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**Teaching and Learning in Piano Lessons for
Students with Down Syndrome in Macao:
Experiences and Perceptions**

Long, I-Ian

**A dissertation submitted to the University of Bristol
in accordance with the requirements for award of the degree of
Doctor of Education
in the Graduate School of Education**

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ABSTRACT

Over the years as a voluntary piano teacher at the Macao Down Syndrome Association, the most poignant story I heard from the parents there was their difficulties in finding piano teachers willing to teach their children with Down syndrome¹ (DS). One of the key factors behind this phenomenon is that most instrumental music teachers in Macao² lack the experience in teaching students with SEND. There also seems to be little literature related to teaching musical instruments to students with learning difficulties. To my knowledge, little has been researched into Macao's population with DS in relation to music pedagogy generally, and teaching the piano specifically. Thus, this study was motivated in recognition of this research gap. Furthermore, perspectives from existing research on DS tends to be dominated by the medical model of disability. Without discarding the medical model, this study includes perspectives from the social model of disability to consider how people with DS should be perceived in today's society.

The objective of the research was to explore the teachers', students' and parents' experiences and perceptions relating to piano teaching and learning for students with DS in Macao. It took the form of a qualitative study working within an interpretivist paradigm and adopted a collective case study methodological approach. Through a purposive sampling procedure, four triads of participants were selected to give four case studies, each involving a piano teacher, a student with DS, and one of the student's parents. Several piano pedagogies for teaching students with DS were introduced to the teachers in order for them to select one or more to work with when teaching their own student in this study. Qualitative data were collected from semi-structured interviews, field notes during observation of the piano lessons, and diaries written by the teacher and parent from each case study during a five-week research period. The data within each case study were examined, and the whole data set underwent a cross-case analysis using a thematic approach.

¹ 'Down syndrome' is also referred to as 'Down's syndrome'. While both terms are acceptable, 'Down syndrome' is predominantly used in this dissertation based on the ground that Down, whom the syndrome was named after, did not have nor own the syndrome, thus the inclusion of the possessive 's' is inappropriate (NDSS, 2019; Selikowitz, 2008). 'Down's syndrome' is used, however, in quoted references if this form of spelling is specified.

² 'Macao' is the original spelling; it is used in China and many English-speaking nations such as Australia and New Zealand, while 'Macau' is the official modern Portuguese spelling adopted in many European nations (Visit Macao, 2017). In this dissertation, the spelling of 'Macao' is used in general, unless it is specifically spelt as 'Macau' in the name of an establishment such as 'Macau Down Syndrome Association', or in quoted references.

DEDICATION AND ACKNOWLEDGEMENTS

It is impossible to acknowledge everyone who has helped me throughout my journey towards earning this Doctor of Education degree from the University of Bristol. Nevertheless, I will try my best to recognise and thank the wonderful people who have particularly supported me through the process of writing this dissertation. Without their encouragement, generous support, and sacrifice, to complete this dissertation would not have been possible to achieve.

First and foremost, I would like to thank my main supervisor, Dr Marina Gall, for her guidance. She was always helpful and encouraging, providing me with insightful and inspiring advice on every aspect of my dissertation. It was an honour for me to have been given the opportunity to learn from her professional attitude and dedication as a researcher, and her kind-hearted and caring attitude as a supervisor. Her guidance and encouragement were a source of strength through my research process.

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Finally, I would like to dedicate this piece of research to the people with Down syndrome. I hope that my effort would be able to stimulate better acknowledgement of this population by the society, and more support to be administered to their music education by the Macao Government.

AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's Regulations and Code of Practice for Research Degree Programmes and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

SIGNED:

DATE:

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LIST OF ACRONYMS AND ABBREVIATIONS

AAE	All American Entertainment Speakers Bureau
ABRSM	Associated Board of the Royal Schools of Music
ADAHK	Arts with the Disabled Association Hong Kong
ADHD	Attention Deficit Hyperactivity Disorder
BERA	British Educational Research Association
CIPL	Centre for Information Policy Leadership
CUHK	Chinese University of Hong Kong
DipABRSM	Diploma of the Associated Board of the Royal Schools of Music
DS	Down Syndrome
DSE	Down Syndrome Education International
DSI	Down Syndrome International
DSEJ	Direcção dos Serviços de Educação e Juventude (Macao's Education and Youth Affairs Bureau)
GDPR	General Data Protection Regulation
HKAPA	Hong Kong Academy for Performing Arts
ICM	Instituto Cultural do Governo da R.A.E. de Macao (Cultural Affairs Bureau of Macao)
IPM	Instituto Politécnico de Macau (Macao Polytechnic Institute)
NCSE	National Council for Special Education
NDSS	National Down Syndrome Society (US)
NHS	National Health Service (UK)
SAA	Suzuki Association of the Americas
SEND	Special Educational Needs and/or Disabilities
TERI	Talent Education Research Institute
UK	United Kingdom
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UNDESA	United Nations Department of Economic and Social Affairs
UNESCO	United Nations Economic, Scientific and Cultural Organisation
UNICEF	United Nations Children's Fund
UPIAS	Union of the Physically Impaired against Segregation
US	United States of America
WHO	World Health Organisation

Chapter 1: Background of Research

1.1 Introduction and Motivation

Eight years ago, I met my first piano student with Down syndrome (DS) through the Macau Down Syndrome Association – a little six-year-old girl. When I was asked to teach her, I was eager to accept. After all, I am an accomplished pianist. I have won several international competitions such as the IBLA Grand Prize in Italy and the London Grand Prize Virtuoso, and have had the privilege of performing as soloist with celebrated orchestras from Australia, Hong Kong and Macao in front of huge audiences. Besides, I was a piano teacher to many children at the time. Yet, when I stood in front of this little girl for the first time, I felt nervous, uncomfortable and helpless. Question marks filled my mind! How should I teach this child whose conditions seemed so different to other children whom I have been teaching? Initially, our lessons were often unsuccessful; my student was frequently uncooperative and seemed unable to understand my instructions. I felt at times alone and guilty. However, I was still glad to be able to partake in this child's musical journey because over the years, the most poignant but familiar story related by the association's administrators and parents of children with DS was their difficulties in finding instrumental music teachers willing to teach these young people. I am aware that the apprehensions I felt when I first met my six-year-old student are common to other instrumental music teachers here in Macao, as conversations with my fellow teachers revealed that many of them either are afraid of the physical appearance of people with DS or admit that they have neither the training nor the experience to teach children with SEND. Therefore, when I started to teach my first student with DS, I had at least relieved one family from the difficulties of not being able to find a piano teacher for their child.

When I began working voluntarily at the Macau Down Syndrome Association³, it was towards the end of my Master of Philosophy degree in Music Theory. The experience gained from these two commitments has altered my career objectives and my attitude towards music. Previously, I studied music for the sake of learning how to interpret it and how to convey this interpretation through my performance to create a pleasurable listening experience for audiences from different cultures. What I am interested in now is how someone like my six-year-old student with DS or any other disabled individuals can acquire the skills to make music on their own. Not only do I believe that they have just as much right to enjoy the pleasure and the beauty of playing a musical instrument, but I also believe they have the potential to succeed, as history has shown that countless disabled people had achieved greatness in the world of the arts, such as the blind Austrian pianist and composer, Maria Theresia von Paradis (1759-1824) (Gordy, 1987), or the one-handed Austrian pianist Paul Wittgenstein (1887-1961) (Howe, 2010). Therefore, I hope my students too will find happiness and an appreciation of their own worth in their music-making journey.

The more I studied the different music theories and the more I worked with students with DS, I came to realise that being a piano teacher was not enough to achieve my ambition. In order to take full advantage of using music to influence adults and young people who are disabled, I had to do further research. Hence, I decided to pursue a doctoral degree in education after completing my Master's.

³ A video featuring my involvement with the Macau Down Syndrome Association in 2018 was produced for the educational TV programme 'Dynamic Teaching' that was launched by Macao's Education and Youth Affairs Bureau (DSEJEJD). This video is available at:
<<https://www.youtube.com/watch?v=ZvZhpv0NWuo&feature=youtu.be>>

The decision to research into DS and music education with Macao as the setting is somewhat personal. Firstly, I was born in Macao, a small city on the southern coast of China. I completed my secondary school education in this city before being accepted by the Hong Kong Academy for Performing Arts to study for a Bachelor of Music degree with Honours. It was also here in Macao that I received my scholarship to pursue my performance study and the current research, so I wanted to contribute back to this society. More importantly, my mother's younger brother was born with DS. That has inspired me to teach children who are born with the syndrome, and to join the Macau Down Syndrome Association as a volunteer when it was officially established in March 2014 (Macao Central, 2021). As a researcher, I am aware that there are differences within the charity model of disability, in that there are organisations led by disabled people, and there are those claiming to be for disabled individuals (Oliver and Barnes, 2012); nevertheless, I wanted to be a part of this non-profit organisation which, although directed not by people with DS but by their parents, aims to support individuals with DS and their families, and to raise public awareness of people with the syndrome (Macao Central, 2021).

Apart from being a voluntary piano teacher at the association, I am also a part-time lecturer in Macao at both the Academia de Música S. Pio X and the Macao Polytechnic Institute, and in Hong Kong at the Hong Kong Academy for Performing Arts. Working in Hong Kong has made me aware that its support for students with SEND is significantly better than that in Macao. I hope the results gained from this research will shed light on the current teaching and learning conditions of children with DS within a musical environment and perhaps lead to better educational resources, teaching approaches or training of music teachers in relation, generally, to students with SEND in my home city.

1.2 Rationale Behind the Research

According to research, DS is categorised as a genetic disorder that causes physical and cognitive disabilities in individuals from birth, resulting in various health issues, and different levels of learning difficulties and capabilities (e.g., Newton, 2004; Oelwein, 1995; Selikowitz, 2008). Children diagnosed with DS are said to have distinctive physical and musculoskeletal features such as a short stature, a flat profile, upward slanting eyes, broad hands with short fingers, hypotonia, to name but a few (e.g., Gates and Mafuba, 2016; Selikowitz, 2008; Watson, 2019). They generally tend to reach expected developmental milestones later than their non-disabled peers (DSI, 2020; Selikowitz, 2008). Their cognitive impairments, which at times vary, are usually measured by degrees of severity, with the majority ranging from mild to moderate being said to have learning difficulties in various domains of cognition (Kabashi and Kaczmarek, 2019; Selikowitz, 2008). Children with DS can often have difficulties with language skills, generalisation, thinking and reasoning, as well as other factors such as delayed motor skills and difficulties with short-term memory, all of which can create educational barriers and inhibit their learning (Alton, 1998; DSI, 2020; Kabashi and Kaczmarek, 2019).

The physical and cognitive characteristics of DS had subjected children with the syndrome to forced institutionalisation in the early twentieth century under the eugenics movement (Cooley and Graham, 1991; Kikabhai, 2014; 2018). Although professionals at the time were in support of such treatment, many parents of children with DS had later regretted this segregation (Turnbull, et al., 2011 cited in Harding, 2016, p.28). Nowadays, institutionalisation is not essentially mandatory (Cooley and Graham, 1991). With the endorsement of the Salamanca Statement (UNESCO, 1994),

and the global signing of the 2006 United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), which China ratified and signed in 2008 regarding Hong Kong and Macao (UNDESA, 2021), individuals with DS are increasingly included in society, with better opportunities in education and employment (Cooley and Graham, 1991; Feeley and Jones, 2007; NDSS, 2019).

Buckley, et al. (2006) ascertained that educational and social inclusion can positively affect the overall development of children with DS. Over the past few decades, inclusive education had become an important issue worldwide (Sharma, Forlin and Loreman, 2008; UNESCO, 1994; UNICEF, 2020), with the 1994 Salamanca Statement proposing that schools were to serve all children, especially the young people with SEND (UNESCO, 1994), and Article 24 of the 2006 UNCRPD specifying that an inclusive education system must be ensured at all levels (UNDESA, 2021). This means that children who were traditionally excluded are given an opportunity to learn alongside children of different backgrounds in mainstream schools to develop the skills needed to succeed (UNESCO, 1994; UNICEF 2019).

The success of inclusive education depends on several factors including strong involvement from parents and communities (UNESCO, 1994; UNICEF, 2020). It also relies on pre-service teachers receiving proper training in teaching students with SEND (Sharma, Forlin and Loreman, 2008; UNESCO, 1994; UNICEF, 2020). But there has been research to suggest that for music teachers, such training was found to have been inadequate, resulting in the teachers' unpreparedness (Hourigan, 2007; Pontiff, 2004), and in their lack of knowledge and skill to make modifications to the instructional methods to develop suitable interventions (Darrow, 2009). Insufficient training for music teachers in SEND has been highlighted in studies set in Hong Kong and the US

(e.g., Delaney, 2016; Shelfo, 2007; Wong and Chik, 2015; 2016a; 2016b; Vinciguerra, 2016). I noticed that Macao has the same phenomenon; its current music education system is not quite prepared for the inclusion of children with SEND especially in the field of instrumental music learning. At present, there are only a few instrumental music educators in Macao who have the experience of supervising children with conditions such as DS, autism, or severe developmental delays.

The situation of only a limited number of these professionals being available in turn has resulted in very few in-depth educational studies focusing on this area. When I first started to teach piano to students with DS, I needed references that would provide me with appropriate and adaptable learning materials, or give me guidance as to how I could improve my teaching strategy. To my frustration, I could find very few related to teaching musical instruments to cognitively impaired students. Most of the existing literature on the topic of special music education are related to music therapy. Thompson (1982), for example, explained that because music therapy has a successful history in working with children affected by different impairments, music educators tend to turn to music therapists for guidance and adapt their teaching materials and procedures. However, music education and music therapy are two distinct disciplines and are fundamentally different (Patterson, 2003; Thompson, 1982). The American Music Therapy Association (2002 cited in Patterson, 2003, p.36) described music therapy as ‘the prescribed use of music by a qualified person to effect positive changes in the psychological, physical, cognitive, or social functioning of individuals with health or educational problems’. Therefore, while music educators’ primary objective is to focus on the teaching of musical knowledge and skills, music therapists are concerned with the use of musical activities from a medical perspective to promote non-

musical skills such as cognitive, motor, social and communication abilities (Patterson, 2003).

Having contemplated the therapists' goals, I began to question whether disabled people engaged themselves in music simply to achieve these therapeutic purposes, or perhaps they did want to be involved, be creative and enjoy music for its own sake. According to the Disability Arts Movement, which was initiated in the late 1970s (Sutherland, 2008), disabled people can be artistic in their own rights, producing intentioned creative works that are not only aimed at a disabled audience, but also non-disabled people (Gosling, 2006; Sutherland, 2005); thus, I wondered if the intention of people with DS in music could be in line with this movement. However, I have to first familiarise my students with DS with the piano before it can become a platform for them to create, enjoy and engage in music. Yet, there is currently a shortage of literature that specifically relates to people with DS learning the piano; therefore, in my research, I decided to explore different piano pedagogies that may be applicable to certain situations associated with teaching students with DS. While it is necessary to refer to certain medical perspectives that underpin the pedagogies, the purpose of this study is not to present DS as a 'disability', nor is it about how to help piano learners with DS overcome their 'disabilities'. Instead, it is about how people with different conditions can be supported in their musical journey.

1.3 Research Methodology

This research focused on private piano lessons that were conducted outside school hours, and it took the form of a qualitative study working within an interpretivist paradigm. Adopting the methodological approach of a collective case study, four cases

were established, each being both an intrinsic and an instrumental case study (Stake, 1995; 2005; 2006). Through a purposive (typical case) sampling procedure via the network of the Macau Down Syndrome Association, four triads of participants were selected, with each triad involving a piano teacher, a student with DS, and one of the student's parents⁴. A series of piano pedagogies suitable for teaching students with DS were introduced to and discussed with the teachers in order for them to select one or more to work with their own student in this study. Data for the research were collected through interviewing the participants, making field notes while observing their piano lessons, and utilising the diaries written by the teacher and parent from each case during a five-week research period. The data within each case study were examined, and the whole data set underwent a cross-case analysis using a thematic approach.

1.4 Terminology

There are several terms of which I felt an introduction is necessary in order for the reader to have a better understanding of their use within the context of this dissertation. These are 'impairment', 'disability', 'learning disabilities', 'SEND', and 'progress'.

