. Any concerns regarding this review procedure can be addressed to my supervisor Dr Sabine Little: s.little@sheffield.ac.uk.

謝菲爾德大學教育系已就此研究進行倫理審查。如對有關此審核程序的任何疑問，請聯繫我的督導 Sabine Little 博士：s.little@sheffield.ac.uk。

Participant consent form (parents) 參加者同意書（父母）

Project Title: How young children construct the concept of giftedness?
研究名稱：幼兒如何建構資優的概念？

Name of Research: Wai Ling TSANG
研究員姓名：曾慧菱

	Please Initial the box 請在空格內簡簽
1. I confirm that I have read and understood the information sheet (included with this form) for the above study. 本人確認已經閱讀並理解了上述研究的資料（連同此同意書）。	
2. I confirm that the researcher has answered all my questions regarding the above study. 本人確認研究人員已經回答了我有關上述研究的所有問題。	
3. I understand that myself and my child's participation is voluntary, and we are free to withdraw at any time without any given reason. 本人了解自己和孩子的參與是自願的，我們可以在沒有任何特定原因的情況下隨時退出。	
4. I understand that my own and my child's responses will be anonymised before analysis. 本人了解在分析之前，我自己和孩子的資料都會被匿名化。	
5. I permit the researcher to share the anonymised responses with her supervisor and examiners and to publish in her thesis. 本人允許研究人員與她的督導和考官分享匿名資料，並發表在其論文中。	
6. I give my consent for both my child and I to take part in this study. 本人同意本人的孩子和本人參加這項研究。	
7. I understand that my child must also give his / her own consent. 本人了解還必須徵得本人的孩子的同意。	
8. I give my consent for myself and my child to be audio recorded. 本人同意我自己和本人的孩子被錄音。	

Name of participant 參加者姓名	Date 日期	Signature 簽名
Name of researcher 研究者姓名	Date 日期	Signature 簽名

Appendix B - Research information sheet and consent letter (children)

Dear xxx,

My name is Wai Ling. I am a student at the University of Sheffield. I am studying for a Doctoral Degree in Education. I want to invite you to help with my study.

This study is concerned with your understanding of 'giftedness'. Some people think being 'gifted' is being 'good at something'; some people do not think the same way. I am interested in how you think about it. Our conversation will be recorded, but those recordings will be destroyed after I finish writing my study. All the things you share with me will only be used in writing my homework, and I will not write your real name in my study too.

If you are interested in helping, you and I will have some chats at your weekend learning centre on some Saturdays. I will also have some chats with your parents to talk about this topic too. They may tell me something about how you learn at school and at home.

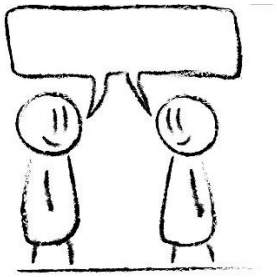
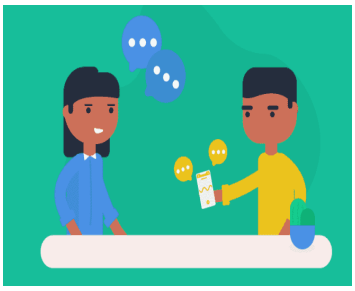
As I care about how you feel of participating in my study and your enjoyment is very important to me, would you please show me your willingness in the consent form. I am happy to answer your questions if you want to know more about my study and your participation. You can (1) call me or WhatsApp me by 9770xxxx, (2) ask your parents to contact me, or (3) talk to me in the centre.

You know what? I have my teacher teaching me how to do a good job too. If you have any concern about my study that you think I cannot answer you, you can ask your parents to send an email to my teacher too. Her name is Dr Sabine Little. Her email address is s.little@sheffield.ac.uk. She will be happy to help too. Or, you are always welcome to tell your parents or me that you don't want to participate. Regards,

Wai Ling TSANG

Participant consent form (children)

Please tell me how you feel by circling the picture.

		Yes	No
	I understand that I will talk to Wai Ling in my weekend learning centre.		
	I understand that our conversation will be recorded.		
	I understand that it is up to me to decide whether to participate in this study.		
	I understand that I can stop taking part in this study whenever I want.		