Impairment vs Disability

The World Health Organisation defines 'impairment' as 'any loss or abnormality of psychological, physiological, or anatomical structure or function' (WHO, 1980, p.47), and 'disability' as 'any restriction or lack (resulting from an impairment) of ability to

⁴ No specific request was made that it had to be the mother or the father who was to accompany the child, because the interest of this research is 'parent' in general. It happened that the parents who took part in this project were all mothers, but I have no intention to suggest that fathers do not take on a 'mothering' role nor take lesser interest in the activities of their child with DS.

perform an activity in the manner or within the range considered normal for a human being' (ibid., p.143). However, according to the Union of the Physically Impaired against Segregation (UPIAS, 1976), there is a conceptual distinction between the two terms. While 'impairment' refers to the actual missing or defective part of the body, 'disability' is defined as:

... the disadvantage or restriction of activity caused by a contemporary social organisation which takes no or little account of people who have physical impairments and thus excludes them from participation in the mainstream of social activities. (ibid., p.14)

Bearing these definitions in mind, this study should bring to light whether the capability of the participating students in playing the piano is restricted by their impairments, and whether their advancement in piano learning depends on how the learning environment can accommodate their individual impairment to overcome the disability.

Learning Disabilities and SEND

The term 'learning disabilities' in this study is the terminology adopted in the UK and is the equivalent to the more widely used term 'intellectual disabilities' (Gates and Mafuba, 2016). As stated by the UK Department of Health (2001, p.14 cited in Gates and Mafuba, 2016, p.13), the term is understood as:

... a significantly reduced ability to understand new or complex information (impaired intelligence), to learn new skills with reduced ability to cope independently (impaired social functioning) which started before adulthood with lasting effect on development.

It is suggested that DS is one of the most frequently recognised causes of learning disabilities (DSE, 2020), and a child with DS is considered a child with 'Special

Educational Needs and/or Disabilities' (SEND). The term is used to describe learning difficulties and/or disabilities that make it harder for a child to learn, resulting in their falling behind other children of the same age (KIDS, 2021). According to Isaksson, Lindqvist and Bergström (2010), a student with SEND can be identified through three overlapping models: a pedagogical model that is associated with knowledge goals, a medical model that is related to the student's health, and a social model that is linked to the student's social situation and identifying barriers to learning within the school environment (ibid.).

For students with SEND, additional or different educational, social and health care supports suitable for their needs will be required (Gates and Mafuba, 2016; Isaksson, Lindqvist and Bergström, 2010; KIDS, 2021). In this study, supports were given by the participating teachers and parents through introducing alternative pedagogical interventions and involvement. The outcome should determine whether these supports have been aptly implemented and have indeed facilitated the learning of the piano for the students with DS.

Progress

Finally, the term 'progress' also needs to be clarified in order to understand the teachers' perception and expectation of the students' learning progression in the case studies. According to the framework offered by Music Mark (2015), there are seven areas for development in musical learning: performing skills, composing skills, aural knowledge, theoretical knowledge, cultural development, personal development, and evaluation. It can be gathered from the data collected that the teachers' evaluation of the students' progress in this research is focused mainly on two areas: performing skills and personal development.

1.5 Structure of the Dissertation

This dissertation consists of a further five chapters outlined as follows:

Chapter 2: Literature Review — This chapter draws references from existing literature to discuss various topics in relation to DS, with an emphasis on instrumental music learning, in particular, the piano. It also establishes how knowledge of DS is constructed under different models of disability.

Chapter 3: Methodology — This chapter explains the rationale behind my methodological approach. Its design and procedural strategies are discussed, and the issues of ethics, validity, and reliability in qualitative research are addressed.

Chapters 4: Findings — The four cases in this collective case study are separately presented, with the data collected within each case study described in detail.

Chapter 5: Analysis and Discussion — The four research questions are individually discussed through a comparative analysis of the themes common across the four case studies.

Chapter 6: Conclusion — This closing chapter reviews the rationale and frameworks for the research, summarises the findings derived from analysis, reflects on the study's limitations, and discusses its contributions and implications for further educational research, practice, and policy. Finally, it concludes with a personal reflection on how this research has affected my own perspectives on the teaching of piano to students with DS.

Chapter 2: Literature Review

2.1 Introduction

People with DS tend to be surrounded by negative misconceptions, but they can actively be involved in a range of educational, social, and recreational programmes (NDSS, 2019). With references drawn from selected literature and research on topics relating to instrumental music teaching and learning, in particular, the piano, to families and parental involvement, and to education and pedagogical approaches, this chapter aims to provide an understanding of the various ways in which knowledge of DS is constructed in relation to the different models of disability. It also presents an overview of Macao's current educational and communal music facilities for the city's disabled students and citizens. Finally, this chapter concludes by stating the research questions.

2.2 History and Perceptions of Down Syndrome

2.2.1 Origins and Definitions

From a medical model perspective, DS is a genetic condition that affects the normal development of individuals, both physically and intellectually, irrespective of their race, nationality, religion, or socio-economic status (Global Down Syndrome Foundation, 2018), and with around one in every 1500 babies diagnosed worldwide (DSE, 2020). The term itself was named after the nineteenth-century British physician, John Langdon Down, for being the first person to characterise the condition (NDSS, 2019). Down (1866) based his diagnostics of DS on certain facial features comparable to type of race and asserted that prominent features such as the shape of the eyes of the individuals concerned closely resembled those of the Mongolian people. On that

account, individuals born with DS were once referred to as ‘Mongols’ (Selikowitz, 2008), a term that is considered offensive (Oliver and Barnes, 2012) and incites racism (Borthwick, 1996). The way in which labels are used to categorised people has often been debated (Becker, 1963), and the concept of people-first language is sometimes used to address ‘people with Down syndrome’ (NDSS, 2019; Selikowitz, 2008).

2.2.2 Models of Disability

There are different models of disability that affect the way in which disabled people are perceived in society (Retief and Letšosak, 2018). The two most frequently discussed are the ‘medical’ and ‘social’ models, which are the key models being referred to in this dissertation.

2.2.2.1 The Medical Model

The medical model of disability became prevalent in the mid-nineteenth century due to advancements in the field of medical sciences (Olkin, 1999). It views disability as a ‘personal tragedy’ (Oliver and Barnes, 2012, p.79), requiring ‘cure, amelioration of the physical condition ..., and rehabilitation’ (Olkin, 1999, p.26). Thomas and Woods (2003, p.15) observed that medical doctors, who adhere to the medical model, tend to base their diagnosis of disabled people on the criteria that have been developed from the social perspective of what is regarded as ‘normal’. Therefore, children may be diagnosed with DS based on their physical appearance and characteristics, as well as being identified with learning disabilities. The way in which the medical model defines disability has been considered as fundamentally negative (Thomas and Woods, 2003), and this negative conception was conducive to some of the controversial medical treatments concerning disabled people, such as forced institutionalisation (Cooley and

Graham, 1991; Kikabhai, 2014; 2018) or involuntary sterilisation (Carlson, 2010, p.5 cited in Retief and Letšosak, 2018, p.3).

Under the medical model, disabled people are expected to submit to the role of a ‘sick’ patient, in ‘need’ of medical cure (Oliver and Barnes, 2012; Olkin, 1999; Retief and Letšosak, 2018). Existing research indicated that individuals with DS may experience many medical issues such as congenital heart defects, visual, and auditory problems (e.g., Fernhall, et al., 1996; Pikora, et al., 2014; Selikowitz, 2008). Hypotonia, which decreases the body’s muscle tone, is also said to be significant (e.g., Fidler, 2005; Latash, Wood and Ulrich, 2008; Watson, 2019). As such, certain medical conditions may require medical attention. Yet, it has been argued that this ‘sick role’ failed to distinguish between impairment and sickness, as Llewellyn, Agu and Mercer (2008, p.256 cited in Retief and Letšosak, 2018, p.3) noted that ‘many disabled people are not sick, but have ongoing impairments that do not present as daily health problems’. Pablo Pineda, the first person with DS to gain a university degree in Europe, once said in an interview: ‘[DS] isn’t an illness’ (99092423 234895, 2015, 00:01:09). He criticised that DS is still being labelled as such in today’s society, and people with DS are being put into categories by psychologists and medical professionals (ibid.). Thus, under the medical model, children with DS might be misconceived as being ‘sick’ because of their cognitive impairment, thinking that they require medical help rather than appropriate support to enable them to learn efficiently. If society continues to associate disability with sickness, then even if, like Pineda, the disabled person is a gifted individual, his or her talent can be discredited or overshadowed by an impairment that is not considered as the norm. This is further exemplified by the renowned pianist, Wittgenstein (1887-1961), who began a new career as a left-handed pianist after his right arm was amputated during the First World War (Howe, 2010). He had to endure

discrimination from audiences and critical reviewers who ascribed the success of his one-handed performances to his ‘heroic overcoming’ of his disability [*sic*], instead of genuinely appreciating his incredible talent (ibid., p.140).

2.2.2.2 The Social Model

Johnstone (2012, p.6 cited in Retief and Letšosak, 2018, p.3) asserted that the medical model perspective ‘projects a dualism which tends to categorise the able-bodied as somehow “better” or superior to people with disabilities’. As such, children with DS might be looked down upon as cognitively incapable of learning, without regard for any potential talents. This could result in them being denied of opportunities to schooling or pursue, as is the focus in this study, a musical interest. As Pickard (2009) noted, there used to be a notion that it would be unimaginable to consider children with DS capable of learning a musical instrument. To oppose the discriminating medical perspective, the social model began to develop in the latter half of the twentieth century, inspired by the activism of the British disability movement of the time (Gates and Mafuba, 2016; Retief and Letšosak, 2018). It posits that:

... disability is a social construction, that the problems lie not within the persons with disabilities but in the environment that fails to accommodate persons with disabilities and in the negative attitudes of people without disabilities. (Olkin, 1999, p.26)

The social model upheld the conceptual distinction between impairment and disability as explained by UPIAS (1976), that is, impairment refers to the actual bodily defect, whereas disability is caused by a society that does not accommodate the impairment. Furthermore, social model theorists deemed the term ‘people with disabilities’ inappropriate because they considered it to be ‘directly linked to the philosophy underlying the medical model’ (Retief and Letšosak, 2018, p.4). Instead, the term

‘disabled people’ was more suited because it aptly reflected ‘the societal oppression’ faced by people with impairments (ibid.). According to Gates and Mafuba (2016), the term ‘learning disabilities’ in the UK was, for similar reasons, disapproved by this self-advocacy movement, which considered that the physical, sensory, intellectual, or psychological composition in an individual should not lead to disability, even if they might lead to physical limitations or impairment (ibid.). Yet, society itself fails to accept people’s individuality, thus creating social barriers that are disabling (ibid.). Consequently, the term ‘learning difficulties’ was adopted as the terminology of choice to avoid the disability label (ibid., p.19). However, Aspis (1999) argued that such labels are affixed to individuals by the systems and warned that ‘labelling can be used as a mechanism of social control’ (ibid., p.179). When a child is labelled with ‘learning difficulties’ by the education system, they are assumed to be less capable of thinking and acquiring knowledge (Aspis, 1999); therefore, teaching materials are simplified, omitting ‘difficult’ information to accommodate the supposed cognitive deficits (ibid.). In a sense, people with learning difficulties are being treated as objects, ‘measured in accordance with the normalising standards of society’ (Kikabhai, 2018, p.57). Furthermore, there will always be the assumption that they need to depend on non-disabled people in decision-making in their daily life (Aspis, 1999). This, again, projects the notion from the medical model that non-disabled people are somehow ‘better’ than people with disabilities (Johnstone, 2012, p.6 cited in Retief and Letšosak, 2018, p.3).

The social model is also sometimes referred to as the minority model in the US (Olkin, 1999), yet disabled people are not necessarily in the minority, as anyone could become temporarily or permanently disabled during their lifetime (Bolt, 2015). For example, even non-disabled musicians could receive severe physical injury from the strain caused

by repetitive actions of musical performance (Howe, 2010). The important issue is that when impairments are regarded as disabilities by professionals, and when a society is assimilated by the professionals' judgements, discrimination can arise (Retief and Letšosak, 2018), targeting not only the individual who has the impairment, but also their family (Frizell, 2021; Rogers, 2011; Skotko, Levine and Goldstein, 2011). Therefore, we should view impairments as differences, and remember that 'difference is not deficit, and the differences offered by disability are part of a continuum of limitations that all bodies confront' (ibid., p.178).

No matter what the nature or severity of the impairment is, parents of disabled children need to seek professional advice, which has, historically, been predominantly based on the medical model (e.g., Rosner, et al., 2004). In education, for example, as recently as the mid-twentieth century, parents of children with learning difficulties were still 'expected to defer to professional judgement and to comply passively with the educational decisions for their children' (Harding, 2016, p.28), and it took years of research before it became evident that there was the need to strengthen parental participation to ensure effective education for children with labels such as DS (ibid.). According to de Boer, Pijl and Minnaert (2010), parents of children with SEND were a major group in many countries who advocated the implementation of educational inclusion. In recognition, the legislative framework for this movement was endorsed in the Salamanca Statement in 1994 to ensure that globally, education is provided for individuals with SEND within regular schools (UNESCO, 1994). In 2006, the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) advocated all aspects of human rights entitled by disabled people, placing inclusion in education in Article 24, and the right to be creative in Article 30 (UNDESA, 2021), thus enabling

a shift from viewing disabled people through the medical lens to embracing the social model of disability.

2.2.3 Influence of Down Syndrome on Families

Although the social model of disability advocates the rights of disabled people within society, it fails to address aspects of objective difficulties faced daily by the individual and their families from the impairment (Rogers, 2011; Thomas, 2007). As noted in Rogers' article (2011, p.566), many studies have suggested that 'a disabled child disables a whole family'. Having a disabled child can cause some parents to experience negative feelings of stress, guilt, and low self-esteem (Reichman, Corman and Noonan, 2007). Besides these emotional burdens, some parents tend to seek medical opinions from different professionals depending on their child's condition (Rogers, 2011). With families of children with DS, there are some positive findings: Cooley and Graham (1991) found that many families managed to create a balance in their family life despite feeling overwhelmed initially. They also experienced fewer stressed, and more rewarding moments (Hodapp, et al., 2001; Stoneman, 2007), and managed to develop closer and more harmonious family relationships (Abbeduto, et al., 2004; Fidler, Hodapp and Dyken, 2000; Hoppes and Harris, 1990). Furthermore, despite social discrimination, most parents agreed that raising a child with DS has taught them about patience and acceptance, self-growth with improved perception of life value, and greater understanding of love and joy (Frizell, 2021; Skotko, Levine, and Goldstein, 2011).

However, for a family with a child considered cognitively impaired, exclusion still seems inevitable even when society and schools are willing to embrace their child's

differences (Rogers, 2007; 2013). Some studies have shown that parents expect their disabled child to receive an inclusive education (Mastin, 2010; Rogers, 2007), as it is considered beneficial for the child's overall development (Buckley, et al., 2006). However, although younger disabled children may find it easier to adapt to the less daunting environment of primary schools (Rogers, 2007), they may find peer rejection as they become older (Mastin, 2010; Rogers, 2007), which can lower their self-esteem further (Mastin, 2010). When mainstream education is based upon tests and examinations, and disabled children's individual conditions and difficulties may be misunderstood, then these children could become practically, intellectually, and emotionally excluded within the school (Rogers, 2007). Furthermore, if the disabled child displays disruptive behaviour, they can be considered 'difficult and almost uneducable' (Rogers, 2013, p.993), then they could be socially excluded, even rejected by mainstream schools (ibid.). Therefore, while most parents expect their disabled child to attend regular schools, the reality of their child being truly included and accepted may not be what they have anticipated (Rogers, 2007).

2.3 Students with Down Syndrome in an Inclusive Classroom – 'Educating Peter'

Once entered into an inclusive learning environment, some parents became concerned about how their disabled child would develop emotionally when studying alongside non-disabled peers, and whether services targeting their child's special needs were available within regular schools (de Boer, Pijl and Minnaert, 2010; Fidler, Lawson and Hodapp, 2003). The concerns and challenges surrounding a child with DS in a mainstream school can be observed in the documentary 'Educating Peter' (Mason, 2018). The film followed Peter, a third-grade student with DS in his first year studying

within an inclusive classroom in Virginia, US, and depicted scenes that reflected the social attitude from the teachers and the other students towards DS: In the beginning, the students were afraid of Peter's appearance and socially unacceptable behaviour, and they were sceptical of his ability to learn (ibid., 00:02:46). The class teacher also felt scared and uncertain, believing that it would be a constant challenge (ibid., 00:03:15). Peter also demonstrated the suggestion that children with DS may become angry and frustrated when they realise their own limitations (e.g., MedlinePlus, 2018). At one stage in the film, Peter queried his own intelligence. He asked his class teacher: 'I stupid?' (ibid., 00:18:12). His class teacher interpreted this as being the child's realisation of his inability to do the same thing as his classmates. She believed that Peter 'knew he was basically out of place for a while' (ibid., 00:19:00).

To facilitate learning for students with DS, teachers can refer to the interlinked theoretical learning concepts of the zone of proximal development (ZPD) and scaffolding. The Vygotskian concept of the ZPD is defined as:

... the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1978, p.86)

Based on this notion, Wood, Bruner and Ross (1976) introduced the term 'scaffolding' to represent the actual process of assisting the student through the ZPD. The concept of scaffolding can appropriately overcome the problem of a short-term auditory memory deficit that students with DS are said to have (Alton, 1998; Yussof and Paris, 2012), as scaffolds expect the teacher to allow the student to concentrate on and complete those tasks that are 'within his range of competence' before introducing new ideas (Wood, Bruner and Ross, 1976, p.90). Hulme and Mackenzie (1992 cited in

Felix, et al., 2017, p.612) also suggested that new skills or activities can be more easily absorbed and remembered when these are broken down into smaller steps and are practised repeatedly. As the teacher collaborates with the student with DS in the ZPD with the use of scaffolding, the number of instructions is reduced, thus minimising the number of mistakes made, thereby reducing any negative feeling or frustration that the student may feel during the learning process, and consequently building their confidence (Yussof and Paris, 2012).

As each student with DS has their own learning profile based on their characteristic strengths and weaknesses (Alton, 1998; DSI, 2020), differentiation is necessary to create an effective learning environment (Alton, 1998; Felix, et al., 2017). One scene in 'Educating Peter' (Mason, 2018) showed the teacher differentiating as she sat Peter next to another student in the class and asked that student to help Peter complete his work. In this activity, Peter called out the object in the pictures stuck down in his workbook, and the other student wrote it down for him (ibid., 00:17:05). This episode also demonstrated how Peter was collaborating with a more capable peer in his ZPD (Vygotsky, 1978). Towards the end of the documentary, it could be seen that Peter's behaviour had improved. He had become an integral member of his class, learning and joining in activities with his classmates, and had developed good friendships.

Peter's story indicated that, as with all students of different abilities in mainstream schools, students with DS can be effectively educated via learner-centred pedagogies in which the teachers differentiate and apply different types of scaffolding to address each student's learning profile to meet their educational needs (Alton, 1998; Felix, et al., 2017). However, for a student with DS to succeed also relies on other people accepting them. According to a classmate, Peter's change was the result of the other

students' change of attitude towards him, and they were willing to help him (Mason, 2018, 00:23:55). Furthermore, the classmates felt it was Peter who had taught them how to think and how to react to problems (ibid., 00:24:30). As summarised by Peter's class teacher, not only had the class accomplished the academic subjects, but they had also 'learnt to accept another child who's not exactly like them, to have a disability and not to have a future like they're going to have' (ibid., 00:25:35). Thus, besides emphasising the importance of pedagogical and peer support, Peter's story proved that beliefs and attitudes towards disabled people can be altered through inclusion (Marino, 1994 cited in Mastin, 2010, p.21).

2.4 Children with Down Syndrome Learning Musical Instruments

2.4.1 Musical Abilities of Children with Down Syndrome

The supposed musical ability in children with DS had frequently been referred to in popular and professional literature dating back to the late nineteenth and early twentieth century (Stratford and Ching, 1983). This musical association have led contemporary researchers to study, for example, how children with DS responded to rhythm (Stratford and Ching, 1983; Reina, Vall-Llovera and Saldana, 2016), or which dynamics they preferred (Flowers, 1984).

Although these studies have investigated the musical abilities and preferences in children with DS, they did not examine the possibility of improvements if these individuals received appropriate music or instrumental music training as exemplified in the research by Edenfield and Hughes (1991), and Pickard (2019). In Edenfield and Hughes's (1991) US-based research, they studied the singing ability of two groups of secondary school students with DS (matched for their chronological and mental age).

One group was enrolled in a school that had an established choral music education curriculum, and the other group in a school without such a facility. The singing skills of these students were assessed under the categories of articulation, melodic rhythm, melodic contour, steady beat, and pitch. The group with the music training achieved higher scores in all the categories, but the mean scores of the two groups' singing assessment did not present significant statistical differences. When comparing the singing ability of these two groups of students, the researchers did not describe the curriculum within the choral music classes, nor the teaching method(s) employed. Thus, it was unclear as to how the schools' pedagogic strategies had been influenced by pedagogic needs. As identified by Norwich and Lewis (2005), there are three kinds of pedagogic need in inclusive practices: needs that are common to all students; needs that are specific to groups, and needs that are unique to an individual. They have also noted two contrasting pedagogic positions to which a school can adhere in order to accommodate these needs: a 'general differences position' and a 'unique differences position' (ibid., p.3). Some schools may adopt pedagogies based on the 'general differences position' in which the emphasis is on addressing the specific needs of a group that have similar characteristics, for example, DS (ibid.). Others may adopt the more social 'unique differences position' in which all students are considered to be generally the same, but also different (ibid.). In this position, disabled students are not specifically categorised into sub-groups. Rather, 'differences between individuals are accommodated ... in terms of the uniqueness of individual needs and their dependence on the social context' (ibid., p.4), and any teaching strategies applied should be suitable for all students. Since the focus of the two pedagogic positions is different, the outcome of the students' performance could vary. Therefore, the schools' pedagogic decisions and strategies in Edenfield and Hughes's (1991) research could, in this case, have

affected the level of improvements in the singing skills of the students with DS considerably.

In Pickard's UK-based longitudinal study on instrumental music tuition for children with DS, the researcher argued that:

... while a medical model of disability may interpret this learning profile as a list of deficiencies, an informed, strength-based approach to teaching could empower students and challenge barriers to participation through suitably tailored provision, providing a relevant and constructive learning experience. (Pickard, 2019, p.110)

In other words, Pickard's paper proposed that through personalised interventions, the musical abilities of individuals with DS could be appropriately maximised. In each of her three case reports, Pickard encouraged the student to choose their preferred instrument(s) and explored alternative ways of teaching and learning when they could not follow the 'mainstream approaches to instrumental tuition' (ibid., p.119). Her personalised interventions addressed the possible appliance of various strategies based on the learning profile of each student with DS. The music lessons with the three students had different objectives, resulted in the teaching approaches for two of the students to be more therapeutic, utilising musical sounds as a medium to develop their interaction and communication skills. But there was one student whose interest was to learn to play the piano. Pickard focused on this eight-year-old student's relative strength in visual memory and incorporated colour coded piano keys and notes with letter names. She noted that with the inclusion of the student's favourite characters and familiar melodies, the notations became visually memorable. Improvisation was also encouraged, as the student became more competent with Pickard's scaffolded strategies. The student developed piano playing technique and was able to play familiar

tunes by ear and read individualised notation to learn unknown melodies (ibid.). The researcher regarded this as an indication of the student making progress physically, cognitively, emotionally and socially (ibid.). After three years of determination and effort, the student was able to ‘develop her repertoire and skill level in a context that was meaningful and relevant to her learning’ (ibid., p.120).

From these two research studies, it can be gathered from Edenfield and Hughes (1991) that musical aptitudes such as singing ability in students with DS could be improved under guidance, even though I critiqued earlier that the researchers did not discuss the actual teaching strategies. Pickard (2019), on the other hand, demonstrated the effectiveness of tailor-made interventions for working with children with DS. Therefore, in order to develop potential musical abilities in these children, the responsibility falls primarily on the educators’ choice of pedagogic position in an inclusive situation (Norwich and Lewis, 2005), or on the instructor’s personalised approach for individual student, which proposes ‘a shift to the starting point of the educator to the more ... valid “norm” of the learner’ (Pickard, 2019, p.114).

2.4.2 Models of Learning Applicable to Learning the Piano

Historically, piano teachers were performance trained under the ‘master-apprentice’ model, in which the skills of piano playing were passed onto them by someone with that knowledge (Crappell, 2019). In turn, they taught their students in the same manner as they were taught (ibid.). This model of learning remains applicable for beginner and younger piano students who often need to be guided (ibid.), and coincides with Vygotsky’s (1978) theory that a child learns by socially interacting with a skilled teacher who provides them with verbal instructions or models behaviours. In the form

of rote teaching, a piano student will imitate the different aspects of the teacher's performance model (e.g., notes and rhythms, fingerings, hand position) (Thompson, 2018). However, Crappell (2019) argued that although the student may be able to mirror what the teacher shows them, they may not understand the reason for learning these elements. Besides, the apprenticeship training received by the teachers may be inappropriate for students who have different abilities and goals, and the strategies used may be considered outdated (ibid.).

Thompson (2018) offered four models of how learning has been interpreted by educational theorists, philosophers and researchers, and suggested their adaptability to the process of piano learning. The first model indicates that learning involves linear learning structures, in which the piano student concentrates on mastering one musical element before advancing onto the next stage (ibid.). The second model suggests that learning involves the student making sense and meaning from their own experiences in the music lessons (ibid.). The third is a creative and recursive model, in which learning involves cyclical and explorative processes whereby the student develops through experimentation and imitation, and through exploration of possibilities (ibid.). In the fourth model, the piano student's learning is said to be influenced by their nested personal and collective worldviews, integrating experiences that involve 'the simultaneous engagement of physical, emotional, interpersonal, auditory, and environmental themes' (ibid., p.20).

These existing models of learning may prove relevant to non-disabled students, but they do not take into account students with cognitive impairment. In the case of DS, cognitive deficits may render the individual incapable of deciphering abstract musical concepts (DSI, 2020; NHS, 2018). Weaknesses in consolidation and retention for

example, can also cause difficulties in learning for students with DS (Alton, 1998; DSI, 2020; Wishart, 1993). Furthermore, Kliewer (1993 cited in Mastin, 2010, p.39) stated that cognitive development in many individuals with DS ceases to progress further than the level equivalent to that of a typical child of six to eight years old. Based on this observation, it might be assumed that the development of the scope of the individual's worldviews and experiences is limited. Studies have also ascertained that persons with cognitive impairment are more susceptible to 'learned helplessness', a behavioural display that has a negative impact on learning (Gacek, Smoleń and Pilecka, 2017). When exposed to a demanding task, students with cognitive impairment may not realise the degree of difficulty (ibid.). But continuous unsuccessful attempts can cause them to develop symptoms of 'learned helplessness' such as low self-esteem, frustration and passivity (Cherry, 2021). They may also adopt avoidance strategies to avoid learning new skills (Wishart, 1993). Based on these medical and social perspectives, as well as from personal experience, it can be attested that students with DS do not necessarily abide by the aforementioned models of learning. Although they may learn according to the first model of following a linear structure, but when confronted with perhaps a complex musical element, there is still the risk for symptoms of learned helplessness to appear or for avoidance strategies to be adopted.

2.4.3 Characteristics of Down Syndrome related to Piano Learning

Although children with DS may encounter difficulties when learning musical instruments, McCullough (1997, p.64 cited in See, 2011) stated however, that playing a musical instrument can be an alternative way of communication for these children, and engaging in musical activities can reduce the stress and frustration they experience. Yet, certain characteristics of DS can present challenges for instrumental teachers if

they intend to teach their students with DS in the same manner as in teaching non-disabled students (McCord and Fitzgerald, 2006). For piano learning, the following conditions may have a direct impact for students with DS. Although separately discussed, these conditions could apparently co-exist, and children with DS could have one or a combination of these conditions (Selikowitz, 2008). Because all children with DS are unique, and there are more differences than similarities between them (ibid.), piano teachers need to be completely aware of their students' conditions and take note of the possible interventions applicable in lessons. Yet, to enable teachers to gain fuller understanding of these conditions in order for them to decide on the appropriate teaching strategy, the discussion needs to depend, to a certain extent, on the medical model of disability.

2.4.3.1 Cognitive and Behavioural Conditions

Most children with DS are said to have moderate to severe learning difficulties⁵ (Altenmueller, 2007; Gates and Mafuba, 2016; Martin, et al., 2009; Selikowitz, 2008). Furthermore, research showed that they could be dually diagnosed with other conditions such as autism or ADHD (Buckley, 2005; Capone, 1999; Määttä, et al., 2006). Behaviourally, they can display challenging behaviours similar to non-disabled children such as stubbornness, inattentiveness, avoidance, or disobedience (Altenmueller, 2007; Feeley and Jones, 2007; Rosner, et al., 2004; Wishart, 1993). These cognitive and behavioural characteristics could affect their learning development.

⁵ In the context of SEND in the UK, 'moderate learning difficulty' corresponds to 'mild learning disabilities', while 'severe learning difficulty' corresponds to 'moderate learning disabilities' (Gates and Mafuba, 2016, p.13).

While non-disabled children are acknowledged as having the mental capacity to comprehend complex ideas (Gottfredson, 1997), the cognitive deficits that are said to be associated with children with DS may bring about their incapability to decipher complex matters such as musical concepts (DSI, 2020; NHS, 2018). However, Daunhauer, Fidler and Will (2014) argued that children with DS are capable of understanding and learning, only that they need extra support and stimulation. They are also known to be inquisitive and observant (Altenmueller, 2007). But because of their difficulties in remembering verbal information due to a poor auditory short-term memory (Alton, 1998; Määttä et al., 2006), they take longer to process and interpret verbal instructions before responding (Bunn, Roy and Elliot, 2007; Van Dyke, et al., 1995). Therefore, it would be more effective in piano lessons if teachers were to give shorter instructions (Canton, 2017), or break tasks down into segments (Bauer, 2003). A characteristic reported by Down (1866) was that '[individuals with DS] have considerable power of imitation, even bordering on being mimics'. Contemporary research also found that children with DS are quite strong in visual-spatial processing (Bunn, Roy and Elliot, 2007; Fidler, 2005; Martin, et al., 2009; Rosner, et al., 2004). Therefore, suggesting imitation (Thompson, 2018; Velásquez, 1991), or providing sufficient visual stimuli (Bunn, Roy and Elliot, 2007; Velásquez, 1991) in the learning process can lead to expected responses or results from them.

2.4.3.2 Cardiovascular Conditions

Studies indicated that about one-third of children with DS are diagnosed with congenital heart conditions (Leonard, Eastham and Dark, 2000; Newton, 2004; Selikowitz, 2008; Van Dyke, et al., 1995). According to research, these defects tend to be more aggressive than those found in the general population; therefore, even after surgery, the children

affected would still become tired easily (Van Dyke, et al., 1995). When they participate in music lessons, some adjustments to the class structure are necessary. Bauer (2003) suggested that teachers could substitute the gentler hand-tapping exercise for walking when teaching a rhythm, or split a full lesson into two halves with a rest interval to avoid over-exertion.

2.4.3.3 Auditory Conditions

People with DS are said to be more susceptible to hearing disorders (Sacks and Wood, 2003), with about eighty percent of this population being diagnosed (Shott, 2000). Research has highlighted that hearing impairment in children with DS can impede their language comprehension, speech sound production, and learning ability (Kumin, 2006; Selikowitz, 2008). To help them learn, Bauer (2003) proposed that music teachers should speak slowly and clearly if the student's hearing problem is mild, or learn sign language if the student has a severe hearing deficit. As an alternative, Altenmueller (2007, p.239) suggested that it is possible to counteract the hearing problems in students with DS if 'instrumental methods are modified to teach playing technique and pitch recognition through visual cues and tactile stimulation'.

2.4.3.4 Visual Conditions

Individuals with DS are said to be more prone to developing hypermetropia (long-sightedness) and myopia (short-sightedness) (Selikowitz, 2008). Another common visual problem associated with DS is strabismus, or squint. It is a condition in which the eyes do not align properly, causing difficulties in focusing on an object simultaneously (Holbrook, 2006; Selikowitz, 2008).

Bauer (2003) suggested that problems related to vision could affect academic learning in terms of reading and writing, implying that the reading elements in conventional instrumental music lessons would be an issue for a visually impaired student with DS. Although the above visual conditions are common and can be corrected with prescription glasses (Selikowitz, 2008), music reading could still be problematic if the student displays certain challenging behaviour that makes wearing glasses an obstacle. To facilitate the reading of music, teachers could consider simplifying rhythms or omitting various components in the notation such as dynamic and expressive markings (McCord and Fitzgerald, 2006). Larger and bolder prints, and the use of colours are also considered effective and have frequently been recommended (Bauer, 2003; Cantan, 2017; Melodymusic, 2012c; McCord and Fitzgerald, 2006).

Altenmueller (2007, p.238) remarked that ‘the quickest way to teach music to visually impaired children is through listening’. Using pre-recorded materials is strategically viable to overcome visual problems, especially in the case of blind students (Altenmueller, 2007; Bauer, 2003). Throughout history, this model of learning to play by ear has been prescribed by prominent music educators and musicians (Thompson, 2018). One such figure was the Japanese educator, Suzuki, whose pedagogical method and teaching philosophy are discussed below (§2.6.2).

2.4.3.5 Motor Conditions

Existing research stated that in addition to hypotonia, children with DS can have excessive joint flexibility which further affects the overall development of motor skills (Latash, Wood and Ulrich, 2008; Sacks and Buckley, 2003). However, studies also indicated that motor movements, although slow, can be developed in accuracy and

efficiency (Latash, Wood and Ulrich, 2008; Rigoldi et al., 2011; Sacks and Buckley, 2003). The accuracy of motor performance can be attributed to the mode of instruction, with studies showing visual-spatial or verbal-symbolic instructions being more effective in eliciting accurate response than verbal instructions alone (Bunn, Roy and Elliot, 2007; Velásquez, 1991).