邀請參加研究項目（兒童）

親愛的 xxx：

我叫慧菱。我是謝菲爾德大學的學生，我正在攻讀教育博士學位。我想邀請您幫助我的學習。

這項研究與您對「資優」的理解有關。有些人認為「資優」就是“擅長某事”。有些人不這樣認為。我對您的想法感興趣，我們的談話會被記錄，但這些記錄會在我的論文寫完後被銷毀。您與我分享的所有東西都只會用於寫作業，我也不會在學習中寫您的真實姓名。

如果您想提供幫助，您和我將在某些星期六在您的周末學習中心進行一些聊天。我還將與您的父母聊天，談論這個話題。他們可能會告訴我一些有關您在學校和在家中學習的方式。

我在乎您對參加我的學習的感覺，以及您的享受對我非常重要，請您在同意書中向我表明您的意願。如果您想了解有關我的研究和參與的更多信息，我很樂意回答您的問題。您可以（1）通過 9770 xxxx 致電給我或 whatsapp 我，（2）請您的父母與我聯繫，或者（3）在中心與我交談。

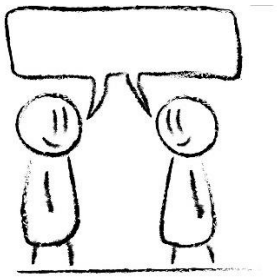
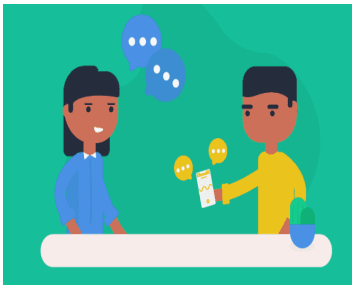
你知道嗎？我也有老師教我如何做好我的學習。如果您對我的學習有任何擔憂，認為我無法回答您，您也可以要求您的父母向我的老師發送電子郵件。她的名字叫 Sabine Little 博士。她的電子郵件地址是：s.little@sheffield.ac.uk。她也很樂意提供幫助。或者，隨時歡迎您告訴我或您的父母您不想參加。

曾慧菱

敬上

參加者同意書（兒童）

請圈出照片，告訴我您的感覺。

		明白	不明白
	我知道我將在我的周末學習中心與慧菱交談。		
	我了解我們的對話將被錄音下來。		
	我知道，應由我決定是否參加慧菱的學習。		
	我了解我可以隨時停止參加慧菱的學習。		

Appendix C – Ethical Approval Letter

The University Of Sheffield.

The School Of Education.

Wai Ling Tsang
EdD Early Childhood Education

Head of School
Professor Cathy Nutbrown

School of Education
388 Glossop Road
Sheffield
S10 2JA

Telephone: +44 (0)114 222 8096
Email: @sheffield.ac.uk

Dear Wai Ling

ETHICAL APPROVAL LETTER

How do young children construct the concept of "Giftedness"?

Thank you for submitting your ethics application. I am writing to confirm that your application has now been approved, and you can proceed with your research.

This letter is evidence that your application has been approved and should be included as an Appendix in your final submission.

Good luck with your research.

Yours sincerely

Professor Dan Goodley
Chair of the School of Education Ethics Review Panel

CC Dr Rachael Levy

Appendix D - Interview Questions

Semi-Structured Interview questions

Children

- What do you think it means if I tell you that you are gifted?

(provide definition to children)

- What was your favourite class this/last week? Why did you like this class specifically?
- What things in the class make the class good? Explain
- What do you find easy to do at school?
- What do you find hard to do at school?
- What activities do you do in the classroom that help you learn best?
- What things does the teacher do that are helpful for your learning?
- Do you like working in groups better, or do you like working by yourself?
- Do you do things outside of the classroom, like at home, where you work on your talents?

- What class did you not like this week? Why?
- Is there anybody or anything in the class that is a problem? Explain.

- What do you like to do at home?
- What do you find easy to do at home?
- What do you find hard to do at home?

(Ask children to respond to the following statements and explain)

Social & Emotional Needs

- I want to do something perfectly. If I get part of the task wrong, I feel bad.
- I think I am very sensitive.
- I have lots of friends
- Sometimes the other children do not want to play with me
- Sometimes the other children do not want to do classwork with me.
- I get angry if I cannot do something on the first try.
- If I do not think that I can do something well, I do not want to try it at all.

Academic & Intellectual Needs

- I think I am smart.
- I like it when the teacher gives us difficult work to do.
- I like it when we do classroom activities where I get to work in a group.
- I like it when we do classroom activities that involve technology

- I like it when the teacher gives me special work to do
- Sometimes I get bored in the classroom, especially when the work I do is too easy.
- I like it when the teacher lets us do creative things.

Parents

- Can you provide a definition of what it means to be gifted?
- How does this relate to your child?
- How was your child identified as gifted?

- What classes does your child like best?
- What classroom activities help them learn best?
- What things do the teachers do that might help your child to learn?
- What type of teacher support would best suit your child?
- Do you think your child prefers group work or individual work? Why?
- Are there any classes that your child does not like? Why?
- Are there any activities that your child does in school that they do not like? Explain.
- What type of things does your child do outside of school that might link to giftedness?
- What types of activities does your child do at home that link to their giftedness?
- Do you do anything with your child in the home that you think helps them to develop their talents?

- Do you think the structure of the classroom environment is important? If yes, what specifically do you think is the most important?

Appendix E – Eunice's Drawing

/*acookie: msthash=Administr

Appendix F – Charlotte's Drawing