Each type of musical instrument demands a certain level of motor and co-ordination ability, and as Palisano, et al. (2001) pointed out, more time is required as the task increases in complexity. Nevertheless, learning how to play an instrument can be beneficial for disabled individuals, as the process of playing, coupled with the rhythmic movements, can strengthen their co-ordination skills and specific muscle focus points (Altenmueller, 2007; Cross, 2003; Moreno-Garcia, Monteagudo-Chiner and Cabebo-Mas, 2020; Velásquez, 1991).

2.4.3.6 Communicative Conditions

For children with DS, expressive language is found to be generally weaker than receptive language (Fidler, 2005; Kabashi and Kaczmarek, 2019; Martin, et al., 2009), and their speech is unlikely to become completely comprehensible (Kumin, 2006). But because it has been recognised that music and the spoken language share many common properties such as rhythm, timbre, tempo and repetition, music instructions are therefore considered effective in helping children with DS improve their speech production (Altenmueller, 2007; Cross, 2003; Darrow, 1989; Moreno-Garcia, Monteagudo-Chiner and Cabebo-Mas, 2020).

2.4.4 Parents' Role in Instrumental Music Learning

Research suggested that parents should have higher expectations for potential talent in their children with DS (Skotko, Levine and Goldstein, 2011). However, to give a child with DS the opportunity to pursue an interest or to develop a talent demands huge commitment from parents. In the case of instrumental music learning, some research in the US indicated that most parents of disabled children in mainstream music classrooms felt the teachers underestimating their children's capabilities and having little inclination for developing their musical skills (Shelfo, 2007). For children with DS to learn a musical instrument as an extra-curriculum activity, Cross (2003) recommended that parents will first need to know how to introduce music-making to their children, and how to find qualified and willing music teachers who do not regard teaching only in terms of examination successes. She also informed parents and teachers that teaching children with DS will take time and involve disappointments, but it will also be a rewarding experience (ibid.).

To support disabled children in music learning, whether for musical achievement or simply for enjoyment, it is essential that, and beneficial if parents communicate regularly with their children's music teachers (Cross, 2003; Scott, et al., 2007). Such communication enables teachers to gain a better understanding of the children's conditions and their parents' expectations, and parents themselves to see a clearer picture of their children's progress (Scott, et al., 2007). Davidson, Sloboda and Howe (1995, p.44) also asserted that 'the development of musical excellence cannot be seen as something relating solely to teacher and student behaviours and interactions'. Without positive parental involvement, children are unlikely to achieve a high standard in music-making (ibid.). Many studies have ascertained that all manners of parental involvement,

especially in the early years, are crucial in ensuring success in children's musical journey (e.g., Briscoe, 2016; Creech and Hallam, 2003; Davidson, Sloboda and Howe, 1995; Margiotta, 2011); however, pressure from overbearing parents could cause children to become discouraged from music learning, as they could lose the sense of satisfaction and enjoyment (Cheng and Southcott, 2016; Margiotta, 2011).

2.5 Training of Instrumental Music Teachers for Students with SEND

In Macao, undergraduate courses specialising in music offer intensive academic and instrumental music training to prepare graduates to take on different roles of musicians in society (IPM, 2019). There were graduates who were disabled, for I, as music lecturer at the Macao Polytechnic Institute, had an opportunity to teach an undergraduate student who had serious visual problem. She was not given any special facilities to accommodate her impairment, and her learning process was the same as the other students. While this is an example of a disabled music student being included in higher education, the undergraduate music curriculum in Macao is similar to those in Hong Kong (e.g., CUHK, 2019; HKAPA, 2019) and the US (e.g., Shelfo, 2007), in that it does not have any supplementary modules that cover special education. This means that students who graduate to become music teachers are largely unprepared to teach students with SEND (Delaney, 2016; Shelfo, 2007; Vinciguerra, 2016). Without adequate pre-service preparation, in-service music teachers, however experienced, will also lack competence and confidence in teaching these students, and will require additional training during their teaching career (Vinciguerra, 2016). According to Hammel and Hourigan (2011 cited in Vinciguerra, 2016, p.6), it is necessary for music teachers to gain experience in working with various special needs, because their attitudes towards

teaching students with SEND will be influenced by the knowledge that comes with the experience (Hourigan, 2007).

2.6 Pedagogical Research and Methods for Piano Teachers of Students with Down Syndrome

In a study conducted in the US by Rosner, et al. (2004) to investigate the social patterns of children with ‘intellectual disability’ [*sic*], the small sample group of children with DS was found to be interested in musical activities such as dancing, singing, and listening to music, but with lesser interest in playing musical instruments. Since such research could be served as reference for families and educators when planning activities for children with DS, it could result in the child’s actual interest in learning musical instruments being overlooked, and in very few studies being undertaken that would examine the difficulties likely to be encountered by instrumental music teachers of students with DS. Furthermore, with piano teaching, even though certification in piano pedagogy has been highly supported for more than a century, it is not a standard requirement for piano teachers (Crappell, 2019), and the age-old belief that ‘piano performers are by definition also piano teachers’ still persists across the globe (ibid., p.17). To become a piano teacher in Hong Kong, for example, Liu (2010 cited in Crappell, 2019, p.17) noted that performance is the prerequisite, while pedagogical training in piano is not essential. To my knowledge, Macao has the same minimal expectation of piano teachers. But when these piano teachers also lack professional training in SEND, and when it has been suggested that students with learning difficulties do not necessarily benefit from the traditional modes of instruction (McAllister, 2012), problems could arise when facing students with DS. In view of

this, the following pedagogical research and methods offer insights into this teaching environment.

2.6.1 Velásquez's Research on Piano Teaching and Learning of a Student with Down Syndrome

Velásquez's (1991) research is one of the earliest that describes the instrumental teaching and learning of students with DS. It presented a case study of an eighteen-year-old girl with DS who was being taught to play the piano over a period of twelve weeks with one to two lessons per week. In preparation for the study, 'a plan for multisensory musical experience was formulated in order to maximise [her] learning via sensory stimuli' (ibid., p.84). To begin the experiment, the 'verbal cue' (ibid.) was randomly chosen as the baseline intervention (type A). Using only the black keys, four additional types of intervention were then introduced to improve the girl's finger exercise performance at the piano (ibid.). The first was 'verbal cue with tactile cue' (type B), in which the researcher spoke a string of digits and touched the girl's fingers on the keyboard lightly so that she could feel which finger she should play. The second was 'verbal cue with visual/aural model' (type C), in which the student watched and listened as the researcher played the notes two octaves down, and the student then imitated on her own register on the keyboard. The third was 'sung cue' (type D), in which the spoken digits were substituted with sung digits. The fourth intervention was an 'iconic/symbolic representation' (type E) with which the researcher showed the student a sheet of paper containing digits and corresponding crotchets and minims spread across the page (Figure 2.1), and verbally instructed her which hand to use prior to each exercise (ibid.). Results from the statistical analysis of the interventions' effectiveness indicated that type E intervention proved to be the most successful,

enabling the student to gain confidence in musical performances with the drive to continue with her private lessons (ibid.).

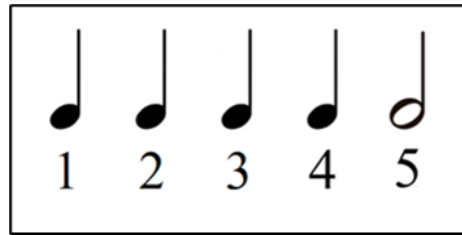


Figure 2.1: An 'iconic/symbolic' representation based on Velásquez's description

From this case study, Velásquez (1991, p.85) concluded that 'individuals with Down syndrome often fail to perform tasks with the same level of competence as their peers without disabilities'; however, she stressed that appropriate treatment from the instructor and tremendous support from the family can ensure the student's continuous progress (ibid.).

2.6.2 Suzuki's Method for Instrumental Teaching

The Suzuki method was created in the mid-twentieth century by Shinichi Suzuki (1898-1998), a Japanese violinist, educator, and philosopher (Thompson, 2016). Observing that children everywhere could effortlessly learn to speak their native language (SAA, 2018; Suzuki Music, 2005), Suzuki decided that 'this simple but remarkable observation of mother tongue acquisition could serve as the theoretical model for an approach to music education' (Thompson, 2016, p.175). Originally developed for the violin, the Suzuki method has since been adapted for numerous musical instruments including the piano (SAA, 2018; Suzuki Music, 2005; Thompson, 2016), with each instrument having its own set of graded repertoire (SAA, 2018; See, 2011).

The learning process of the Suzuki method follows a set of principles parallel to a child's acquisition of their mother tongue (SAA, 2018; Suzuki Music, 2005; TERI, 1999). As this first language is exposed to the child the moment they are born, music should therefore be made accessible within the child's immediate environment from the beginning as the first steps towards acquisition (Suzuki Music, 2005). Suzuki students, often as young as three years old, begin their formal training by listening daily to recordings of Suzuki's graded repertoire for the chosen instrument and learning simple techniques (SAA, 2018; Suzuki Music, 2005). These recordings serve as a role model in tone production, which Suzuki considered to be the foundation for instrumental music learning (Thompson, 2018).

Active parental involvement is important in realising Suzuki's idea of a 'parent-teacher-student triangle [that is] fundamental for effective learning' (Creech and Hallam, 2003, p.29), and in achieving the nurturing environment emphasised throughout his philosophy (SAA, 2018; TERI, 1999). A parent is expected to attend and observe their child's lessons (SAA, 2018; Suzuki Music, 2005), and be taught the basics of playing the instrument in preparation for their role as the home teacher (SAA, 2018; See, 2011). Being the second teacher, the parent will oversee and encourage their child's practice within an affectionate and supportive home environment (TERI, 1999). This echoes the acquisition of the mother tongue, in which children are more likely to enjoy speaking when they are not being commanded to do so (ibid.).

Contrary to conventional teaching, the Suzuki method insists that reading music will only be introduced after the students have thoroughly learnt the aural, technical, and musical skills, which again, corresponds to the notion that children only learn to read after they can speak (SAA, 2018; Suzuki Music, 2005). Through continuous imitation

and repetition, young infants evolve from saying simple words to adequately communicating in their mother tongue within a few short years (TERI, 1999). Similarly, through daily listening and practising from memory, Suzuki students can expect to master the pieces learnt without the need for any written music (ibid.).

The Suzuki method, or ‘Talent Education’ as Suzuki called it, considers music ability not as an innate talent, but one that can be developed if trained properly (SAA, 2018; See, 2011; Suzuki Music, 2005). It embraces the notion that every child can learn (SAA, 2018; See, 2011; Suzuki Music, 2005), implying that disabled children can learn musical instruments (See, 2011). This notion is in line with a broader educational concept suggested by Segal (1967), in that no child is ineducable. As such, the Suzuki method has been adapted for teaching students with different impairments, including DS (See, 2011). Visually impaired students with DS could benefit from the method with its emphasis on listening and learning without using music scores (Bauer, 2003), and their learning process could be further stimulated if teachers would incorporate various forms of instruction such as visual aids, games or modelling (Humpal, 2006 cited in See, 2011). Furthermore, many instrumental music teachers of students with DS have found the Suzuki method effective in improving their students’ co-ordination and increasing their muscle strength through muscle patterning and repetition practice (McCullough, 1997, p.64 cited in See, 2011).

2.6.3 Cross and the ‘Melody’ Organisation

‘Melody’ is a charity organisation set up in 1994 by Cross, a piano teacher from Birmingham, UK (Melodymusic, 2012a). Its purpose is to promote instrumental music teaching for people with learning difficulties (ibid.), and potential instrumental teachers

are given the advice to teach with patience, perseverance, and imagination, instead of using traditional teaching methods (Cross, 2003). Furthermore, parents are encouraged to be actively involved in lessons and practice to ensure success (ibid.).

The organisation has developed several resources and ideas for teachers, such as the use of ‘improvisation’ to allow children with learning difficulties to express their feelings uninhibitedly in music (Melodymusic, 2012b). But the most significant resource is Melody’s set of unique music notations: the ‘alpha notation’ and the ‘stave notation’ (Melodymusic, 2012c). Both notations (Figure 2.2) have fingering instructions, and make use of colour coding, with the right-hand notes in red, and left-hand notes in green (ibid.). Originally created for a child with DS, these notations are also suitable for students who find reading conventional notation difficult (ibid.), and parents are advised to make use of these notations to help their children in between lessons (ibid.).

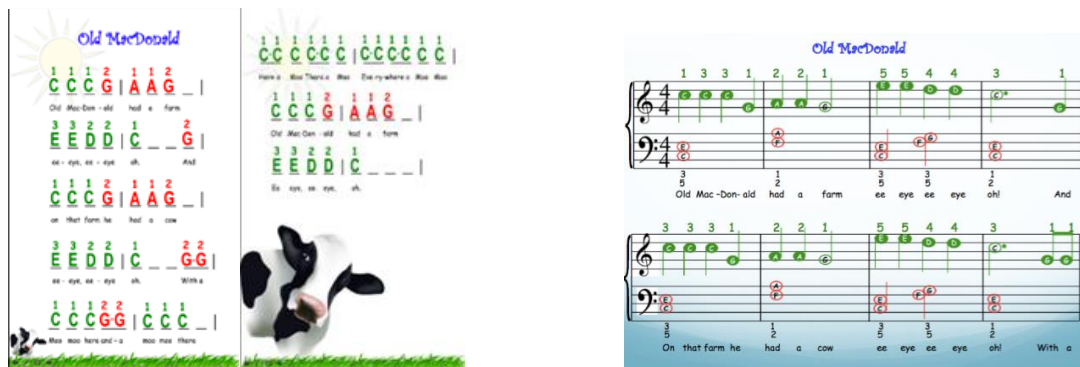


Figure 2.2: Examples of an ‘alpha notation’ (left) and a ‘stave notation’ (right)

Downloaded from Melodymusic (2012c)

2.6.4 Cantan and ‘Colourful Keys’

‘Colourful Keys’ is a piano studio set up by Cantan, a piano teacher from Dublin, Ireland (Colourful Keys, 2018). Cantan has over fifteen years of experience in teaching students of all abilities, including those with ADHD, autism, DS, or dyslexia (Cantan, 2017). She noted from experience that all students with SEND are unique even when they have the same diagnosis, thus, she concluded that there is not a one-size-fits-all model for teaching them (ibid.).

Cantan recommended three teaching strategies which can be implemented into the lessons for students with SEND in varying degree of relevance, depending on the characteristics of the individual student (ibid.). Two of these strategies are applicable to the present research: one is ‘clear directions’, giving extremely plain instructions almost to the point of being blunt and rude; the other is ‘colour coding’, which can be applied to highlight any teaching materials and information that the students may find difficult to notice, such as the piano keys, or notes on the stave (ibid.). Colour coding is considered particularly suitable for students with DS because they are said to have a tendency towards visual learning (Cantan, 2017; Fidler, 2005; Holbrook, 2006), but it may not be appropriate for students with ADHD or who are autistic because they can easily be distracted by too many colours (Cantan, 2017). In this case, keeping to black and white will create less distraction (ibid.). Since according to research, both autism and ADHD can be dually diagnosed in children with DS (e.g., Buckley, 2005; Capone, 1999; Määttä, 2006), Cantan (2017) advised that it is important for piano teachers to pay attention to their students’ individual needs and observe how they learn best.

According to Cantan (2017), allowing children with SEND to participate in piano lessons can be enriching and rewarding for parents because seeing their child

performing in front of a crowd is a special moment, which can be so important considering the rest of the child’s life might be a challenge. Thus, she encouraged parents to be involved and supportive even if they have no knowledge in music or in the instrument (ibid.).

2.6.5 Aschenbrenner and ‘Piano by Number’

Since the nineteenth century, numbers had been used to introduce the piano to beginners (Aschenbrenner, 2020a). This numbering concept has now been developed into ‘Piano by Number’ by Aschenbrenner, a children’s music educator who came upon the idea when teaching the piano to a child with DS (Aschenbrenner, 2020b), and subsequently created a series of piano books using numerical notations to assist in the teaching of children of all abilities (ibid.). The ‘Piano by Number’ method involves putting numbered stickers on the piano keys to act as visual reference points to help students discover the geography of the piano (Figure 2.3), so that they can easily enjoy learning the instrument without the struggles of having to read music (Piano by Number, 2020).



Figure 2.3: Example of a ‘numbered’ keyboard
Retrieved from Piano by Number (2020)

Aschenbrenner (2020c) discovered from experience that children with DS have certain qualities which indicate a superior musical sense. They have good musical memories, in that they can retain a series of notes, however complex, and reproduce them from memory if enough repetition is given (ibid.). They also have a good sense of rhythm, as exemplified by their ability to repeat exactly the rhythm dictated to them by the teacher (ibid.). But Aschenbrenner (2020b) warned that working with conventional sheet music and notation from the start would be counterproductive, as the task of learning to read music would be too demanding for these children due to their short attention span. Yet their proficiency with numbers means that ‘Piano by Number’ is a more immediate way for them to start playing songs on the piano (Aschenbrenner, 2020b; 2020c). According to Aschenbrenner (2020c), translating a familiar or a favourite song into numbers can effectively motivate a child with DS to learn to play the instrument, and for this child to be able to play a familiar song completely is an accomplishment that will help them develop their self-esteem.

2.7 Music Education for Disabled Students in Macao

Music education was introduced into Macao by European missionaries in the seventeenth century (Dai 2005), although it was not until 1999 before Macao’s Education and Youth Affairs Bureau (DSEJ) produced the first ever music syllabus to be incorporated into the general school curriculum, aiming to give students a sound foundation in various areas of music from which they can develop (DSEJ, 1999 cited in Hui, 2009). In practice, schools in Macao can determine how they are to comply with the specifications in the official curriculum (Hui, 2009). Decisions on the choice of music textbooks, teaching materials, teaching approach, delivery time and assessment can be made independently (ibid.). However, music lessons are more

prominent in primary schools, especially for the lower graders (Cheang, 2006), whereas it is acceptable if secondary schools wish to exclude music from their syllabus (Hui, 2009). Furthermore, very few schools in Macao would organise music activities outside the school curriculum (ibid.), but students from those schools that do arrange instrumental or choral ensembles as extra-curricular activities could potentially participate in the annual school music festival (ibid.). Despite having music lessons in schools, Hui (2009, p.486) observed that for the young people of Macao, ‘learning a musical instrument is a dream which they can only hope to realise’. This is because instrumental music learning is mainly a leisure pursuit rather than a school subject; therefore, parents need to resort to expensive private lessons for their children.

For the instrument focused in this study, the piano, many of Macao’s private piano teachers often follow the mainstream piano teaching methods that are practised by a majority of piano teachers in China where they generally focus on using technique-centred piano instructions that were used in their own training (Guo and Cosaitis, 2020; Zhong, 2016). Often influenced by the Russian School of piano playing, and using selection of repertoire from the Classical or Romantic eras, they train their students at an early age, focusing on mastering, for example, the ‘major and minor scales, arpeggios, double thirds, sixths, octaves’ in order to achieve the perfect technique (Zhong, 2016, p.112). Another approach to piano teaching is that from the onset, the teachers either prepare their students solely for the purpose of competitions (Guo and Cosaitis, 2020), or they prepare their students for graded-examinations to encourage them to acquire comprehensive musicianship (ibid.). For both of these objectives, the teachers instruct ‘by [moulding] and directing [the students] with a calculated, focused, and detailed pedagogical approach’ (Zhong, 2016, p.132). But as Cross (2003) pointed out, teaching piano to students with DS demands time and patience. This would perhaps

explain why piano teachers in Macao, who, as mentioned in Chapter 1, are often without adequate training in SEND, and who may have a preconception that is influenced by the medical model regarding the capabilities of children with DS, tend to be reluctant to accept them as students.

The situation regarding private teachers' lack of training and experience in teaching students with SEND also reflects the situation of music teachers in mainstream schools. In the early 1990s, the DSEJ began implementing inclusive education in the city's public schools (Forlin, 2011), and the law relating to this matter was extended in 1999 to both public and private schools, emphasising that students with SEND should be provided with an opportunity for a well-rounded development, enabling them to integrate gradually into the normal educational system, and subsequently be prepared for integration into society (Government of Macau SAR, 2018). Yet, despite the city's active promotion of inclusion in schools over the past two decades and its long-standing history of music education, resources for teaching students with SEND appear to be still lacking for potential music teachers, as exemplified by the absence of modules relating to special music education within the Bachelor of Music programme at the Macao Polytechnic Institute (IPM, 2019)⁶, and by a shortage of academic studies that focus on inclusive music education in this region.

Turning to the neighbouring city of Hong Kong, where mainstream schools began to admit students with SEND less than two decades ago to comply with the city's implementation policy of inclusive education (Wong and Chik, 2016a), several studies have been completed, discussing the experiences of music teachers and the frustration

⁶ An elective course entitled 'Special Music Education and Music Therapy' was added to the 2019-2020 academic year, but it was eventually eliminated due to insufficient applications (IPM, 2020).

they face in inclusive classrooms in the area. The teachers agree that they are unprepared to teach students with SEND (Wong and Chik, 2015; Wong and Chik, 2016a; Wong and Chik, 2016b). They hold negative views about inclusion because the ‘absence of professional knowledge of how to support SEND learning creates a dilemma for otherwise caring and proactive teachers’ (Wong and Chik, 2016a, p.204). The lack of teaching assistants and resources for music classes means that each music teacher has to find ‘their own inclusive-classroom solution’ (Wong and Chik, 2015, p.973). To add to the already ‘helpless’ situation, demands in increased workload relating to curriculum and lesson planning, as well as additional administrative duties intensifies the stress levels of the music teachers (Wong and Chik, 2015; Wong, Chik and Chan, 2018).

These studies have depicted the current situation of this group of professionals in Hong Kong. Yet there is a dearth of similar in-depth investigations into music/instrumental music teachers’ situation here in Macao, a situation that would have an impact on learning for students with SEND.

2.7.1 Music Activities for Disabled People in Macao

Macao is a region that embraces multiculturalism with music having a prominent presence in society. Over the years, its Cultural Affairs Bureau (ICM) has been actively promoting various forms of the arts by sponsoring regular concerts and performances, as well as staging annual arts and music festivals, which attract local audiences and arts lovers from other countries (ICM, 2019a). The city also boasts two orchestral ensembles: the Macao Orchestra and the Macao Chinese Orchestra. Besides performing internationally and locally, both orchestras endeavour to promote music

education to the schools and community (ICM, 2019b; Macao Orchestra, 2016). For young musicians, there is the opportunity to participate in the annual ‘Macao Young Musicians Competition’, which aims to provide a platform for young people to perform at their best, hoping that the invaluable experience will inspire them to pursue a musical career in future (ICM, 2019c).

The efforts from the ICM and the orchestral members allow citizens of Macao easy access to the arts for enjoyment and individual self-improvement. However, there does not appear to be any literature to suggest the availability of local facilities that would provide a platform for the disabled people in Macao to explore their artistic potential. This inadequacy of facilities might be regarded as discrimination by the Disability Arts Movement which, as Gosling (2006) pointed out, challenges some of the fundamental beliefs of today’s society. Among its causes, it advocates disabled people’s entitlement to full human rights, as there should be equality for all; and the need to dispel the belief that only non-disabled people can be artistically creative (ibid.).

The Disability Arts Movement centres on the social model of disability (Gosling, 2006), aiming to ‘celebrate difference and produce its own disability culture’ (Oliver, 1996, p.124 cited in Kikabhai, 2018, p.77). It argues that disability arts are ‘art made by disabled people which reflects the experience of disability’ (Sutherland, 2005), and that these creations are serious and intentional, not to be viewed as a form of therapy (ibid.). However, Got and Cheng (2008) contested that for many years, activities involving the arts have been a popular form of therapy used in hospitals and institutions in Western countries to treat people with developmental disability [*sic*]. The success of this medium has prompted research to show its relevance in improving the quality of life for people labelled as such, who now have longer life expectancy and can live within

the community (ibid.). Studies involving disabled people in, for example, Hong Kong (Got and Cheng, 2008), and Canada (Lister, et al., 2009) in art-based activities as a form of therapy have produced positive outcomes in areas of self-esteem, social integration skills, as well as their creativity, thus leading to personal growth and better quality of life.

In Hong Kong, Arts with the Disabled Association was set up in the 1980s to emphasise ‘Arts are for Everyone’ (ADAHK, 2019). Operating as a non-governmental organisation, the association promotes equal opportunity for disabled people to participate in and enjoy the arts within an inclusive society and sets out to educate the general public about the necessity for the disabled people to be engaged in the arts (ibid.). But here in Macao, there is an absence of similar projects to serve its own group of disabled citizens.

2.8 Research Questions

In this chapter, various medical, social and educational issues relating to instrumental music and learning difficulties, with specific focus on DS are discussed. To my knowledge, little has been researched into Macao’s population with DS in relation to music pedagogy generally, and teaching the piano specifically; hence a population research gap is identifiable (Miles, 2017). Furthermore, perspectives of existing research on DS tended to be dominated by the medical model of disability; therefore, the purpose of this dissertation is not only to address the ‘population gap’ (ibid.), but also to incorporate the social model perspective.

In view of the various literature discussed and the intent of my research objective, I propose four research questions to underlie the study. Based on the knowledge that music teachers in Macao have little or no training to teach students with SEND because of the absence of relevant courses in the city (§2.5), it is necessary to find out whether or not the teacher sample has been trained in any way and how they felt about teaching students with DS before participating in this research project. It would be interesting to see if they have a preconception of the students that is influenced by the medical model of disability. Therefore, the first research question (RQ) is:

RQ1: What are the experiences and perceptions of piano teachers when teaching students with DS in Macao?

As discussed (§2.4.2), Thompson's (2018) presentation of the four traditional models for learning the piano may seem to be the norm for non-disabled piano students, but they may not be all applicable to disabled students. McAllister (2012) also suggested that for students who are labelled as having learning difficulties, the traditional modes of instruction may not be beneficial. To facilitate instrumental music learning for disabled students, various educators have devised adaptable piano/instrumental pedagogies (§2.6), and Pickard (2019) has demonstrated the effectiveness of tailor-made interventions. Yet, drawing from the literature and personal experience, I have identified that many instrumental teachers in Macao lack awareness of different pedagogies that might be better suited to students with DS. Therefore, in this study, an intervention tutorial is included in which I introduce the teacher participants to the piano pedagogies presented by different educators. They then select whichever approach they consider workable to provide a tailor-made intervention for their student, and to test its

impact on the learning progress and the consequent outcome. This gives rise to my second research question:

RQ2: What are the teachers' experiences of the impact of support with piano pedagogy on their working with students with DS?

There often seems to be an association between children with DS and their musical aptitude (§2.4.1), although Selikowitz (2008) advised that each child with DS is unique and can have diverse interests other than music. I want to establish whether the student sample does love music and enjoy learning the piano. Therefore, the third research question focuses on the perspectives of students; to recognise their agency and to gather their thoughts about this musical venture and how the tailor-made interventions have impacted on their opinions:

RQ3: What are the experiences and perceptions of students with DS when being taught to play the piano?

Finally, as noted (§2.2.3), families that have a child with DS are said to be more harmonious and loving between family members (Abbeduto, et al., 2004; Fidler, Hodapp and Dyken, 2000; Hoppes and Harris, 1990). But as with most families with a disabled child, they often also endure social prejudice (Frizell, 2021; Skotko, Levine and Goldstein, 2011), and difficulties concerning the child's education (Rogers, 2007; 2013). I wonder what the impact on the family would be when the child with DS engages in the additional activity of piano learning. To gain information, I need to target the parents. Therefore, the fourth research question is directed at the parents of these piano learners with DS:

RQ4: What are the experiences and perceptions of the parents of children with DS in relation to piano lessons in Macao?

The objective of the study and these research questions directed the choice of methodology and research design, which are presented in Chapter 3.

Chapter 3: Methodology

3.1 Introduction

Set within Macao's educational and social context, this research explored the experiences and perceptions of the teachers, students with DS and parents involved in the piano teaching and learning process, and examined the impact of applying suitable piano pedagogies in the lessons. The chapter begins with my justification for the methodological framework of the study, followed by the description of the associated components of the research design, and the complete research process. The issues of ethics, validity, and reliability in qualitative research are also discussed.

3.2 Interpretivism and Qualitative Approach

Perren and Ram (2004, p.95 cited in Ponelis, 2015, p.537) advised that a research project should work within a paradigmatic framework as it would lead researchers to 'reflect upon the broader epistemological and philosophical consequences of their perspective'. As the intention of this study was to gain a holistic understanding of the participants' experiences and perceptions within private piano lessons, I considered the epistemological stance of interpretivism to be more appropriate because it is based on understanding the world from an individual's subjective point of view rather than from an objective observer's viewpoint (Farquhar, 2012; Ponelis, 2015).

Adopting an interpretivist stance could put my study at risk of being challenged for its subjectivity and considered lacking in scientific rigour (Dawson, 2010), but it can be contested that 'at an axiological level, the interpretivist paradigm is more concerned with relevance than rigour' (Ponelis, 2015, p.538), and that it is more important to

understand different cultural realities (Farquhar, 2012). By positioning this research study within an interpretivist research paradigm, I gained insight and in-depth information about the phenomenon through the ‘multiple perspectives and versions of truth’ constructed by the participants (Nguyen and Tran, 2015, p.25). To enable these different perspectives to emerge, I applied a qualitative approach, in which I made close-up and detailed observations of the participants in a natural setting and interacted directly with them (Creswell, 2007; Yin, 2009), consequently reaching a contextual understanding of the data that were collected qualitatively and that were not constrained by statistics (Mason, 2002; Nguyen and Tran, 2015).

Creswell (2007) stated that qualitative research is conducted when it is necessary to explore an issue or a problem. In turn, this exploration is necessary ‘because of a need to ... hear silenced voices’ (ibid., p.40). This was another reason for choosing the qualitative approach because my investigation involved individuals with DS. Under the medical model of disability, people with DS would have been among the groups marginalised in society and made silent in traditionally conducted social science research (Marshall and Rossman, 2006). Historical evidence indicated that children with DS were institutionalised forcibly because of their differences (Cooley and Graham, 1991), and parents were expected to submissively accept professional judgements and decisions concerning their children with DS (Harding, 2016). Thus, neither parents nor their children with DS had a voice. Since disability research emerged in the 1980s with the social model of disability serving as a core principle (Mambrol, 2018), disabled people were able to assert their influence to raise public awareness of social justice (Bolt, 2015; Mambrol, 2018). I acknowledged that in comparison with disability research, my own research might be considered rather traditional; and as I am neither a parent nor a disabled person, I cannot say that I felt

resonance with my participants except for the piano teachers. Still, I wanted to hear not only the voice of the teachers, but also the voice of the parents and the disabled students. Through qualitative interviews with all the participants, the students, as well as their parents, were no longer the 'passive objects of inquiry' (Marshall and Rossman, 2006, p.4). Instead, they had an opportunity to voice their opinions, to be heard and understood.

There are different methodological approaches for conducting qualitative research. To achieve the research purpose of gaining a holistic understanding of the lived experiences of the participants in this study within a piano learning environment, I acknowledged that I needed to be an observer of their interactions, but to have no control over how they were to behave or how their piano lessons were to progress. Therefore, I decided to use a qualitative case study approach because it is considered most suitable for research where the researcher cannot control the events or situations being studied (Yin, 2009). Furthermore, while most qualitative methodologies are associated specifically with certain philosophical positions that guide the research process (Harrison, et al., 2017), case study is philosophically versatile in that 'it is not assigned to a fixed ontological, epistemological or methodological position' (Rosenberg and Yates, 2007, p.447 cited in Harrison, et al., 2017, para.16). Therefore, I could align it with an interpretivist perspective which accepts the existence of multiple realities and meanings (Harrison, et al., 2017). In summary, my research was conducted within the methodological framework as illustrated in Figure 3.1, using a qualitative case study approach positioned within an interpretivist paradigm.

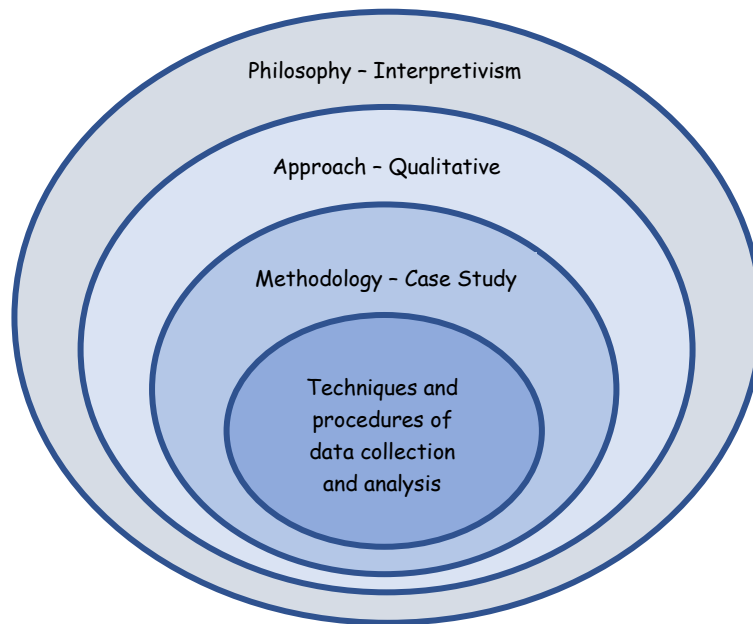


Figure 3.1: Methodological framework of the study

3.2.1 Case Study

A case study has been referred to as a strategy of inquiry, or a methodology (Denzin and Lincoln, 2005; Merriam, 1998), while Yin (2009) defined it as an empirical inquiry, emphasising the importance of context to the case. However, according to Stake (1995; 2005), a case study is not a methodology but a choice of what is to be studied within a specific bounded system which can be a context or a setting. The focus should be on the issue, or the case being studied, and not on the method used to conduct the study (ibid.). Regardless of the various descriptions, when conducting the case study research, I was fundamentally carrying out an in-depth exploration of an issue through a number of cases within a bounded system. Multiple sources and methods for data collection and analysis were used to provide a synergistic and comprehensive view of this issue (Creswell, 2007; Merriam, 2009; Stake, 2006; Yin, 2009), and among the ‘how’, ‘why’ and ‘what’ research question formats, I focused on the ‘what’ research

questions to reach an understanding of the issue from the participants' perspectives (Creswell, 2007; Mason, 2002; Merriam, 2009; Stake, 2006; Yin, 2009).

The intent of the case analysis determines a researcher's choice about the type of case study design of which there are three variations: the intrinsic case study, the instrumental case study, and the collective or multiple case study (Creswell, 2007; Stake, 1995; 2005). A collective case study was opted for in this research, and it consisted of four cases, which is considered a workable number (Eisenhardt, 1989). Although I was to explore a single issue, which was the piano teaching and learning related to children with DS, I wanted to gain different perspectives through the four cases (Creswell, 2007). The unit of analysis that formed the basis of each case was a triad of piano teacher, parent, and student with DS (Yin, 2009). As the cognitive development of children with DS could depend on many internal and external variants (Couzens, Haynes and Cuskelly, 2012; Määttä, et al., 2006), each case offered differences in terms of the student's behaviours and learning abilities, and how they would interact socially. These differences would influence each teacher's decision on teaching approaches. Because of the diversity, I wanted to understand individual cases better, thus each case was intrinsic in intent (Creswell, 2007; Stake, 1995; 2005). Yet, each case was also an instrumental case study because its purpose was to help me gain insight into the issue I wanted to explore (Creswell, 2007; Stake, 1995; 2005). The instrumental case study was extended to multiple cases (Stake, 1995; 2005), thus making this research a collective case study.

In conducting this intrinsic, instrumental, and collective case study, I was expected to provide a thick description through detailed observations (Mason, 2002). 'Thick description' was a term adopted by Geertz (1973) to characterise his own approach to

ethnography. Creswell (2007, p.73) argued that in ethnography, the intent is to establish how the culture works; therefore, ‘the entire culture-sharing group in ethnography may be considered a case’. This signifies the need for a thick description when doing case study research, in which the goal is ‘to illuminate the characteristics and particularities of the case in question’ by in-depth examination (Dawson, 2010, p.943). Through a thick description, I recorded not only what I could see and hear on the surface, but also the participants’ tone of voice and facial expressions (Denzin, 1989), consequently making thick interpretation possible of the situation within each case (ibid.). Furthermore, this thick description enables readers to evaluate the degree of transferability of my findings to their own case studies (Guba and Lincoln, 1989, p.241 cited in Gomm, Hammersley and Foster, 2000, p.100).

3.3 Research Design

The design of this research involved adopting a qualitative case study framed by an interpretivist paradigm (Creswell, 2009) to examine a specific phenomenon. To proceed, I needed to decide on the number of cases, the sampling of participants, and the techniques for data collection. Since I was conducting a collective case study, which uses the logic of replication (Yin, 2009), I replicated the procedures for each case (ibid.).

3.3.1 Sample Selection

For this collective case study, four cases were to be examined, each with a triad of participants: a piano teacher, a beginner piano student with DS and one of the student’s parents. Since Macao was the backdrop for this research, I approached the Macau

Down Syndrome Association where I am a voluntary piano teacher and obtained permission to recruit potential participants via its network.

I was aware that the process of case selection should not be an act of randomness (Eisenhardt, 1989), and that each case should be chosen for its relevance to the research questions (Carson, et al., 2001 cited in Ponelis, 2015, p.540). Thus, I used a purposive (or purposeful) sampling procedure to select a sample from which I could learn the most (Merriam, 1998). The purposely selected sample groups provided me with data that were rich in information relevant to the research, thus I was able to gain a better insight into, and an in-depth understanding of the phenomenon that I wanted to examine (Patton, 2002). Since this study focused partly on the teaching of the piano to students with DS, the choice of the teacher participants was limited to those who were active as private instructors at the time of research. They also needed to have students with DS who were beginner learners, so that I could examine how they introduced piano playing to the students and how the students responded to the teaching approaches. In addition, because the cognitive development is said to vary in individuals with DS (Couzens and Cuskelly, 2014), I specifically requested the teachers to select from among their students with DS, a learner who would be able to communicate in an interview setting to ensure the availability of spoken data. The selected students, who were aged between six and eight, and had been learning the piano for two to six months, fulfilled the criteria. As for the parent sample, it was essential that these students' parents were willing to take part, because their role was equally important in the research: I wanted to explore how they involved themselves in their child's piano learning, and to determine whether the effect of their involvement coincided with the findings in research that emphasised the importance of parental involvement in children's music

education (e.g., Briscoe, 2016; Creech and Hallam, 2003; Davidson, Sloboda and Howe, 1995; Margiotta, 2011).

3.3.2 Setting

Macao is quite a small city, so for the participants, all the locations for this research were within walking distance or could easily be reached by local transport. Every meeting and interview was held at the Macau Down Syndrome Association, conveniently situated in the city centre (McGrath, Palmgren and Liljedahl, 2019), and where the participants would visit regularly. The specific room chosen provided a comfortable setting that was free from interference and noise, which was crucial especially when conducting interviews (ibid.). The piano lessons during the research period took place at their usual venue to avoid any disruption or unrest.

3.3.3. Instrumentation for Data Collection

The process of data collection was conducted through methodological triangulation (Denzin, 1989), combining the use of interviews, observational field notes, and diaries. Each data collection method gave a different picture and aspect of reality (Denzin, 1989; Stake, 2006), and together, they enabled me to recognise the complexity of the situation under examination (Stake, 2006).

3.3.3.1 Interviews

I decided to conduct qualitative interviews because they would give me an opportunity to understand my participants' individual subjective perspective on piano teaching and learning in a one-to-one situation (McGrath, Palmgren and Liljedahl, 2019). From their

interviews, I would be able to explore their unique experiences and perceptions relating to the phenomenon (ibid.). Another reason for using interviews in this research was the anticipation that some benefits would stem from the mutual understanding and collaboration between all parties involved. Cuckle and Wilson (2002) stated that the social lives of young persons with DS could be better understood through personal interviews; therefore, I felt that there might be a possibility for this strategy to bring about further ideas and suggestions about DS that have not previously been encountered.

Qualitative interviews can be in-depth, semi-structured or structured (Ary, Jacobs and Razavieh, 2002; Mason, 2002). I opted for semi-structured interviews because of their close association with the interpretivist tradition (Mason, 2002), and I used open-ended questions to allow the interviewees to relate their experiences and perceptions freely (Ayres, 2008a; Mason, 2002). I intended to have two interviews per participant, and in preparation, I drafted two sets of three written interview guides (Ayres, 2008a; Mason, 2002): one set for the preliminary interviews (Interview 1) and one set for the final interviews (Interview 2). The open-ended questions in these guides were based on the research questions and listed in the order that was to be put to the teachers, the parents, and the students (See Appendix 4).

As the participants in this research are of Chinese origin and are Cantonese speakers, all the interviews were conducted in Cantonese to avoid potential linguistic misunderstandings. Before I began the actual interviews, I conducted pilot interviews to assess the appropriateness of these questions, to be discussed below (§3.4.2). Interview 1 then took place prior to the commencement of the fieldwork, and Interview 2 took place a few days after the last scheduled piano lesson. Each interview lasted

approximately thirty minutes, which I considered sufficient for the interviewees to express their thoughts and feelings without feeling over-burdened, and their willingness to share these sentiments was strengthened by the familiar and informal surroundings of the setting.

The students were accompanied by their parents during the interviews. To have the parent present was not only for the ethical reasons discussed below (§3.5.4). I acknowledged that the parent would be more familiar with their child's own unique utterances or expressions which I, as an outsider, might not understand. Furthermore, according to research (e.g., Kumin, 2006; Martin, et al., 2009), children with DS are generally weaker in expressive language, and their speech may not be intelligible; therefore, it was necessary for the parent to be there as interpreter whenever I could not comprehend the student's response (Cuckle and Wilson, 2002; Kelly, 2020). However, I realised that the parent's presence in an interview could potentially influence the child's responses (Gardner and Randall, 2012). Since I had to ensure that the students were given the opportunity to express their own opinions as much as possible on both occasions (Cuckle and Wilson, 2002), I, therefore, asked the parents to avoid unnecessary verbal assistance during the interviews.

Since open-ended questions may cause the conversation to diverge from the pre-set interview guide, recording the interview is therefore recommended (Cohen and Crabtree 2006). With the participants' approval, the interviews were audio recorded, which was convenient for clarifying unclear expressions through repeated listening. During the recording, I wrote only a minimal quantity of notes on issues that needed further explanation or discussion. This allowed me to focus on developing rapport and maintaining a flow of dialogue with the interviewee (ibid.).

3.3.3.2 Observation of Participants (Moderate Participation)

Kawulich (2005) pointed out that educational research adopts observation extensively as a method for collecting qualitative data. For this research, placing myself among my participants allowed me to understand them better (Peshkin, 1988), and to develop an objective and accurate understanding of the phenomenon being examined (DeWalt and DeWalt, 2002). It was essential that I observed how the teachers practised the chosen pedagogies and how the recipients reacted, especially when the parents themselves were not music specialists, thus they would not be able to comment on the pedagogical aspects of the lessons.

However, before observation took place, I needed to be conscious of the problems with observer bias, in which errors could unconsciously occur as I was gathering observational data (Lockyer, 2008). How I interpreted what I saw could be influenced by my own schemas and expectations (*ibid.*). Therefore, it was essential that I did not commit to any set theoretical model (Yin, 2009), but to cross reference with the data gathered from interviews and diaries to help reduce these biases (Lockyer, 2008), as well as to assess their validity (DeWalt and DeWalt, 2002). It was also possible that, when under observation, my participants could have changed their behaviour or disguised their actions because of my presence (Lockyer, 2008), and such observer bias would be more difficult to remove (*ibid.*). This has deterred me from videoing the lessons, as that would probably induce biases from the participants (Robson, 2011). Furthermore, the presence of a camcorder might distract the students from their lessons, consequently disrupting the whole observation process (*ibid.*). I also believed that unless multiple cameras were used, it would be difficult to capture all the elements

within the lessons such as the participants' expressions, or the teacher's and student's hands on the piano keys.

Observation in each of the four case studies in this research was set up for three alternate piano lessons out of the five lessons scheduled. In each of these three alternate lessons, I arrived at the setting before the student and parent participants, so that observation could begin from the moment they entered. Although my objective was to observe and make field notes, I considered that I have exercised, to use Spradley's (1980, p.60) terms, 'moderate participation', rather than 'passive participation' (ibid., p.59). 'Moderate participation' means, as elaborated by DeWalt and DeWalt (2002), that I, as the observer, was present at the setting without actively participating in the activities of the observed. Yet I was identifiable as the researcher. This is different to 'passive participation', in which the researcher takes the role of a 'bystander' or 'spectator' (Spradley, 1980, p.59), but more significantly, the participants may not realise that they are being observed (DeWalt and DeWalt, 2002). In this research, however, all the participants were informed in advance of when the observations were to take place. The degree of 'moderate participation' corresponded to the 'observer as participant' stance described by Gold (1958 cited in Kawulich, 2005, para.21), in that my main role was to collect data in order to have a better understanding of the topic of this investigation. This observational stance is considered the most ethical approach because the participants were aware of my observation activities, and they understood that I was present at their piano lessons principally as an observer to collect data and not as a participant in their activities (Kawulich, 2005, para.22). During the lesson, I seated myself at the back of the class and noted down what I saw and heard. Although I did not actively participate in their activities, nor did I initiate any conversation, I did interact with the participants whenever they voluntarily approached me, such as on one

occasion when I was invited to watch a video that a parent took of her child playing the piano, or when the teachers updated me with the development of the lessons where I did not observe. Such involvement had enabled me to gather additional information.

3.3.3.3 Field Notes

Field notes are essential for capturing the data collected during observation (Kawulich, 2005). In preparation for making observational field notes, I created a template (See Appendix 5) by adopting the matrix recommended by Spradley (1980, p.78) in which there were three basic parameters: space, actor, and activity, with further six dimensions: object, act, event, time, goal, and feeling. By following this guide, I was able to provide descriptive information on the factual elements in the piano lessons, including the setting, the reactions and interpersonal relationships of my participants, and the accounts of events (Ary, Jacobs and Razavich, 2002; Marshall and Rossman, 2006; Spradley, 1980). I noted down non-verbal expressions and gestures as these would give me a better understanding of the situation (DeWalt and DeWalt, 2002; Spradley, 1980). The field notes also included reflective information, recording my own feelings about and reflections on matters that had impressed on me during the observation (Ary, Jacobs and Razavich, 2002; Spradley, 1980). I did not consider the importance of these reflective comments at that moment, as I could not be certain whether they would be useful (Eisenhardt, 1989).

The writing of my field notes occurred not only during observation. After each observation session, the process of mind training began (DeWalt and DeWalt, 2002). I replayed in my mind the interactions between the participants and sequence of events for different details to emerge and recounted these in field notes (ibid.). Recalling

additional information from observation made my set of field notes more comprehensive.

3.3.3.4 Diaries

I decided to include the use of diaries because this would enable the participants to record their own behaviours, activities, and experiences over a period of time (Krishnan and Lee, 2002 cited in Yi, 2008, p.1). I felt that diaries would be helpful in recalling forgotten events (Corti, 1993) and sharing personal views, which can sometimes be difficult to express verbally, and thus may be withheld during interviews (ibid.).

Only the teacher and parent participants in this research were given a notebook to use as a diary. I did not request the student participants to produce a diary not because it was unrealistic to ask them to write coherently due to their inadequate visual-motor, and linguistic skills as suggested by Patton and Hutton (2016), nor was it because of their possible difficulties in manipulating a pencil with their hands and fingers due to hypotonia (Newton, 2004; Sacks and Buckley, 2003). Rather, my concern was that because the students were expected to practise the piano daily, they might feel overwhelmed by the additional workload. However, I had encouraged them to convey their thoughts to their parents.

In the diaries, I asked the teachers and parents to record their perceptions and thoughts about the students in relation to the piano lessons and practices over the five weeks of research. These diaries were then submitted to me for analysis. Although I believed that their contents would enhance the interview data and provide a clearer picture of their writers' behaviour and experiences (Corti, 1993), I was aware of the possibility that some of the entries might be selective, and that unless the participants completed

the entries soon after the lessons or practices, key concepts might be forgotten or might not be totally accurate (ibid.). Therefore, after studying them, I compiled related questions to be clarified in the final interviews to increase the data's trustworthiness (ibid.).

3.4 Collection of Data: Timeline and Procedures

The procedures for the collection of data followed the pattern as illustrated in Figure 3.2, and the timeline for their collection spanned a period of five months, from July to November 2019.

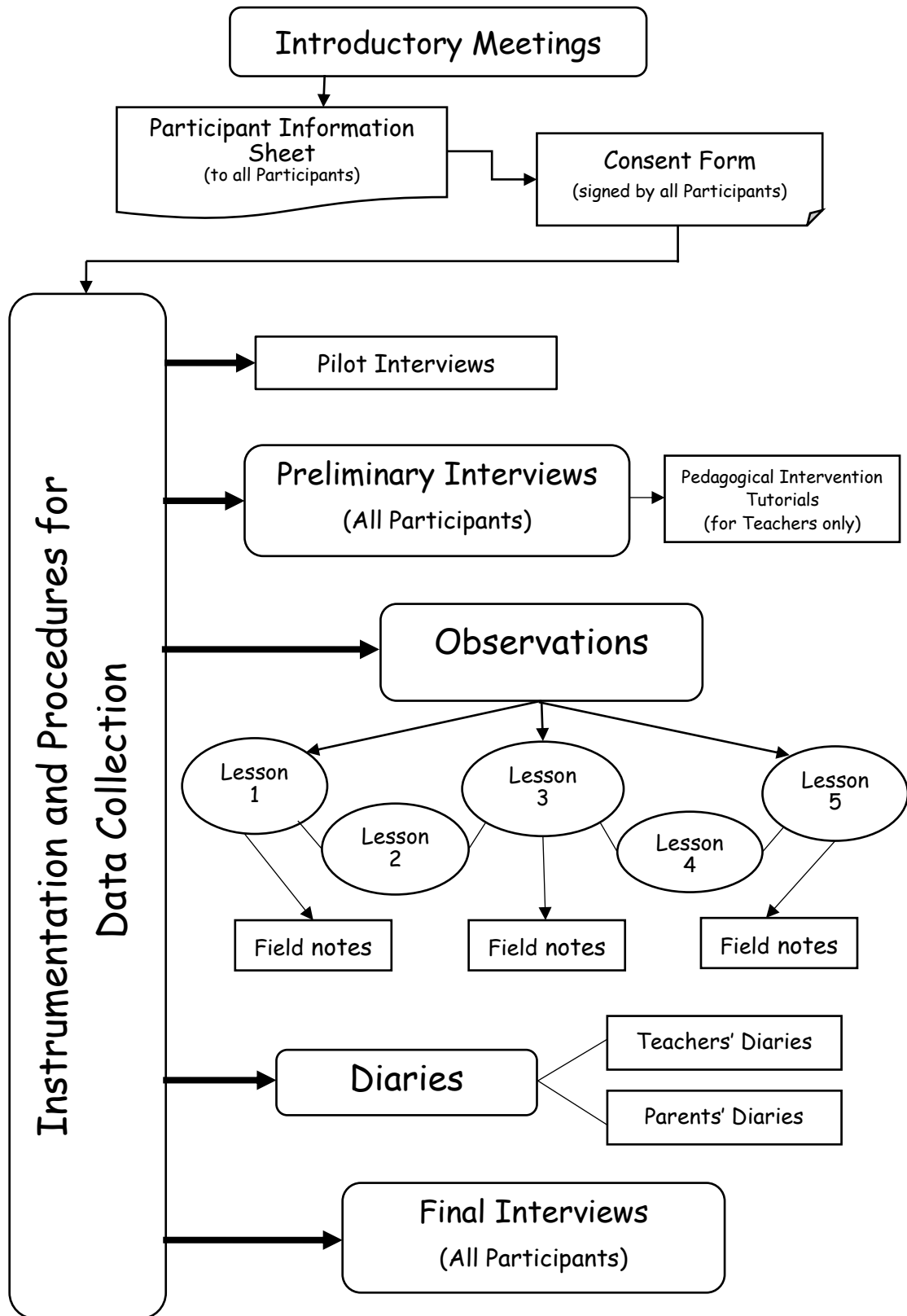


Figure 3.2: Instrumentation and procedures for data collection

3.4.1 Introductory Meetings

After recruiting the targeted participants during the summer months of 2019, I arranged introductory meetings in early September to meet, separately, each teacher, and each pair of parent and student to explain the purpose and procedure of the research. After my introduction and explanation of the research, the handing out of the participant information sheet and the signing of the consent form followed the procedures as described in the section on Ethical Considerations (§3.5.2). At the end of the meetings, dates and times were scheduled for the preliminary interviews.

3.4.2 Pilot Interviews

It was important that I carried out a pilot study to assess the appropriateness of the set interview questions (Majid, et al., 2017). Through piloting, I was able to gain some experience and skills in conducting semi-structured interviews within a specific time frame, and to recognise any need for modifications (ibid.).

A small-scale pilot study was arranged a week prior to the scheduled preliminary interviews. I approached another piano teacher through the Macau Down Syndrome Association. Together with her student with DS, and the student's parent, I conducted a pilot interview with each of them. With Interview 1, I was able to treat it as an actual interview, adhering to the questions set in the guides, and conscious of the thirty-minute time frame. I did not make a recording of these interviews but noted down problems that might arise in each question. As this group would not be going through the actual five-week research period, we discussed the set questions for Interview 2, and I invited them to give comments. The piano teacher in this pilot was experienced in teaching

students with DS, so she was able to share with me her opinions derived from experience, and the parent was asked to offer their views on behalf of the student.

Several issues were raised from the feedback gathered from this pilot study: I had to remind the teacher and parent participants that they did not have to try and give positive responses in order to please or avoid giving negative responses for fear of offending anyone. I also needed to reassure them that whatever they said would remain anonymous and not be disclosed to another person. With the student participants, I needed to be aware that they might not have the concept of time, so questions concerning with ‘how long’ or ‘how much’ might not yield an expected form of response, and I had to allow them to express ideas in their own way. Moreover, this pilot study highlighted the importance of the parent’s presence because the student sometimes needed to be reminded or encouraged by the parent before responding to the questions.

3.4.3 Preliminary Interviews

In mid-September 2019, preliminary semi-structured interviews following the interview guides for Interview 1 were conducted to gain background information (See Appendices 8-11 for samples), and the participants were reminded at the start that the interviews would be audio recorded.

3.4.4 Pedagogical Intervention Tutorials

Although according to Crappell (2019), beginner piano students often learn under the ‘master-apprentice’ model, I needed to investigate how the process of piano learning would be affected by the use of appropriate piano pedagogies; therefore, the

participating teachers were required to use in the lessons one or more of the piano pedagogies considered suitable for teaching students with DS. The pedagogies, which were reviewed in Chapter 2, were researched by the following educators: Velásquez (§2.6.1), who emphasised the use of iconic/symbolic representations; Suzuki (§2.6.2), who corresponded the learning of instrumental music to the acquisition of one's mother tongue; Cross (§2.6.3), whose organisation 'Melody' has designed innovative music notations; Cantan (§2.6.4), who used colour coding in her teaching materials; and Aschenbrenner (§2.6.5), who made use of numbers in his teaching. In Macao, it is to my knowledge that these pedagogies have not yet been widely used, nor were they familiar to all the teachers; it would be interesting to see if these approaches could accustom the students with DS to piano playing more easily and achieve the expected outcomes. To help the teachers prepare, I compiled intervention sheets summarising these five approaches (See Appendix 3), and arranged tutorials to introduce them to each teacher prior to the five scheduled lessons.

At the end of each teacher's preliminary interview, a meeting to discuss these pedagogies was scheduled for the following week. I planned to give intervention tutorials to the teachers individually because not only were there differences in the cognitive and physical conditions between their students, but also, I did not want the teachers' opinions and decisions be affected by their peers if I were to conduct the tutorial in a group. In each intervention tutorial, which lasted approximately ninety minutes, I presented the teacher with a copy of the intervention sheets; explained the teaching methods as summarised and clarified any uncertainties raised by the recipient. In addition, I related, to each, the suggestion that piano teachers, especially when teaching beginner students, should adopt 'a preventive rather than a curative style of teaching' (Crappell, 2019, p.181) because, as stated by Clark (1992 cited in Crappell,

2019, p.122), ‘creating situations that help students avoid ... problems is the very pinnacle of good teaching’.

Once the teacher had gathered the basic knowledge of these pedagogies, we discussed their suitability. I asked the teacher to consider them in view of the strengths and weaknesses, as well as the physical and cognitive conditions of her student, and select any of them that she thought appropriate to apply in the lessons. Before each meeting ended, each teacher had made her choice(s). Here, I stressed the importance of planning the lesson content and teaching strategy carefully, as this would allow her to work proactively instead of reactively to achieve efficiency and effectiveness (Crappell, 2019). The pedagogies chosen by the four piano teachers were as listed in Table 3.1.

Teacher⁷	Researcher/Educator	Pedagogy
Ms An-ling	Aschenbrenner	Piano by Number
Ms Bai-xue	Suzuki	The Suzuki Method
Ms Chi-yan	Velásquez	Iconic/Symbolic Representation
Ms Da-fan	Cantan Cross (Melody Organisation)	Colourful Keys Alpha Notations Improvisation

Table 3.1: Chosen pedagogies for experimentation

3.4.5 Observation of the Piano Lessons

All four piano teachers were asked to apply their chosen teaching method(s) to instruct their students for a succession of five weekly lessons, each lasting thirty minutes. These five consecutive lessons began in October through to the beginning of November 2019, and having informed the participants in advance, I attended the first, third and fifth

⁷ The teachers’ names are pseudonyms. Reasons for assigning pseudonyms are explained in the section on Ethical Considerations (§3.5.3).

lesson in each group to conduct my observation. During observations and using the observation template, field notes were made to record the complete course of events and my personal reflections (See Appendices 8-11 for samples).

3.4.6 Teachers' and Parents' Diaries

The teacher and parent participants had to keep a diary during the five-week research period. In these diaries, the teachers recorded matters relating to the lessons and the students, and the parents wrote about their children's home practice. They were also encouraged to reflect on the whole experience and note down their perceptions of how the students seemed affected by the change of teaching strategy (See Appendices 8-11 for samples). These diaries were completed and given to me a few days after the fifth lesson.

3.4.7 Final Interviews

The final semi-structured interviews in line with the interview guides for Interview 2 were not conducted until the end of November 2019, allowing me the time to study the diaries in search for more interview questions to be added if required. The focus of these interviews was on the teachers' and parents' perceptions of any changes inside and outside the lessons when supported by the chosen piano pedagogies, and on how the students themselves felt about the modified lessons. Views on Macao's support for children with SEND in terms of general and music education were also expressed by the teachers and parents (See Appendices 8-11 for samples).

3.5 Ethical Considerations

Throughout the planning and conducting of my research, I worked within the frame of the ethical guidelines set out by the British Educational Research Association (BERA, 2011) to meet the requirement relating to the participants' consent, and the treatment of data in terms of storage, confidentiality and anonymity. Furthermore, the need for sensitivities towards the students with DS, the ethical issues concerning my observation of the participants, and points relating to the transcribing and translating of data were considered.

3.5.1 Safety, Security and Disposal of Data

Abided by BERA's (2011) guidelines, and clarified on both the participant information sheet and the consent form (See Appendices 1 and 2), I respected the participants' entitlement to privacy by making sure that all their data were treated with confidentiality and anonymity; and kept in a safe and secured location in my studio, accessible to myself alone. These included the signed consent forms, interview transcripts and audio-recordings, diaries (originals and translations), and the field notes. Furthermore, in accordance with the Data Protection Act (1998), these data would be used solely for this project and would not be kept for longer than is necessary. For that reason, I decided to retain them until I had finally achieved my doctorate, after which, I would dispose of them by shredding the paper documents, overwriting the audio-recordings and deleting related files on my computer.

3.5.2 Voluntary Informed Consent

The process of selecting potential individuals from the Macau Down Syndrome Association to participate in this research commenced after an approval was granted by its director. The selected participants were separately invited to an initial meeting where they were each given a copy of the participant information sheet, written in formal Chinese for either the teacher or the parent and child⁸. Once the potential participants, after due consideration of the nature and procedures of the research, agreed to take part, they were required to complete and sign a research ethics consent form. During this initial meeting, the child with DS was accompanied by their parent throughout. This was because not only would the parent be a participant, but also because I needed their collaboration and approval of their child's participation, as I could not determine how much I could expect the child to understand their role in the project or to agree voluntarily to participate (BERA, 2011). Furthermore, such arrangement was in accordance with the General Data Protection Regulation (GDPR) procedures in which parental consent must be obtained for children under the age of thirteen (CIPL, 2018).

Two versions of the consent form were prepared for this occasion: one for both the teachers and the parents (See Appendix 2(A), p.214), and one designed for the students with DS (See Appendix 2(B), p.216). The latter had the added statement stating that I would carefully explain the content to the student with their parent present, and which required to be signed by both student and parent. These consent forms were translated into formal Chinese before they were presented to the participants. When I explained

⁸ See Appendix 1 for the English version of Participant Information Sheet (A) for teacher, p.208, and (B) for parent/child, p.211.

the content to the student in clear and plain language expected under the GDPR (CIPL, 2018), the parent would at times repeat or rephrase what I said to make sure that the young person understood all the ethical issues.

3.5.3 Confidentiality and Anonymity

As mentioned above (§3.5.1), the confidentiality and anonymity of data were ensured. To honour the participants' entitlement to be anonymous (BERA, 2011), each teacher and student participant was assigned to a pseudonym. I first asked the student in each case study to choose the fruit of their choice as the name for their group. Consequently, I had Group Apple, Group Banana, Group Coconut and Group Durian, and the pseudonyms within each group began with the same initial letter as an indication of group association. These pseudonyms were agreed to by the corresponding participants (Table 3.2). As it is a customary practice within after-school activity classes here in Macao to address a parent not as Mr X or Mrs X, but literally as 'student's name + dad/mum', for example, 'Susan Dad'/'Jack Mum', I have adhered to this tradition.

	Group Apple	Group Banana	Group Coconut	Group Durian
Teacher	Ms An-ling	Ms Bai-xue	Ms Chi-yan	Ms Da-fan
Student	Au-na	Bu-ran	Chao-chao	Dan-yao
Parent	Au-na's Mum	Bu-ran's Mum	Chao-chao's Mum	Dan-yao's Mum

Table 3.2: Pseudonyms assigned to individual participants

3.5.4 Sensitivities Towards Students with Down Syndrome

It has been advised that when children engage in a research project, cautious steps are needed to ensure their well-being (BERA, 2011; CIPL, 2018; O'Reilly and Dogra, 2017). Besides the ethical issues on informed consent, confidentiality and anonymity

discussed above, further consideration was taken during the interviews with the student participants in this research. I purposely had the student's parent present at the scene of the interviews. Apart from the fact that I needed the parent there to help me understand the student's expressions at times as mentioned above (§3.3.3.1), it was ethically necessary because these children were under the age of thirteen (CIPL, 2018). Furthermore, O'Reilly and Dogra (2017) advised that younger children tend to prefer having and feel comforted by the company of someone familiar, and the parent's presence will achieve a calming effect (ibid.). It is also beneficial for the interviewer because the parent's presence can encourage the child to engage in the interview, allowing the interview to flow without difficulty (ibid.).

To further ensure that each student would feel less anxious about being interviewed, I tried to establish rapport by chatting casually to them at the start (Irwin and Johnson, 2005; O'Reilly and Dogra, 2017). When there is sufficient rapport, the interview could become a 'personal sharing with a trusted friend' (Morse and Field, 1995, p.90 cited in Irwin and Johnson, 2005, p.823). As mentioned above (§3.3.2), the room in which the interviews were held was at the Macau Down Syndrome Association where the participants frequented. It was particularly important that the surrounding was familiar to the student participants for them to feel relaxed (O'Reilly and Dogra, 2017). Furthermore, the room was spacious enough to allow the child to move around as necessary, for Irwin and Johnson (2005, p.825) observed that 'the natural world of many children involves movement and activity, and to attempt to have them sit and focus can create unnecessary strain'. In Interview 1, I intentionally began with a few simple questions, asking them their name, age, and school to make them feel more at ease with the subsequent questions (McGrath, Palmgren and Liljedahl, 2019);

moreover, I deliberately sat at the same level as them during the interviews to avoid them feeling intimidated (O'Reilly and Dogra, 2017).

3.5.5 Observation of Participants

As explained above (§3.3.3.2), taking the role of an 'observer as participant' as my approach to observation was most ethical because all the participants knew exactly why I was in their piano lessons. At the same time, I decided against videoing the piano lessons not only because such act would probably induce biases from my participants (Robson, 2011), but also because ethically, it would be more difficult to protect the participants' confidentiality and anonymity with video data (ibid.).

I also realised that my teacher participants might feel nervous and pressured when being observed, as they might think that their professionalism was under scrutiny (Borich, 2008 cited in Lasagabaster and Sierra, 2011, p.450), but I reassured them that I was not there to question nor judge their teaching. As the students and their parents were also informed of my presence and intentions beforehand, they all later reported that they did not feel overly anxious.

3.5.6 Transcribing and Translating of Data

The transcribing of the recorded interview data into Cantonese scripts was straightforward, and it fulfilled the basic requirement of being a verbatim account of all verbal as well as non-verbal utterances (Braun and Clarke, 2006). When these transcripts were translated into English, those belonging to the students were done as closely as possible to the original to reflect the students' language and communication abilities. However, the translations of the adults' transcripts, as well as their diaries,

were not exactly direct translations. I amended some wordings, sentence structure and so forth as necessary to overcome the linguistic and grammatical discrepancies between the two languages to make the translation more readable. In the light of such amendments, and my awareness that I might not have captured certain nuances in what had been said, it was important that these translations were presented to the participants to member check.

3.6 Data Preparation and Analysis

Merriam (1998, p.178) defined data analysis as the ‘process of making sense and meaning from the data that constitute the finding of the study’. During this process, a qualitative researcher will try and interpret the phenomenon in terms of the meaning intended by the participants (Creswell, 2009). From the data collected in this collective case study, I tried to discover the participants’ experiences and perceptions in relation to piano teaching and learning in Macao, and the impact of appropriate pedagogical support for students with DS. These concerns formed the bases of my research questions raised in Chapter 2 (§2.8). Yet, I realised that when I came to analysing the data, my interpretation might be constrained by my own experience and understanding that could have been influenced by the medical model and the general cultural conditioning of Macao. But having reviewed literature on the social model of disability, I endeavoured to incorporate its perspectives to try and present an unbiased interpretation.

With reference to the collected data, I first gave detailed descriptive reports on each case (Creswell, 2007; Eisenhardt, 1989) because the emphasis should be predominantly on understanding the case itself (Stake, 1995). As stated by Stake (1995, p.8), ‘the real

business of a case study is particularisation, not generalisation'. This would enable me to take a particular case and come to know it well on its own, not in relation to the other cases (ibid.). Therefore, I studied each case separately and presented findings that were specific to the case. (The reports on the four cases are presented in Chapter 4, the Findings chapter). Then to gain answers to the research questions, I conducted a cross-case analysis in which I examined and compared the four case studies in search of commonalities and differences between them (Creswell, 2007; Mathison, 2005; Stake, 2005) (See Chapter 5, the Discussion chapter). I adopted a thematic analysis approach in which I analysed and reported the themes identified within the data (Braun and Clarke, 2006). Through this analysis, a unified description of the common themes from the data across the cases was produced (Merriam, 2009), with each theme capturing something important that reflected the issues that the research questions aimed to address (Attride-Stirling, 2001; Ayres, 2008b; Braun and Clarke, 2006).

With respect to thematic analysis, the themes within the data were identified through an inductive process, which was data-driven (Braun and Clarke, 2006). Before the current study, no research has yet been conducted concerning students with DS in Macao learning the piano, so no prior themes have been established; therefore, any themes identified were linked to the data that were coded without the constraint of any pre-existing or preconceived coding frame (Braun and Clarke, 2006; Patton, 2002). After careful repetitive examination of the data during the inductive process, a comprehensive set of themes was established (Creswell, 2007).

Before I could report on the findings or begin to analyse the data, I needed to prepare the data by following Phase One of the six-phase guide provided by Braun and Clarke (2006) for conducting thematic analysis:

Phase One: Familiarising yourself with your data

In this first phase, I familiarised myself with my data through immersion (Braun and Clarke, 2006). I listened to the audio recordings of the participants' interviews and transcribed the contents into Cantonese before translating into English. I repeatedly checked the transcripts against the recordings for accuracy (ibid.) and added my notes made during the interviews to the final translations. With the preliminary interviews (Interview 1), I began transcribing as soon as they were completed in September 2019, then had their Cantonese transcripts and English translations approved by the participants. With the final interviews (Interview 2), it was towards the end of November 2019. I also read through the teachers' and parents' diaries that were written in Cantonese before making an English translation, cross-checking for accuracy. This was done soon after they were submitted and before the final interviews took place. The translations of these diaries were also reviewed and approved by the participants. My observational field notes were read and re-read to make sure nothing was omitted from my recollection. According to Riessman (1993), transcribing is an excellent way to start familiarising with the data; moreover, Braun and Clarke (2006) considered it as an interpretive move to creating meanings during the process. Since Braun and Clarke (2006) also recommended that writing should be an integral part of the analysis and should begin at phase one by noting down initial ideas and potential coding schemes, I began to create a list of ideas that might be appropriate for coding in relation to the research questions (See Appendix 6).

The approved transcripts and translations were then forwarded to two academic peers who would review them before a virtual meeting for debriefing was scheduled towards the end of December 2019. From January 2020 onwards, after all the written data had

been finalised, I began to prepare descriptive reports on the findings in each case study and continued with the subsequent phases of analysis.

Phase Two: Generating initial codes

As with Braun and Clarke's (2006) understanding of Phase Two, I generated initial codes by 'coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code' (ibid., p.87). These codes had explicit boundaries to ensure that they were neither interchangeable nor redundant (Attride-Stirling, 2001). I studied each piece of data from the four cases, coding various quotations, phrases, or single words (ibid.). Each code incorporated various sub-codes that featured characteristics associated with specific case to facilitate comparison in the cross-case analysis. The coding was done by using coloured pens and markers to highlight data of similar ideas in the same colour (See coding samples in Appendix 7).

Phase Three: Searching for themes

With regard to Phase Three, I analysed the generated codes and considered which codes were to be combined to form an overarching theme (Braun and Clarke, 2006). As themes began to develop, an interpretive analysis of the data began to emerge (ibid.).

Phase Four: Reviewing themes

In connection to Phase Four, I reviewed and refined the developed themes through analysing the codes on two levels (Braun and Clarke, 2006). On the first level of analysis, I checked each theme against the code(s) and the corresponding data extracts to make sure a coherent pattern was identifiable (ibid.). The second level involved checking the themes against the entire data set. I read through the entire data set to

ensure that all the themes were connected to the data (ibid.) and were relevant to the research questions (Ayres, 2008b). The re-reading of the entire data set allowed me to code additional data that I might have missed (Braun and Clarke, 2006). After all the themes were reviewed and refined, I finished this phase with a thematic map of my data (ibid.).

Phase Five: Defining and naming themes

For me, Phase Five involved defining each theme, identifying its essence, and determining which research question it fits under (Braun and Clarke, 2006). I refined ‘the specifics of each theme ... generating clear definition and names for each’ to give readers an immediate sense of the focus of each theme (ibid., p.87). Eventually, the themes were finalised and appropriately assigned to each research question (Figure 3.3).

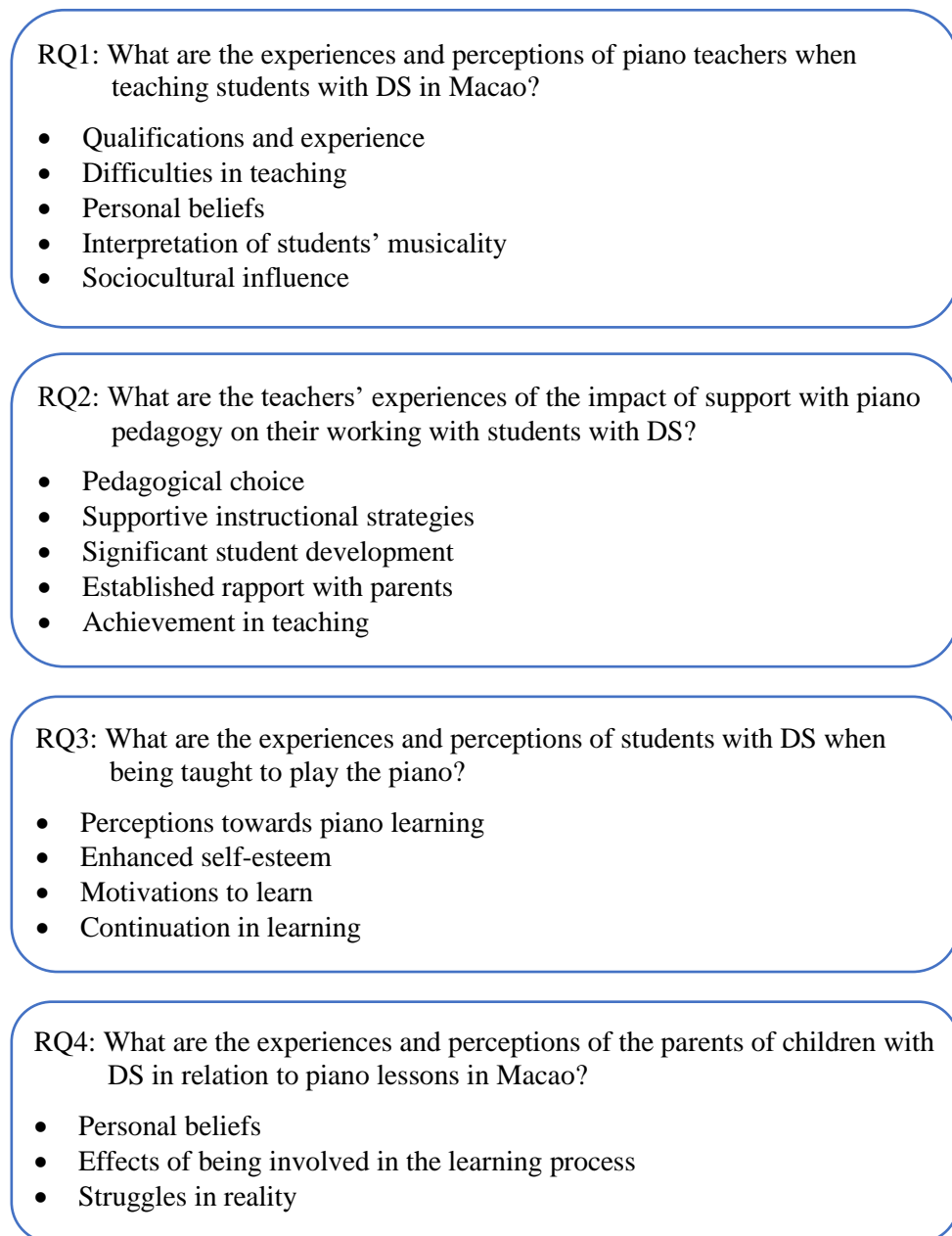


Figure 3.3: Themes assigned to the research questions

Phase Six: Producing the report

The aim of the final phase of this thematic analysis was to produce ‘a concise, coherent, logical, non-repetitive and interesting account of the story the data tell – within and across themes’ in relation to the research questions (Braun and Clarke, 2006, p.93). I analysed the generated themes, which were supported by extract examples from the

data (ibid.), and presented them in the form of a cross-case analysis report. Although the procedure for the thematic analysis was divided into phases, I did not simply move from one phase to the next in a linear progression, because the entire process should be recursive (ibid.). The phases were frequently reviewed to check that no relevant information had been overlooked, thus ensuring a comprehensive report.

3.7 Validity and Reliability

Carlson (2010, p.1103) stated that qualitative researchers should ‘mindfully employ a variety of techniques to increase the trustworthiness of the research they conduct’, and this trustworthiness is determined by the concepts of validity and reliability (Silverman, 2004). However, validity is regarded as more important and comprehensive because of the difficulties involved in its evaluation (Ary, Jacobs and Razavieh, 2002), while reliability is concerned with the results being consistent with the data collected (Merriam, 1998).

Several strategies were employed to establish the validity of this study. Webster and Mertova (2007) considered that validity rests on the research being well grounded and fully supported by the data collected. The data for this study were collected from interviews, observational field notes, and the adult participants’ diaries; moreover, these were gathered from not one but four cases, made possible by a collective case study. This triangulation of various sources and methods used to obtain data was one strategy to achieve validity (Carlson, 2010; Kawulich, 2005).

Member checking and peer debriefing were two other strategies used to address the validity issue. For member checking, the members, meaning my participants, were

given the opportunity to check the transcripts of their interviews and to verify their accuracy (Carlson, 2010; Stake, 2006). The teacher and parent participants were each presented with a copy of a) the transcripts, written in Cantonese, and b) my English translation of the Cantonese scripts after these had been approved. They were asked if they considered their responses had been precisely and appropriately reflected, and if they wished to make any amendments (Creswell, 2007). I also asked the student participants to go through their interview transcripts with their parents' help. Similarly, the English translations of the diaries that were written in Cantonese by the teachers and parents were also presented to them for member checking. As for peer debriefing, it is a process in which the researcher 'calls upon a disinterested peer ... to aid in probing the researcher's thinking around all or parts of the research process' (Nguyen, 2008, p.604). Recognising that an impartial peer could provide critical insight into my interpretations (ibid.), I invited two other people to consider my findings: one was a colleague, who was also a piano teacher, and the other was a fellow researcher with whom I had already discussed the ethical aspects (discussant) when preparing for the submission of my research proposal. Both peer debriefers are experienced in qualitative research, with background knowledge of teaching students with SEND. They reviewed my research process in terms of its methodology, design, and analysis; and assessed the relevance of my transcribed data and field notes in addressing the research questions.

The final strategy used to validate this study was to create an audit trail, which involved me keeping a record of all the documented components relating to this research for a substantial length of time (Carlson, 2010). The items in the audit trail included my transcribed and translated data, notes taken during the pilot interviews and observations, and audio-recordings of the interviews. All these items were stored away securely for

ethical reasons, but a selection of the written materials has been reproduced and presented as samples in the appendices section of this study.

Chapter 4: Findings

4.1 Introduction

This chapter presents the findings of the four case studies based on the individual case's data collected from interviews, diaries and observational field notes. Its purpose is to explore how the group of participants and their piano lessons in each case study were affected when supported by piano pedagogies. The description of each group, named Group Apple, Group Banana, Group Coconut and Group Durian, begins with a demographic profile of its participants, followed by an account of the learning environment and performance prior to the research. This information allows readers to gain an understanding of the people involved and the background situation. Each case study continues with the description of the findings during the five-week research period and concludes with my reflections on these findings.

4.2 Findings of Group Apple

4.2.1 Background Information

4.2.1.1 The Participants

Ms An-ling

Ms An-ling possessed a DipABRSM certificate and had been a full-time private piano tutor for five years. She did not have any professional training in special education, but she had some experience in teaching two students with SEND about whom she reflected: 'Teaching them requires much more patience than with other students' (Interview 1 – Ms An-ling, Line: 25). With no experience in teaching someone with

DS, she said she felt guilty and desperate about teaching Au-na and admitted: ‘Sometimes I don’t even know how to start the lessons’ (ibid., Line: 73).

Au-na

Au-na was a six-year-old girl with a heart condition. Her mother related that a doctor had described Au-na as ‘one of the smarter ones among children with DS’ (Interview 1 – Au-na’s Mum, Line: 8). Au-na told me that in school, she liked sports, drawing and music, while her mother informed me that her daughter’s hobbies were fashion and playing musical instruments, because she was also learning the African drum.

Au-na’s Mum

According to Rogers (2007), parents have hopes and expectations for their disabled children. But Au-na’s Mum, while acknowledging Au-na’s cognitive impairment, seemed to have quite high expectations for her daughter’s learning. She said: ‘I’ve been pushing my daughter to learn different things’ because ‘I want her to be at least as smart as she can be’ (Interview 1 – Au-na’s Mum, Lines: 3-4). This seemed to project an image of a ‘tiger parent’⁹, especially when she tended to scold her child as a way to impose discipline. Although wanting to give Au-na an opportunity to learn piano playing, Au-na’s Mum told me that she had many difficulties in finding a piano teacher.

⁹ ‘Tiger parent’ was a term first introduced by Amy Chua (2011) in her book ‘Battle Hymn of the Tiger Mother’. Tiger parents have a particular style of parenting that emphasises on high standards of achievement from their children, especially academically. They are also strict in discipline and control, and in punishment (ibid.). Chua (2011) also pointed out that this is a common approach to parenting within the Chinese culture, especially among mothers. However, Kim (2013) noted that studies have found Chinese families generally have a balanced mix of power-assertive style parenting and supportive parenting.

She complained: ‘The music studios in Macao would mostly turn us down by saying our children might scare the teachers and other students there’ (ibid., Lines: 45-47).

4.2.1.2 Previous Learning Environment and Performance

Before this project, Au-na had been learning the piano for six months with Ms An-ling who told me that she had been teaching her in the same way as when teaching her other students without DS. Au-na’s Mum would join in the class occasionally, yet this often seemed to make Ms An-ling feel uneasy. ‘I didn’t like it, to be honest’, the teacher admitted and explained: ‘She would shout at Au-na during lessons, so I wouldn’t propose any activities for the parent to join in’ (Interview 1 – Ms An-ling, Lines: 78-80). Nevertheless, Ms An-ling would inform the parent of the student’s progress, although only briefly. She said: ‘I usually talked a little about the progress with Au-na’s Mum after the lessons for about five minutes’ (ibid., Lines: 80-81).

According to Ms An-ling, Au-na’s progress had been extremely slow. The teacher explained the reason for her perception:

I’ve tried to force her to recognise the notes on the music score, but it’s so difficult for her to sense the small changes in positions of the notes on the staves. (ibid., Lines: 67-68)

This seemed to indicate that Ms An-ling was following the traditional approach to teaching music in that students must first learn to read music notation, and that she felt Au-na’s progress was hindered by the poor music reading which led to her needing more time to learn a piece of melody. This could be the reason why Au-na told me in her first interview that she found the piano lessons difficult, and her mother noticed that ‘she refused to read the music scores’ (Interview 1 – Au-na’s Mum, Line: 62). However, Au-na’s Mum believed that although Au-na was not learning very fast, she

did enjoy the lessons, and she would practise the piano for three to five minutes at home every day. Yet, it seemed that the parent did not actively participate in this activity, for she said: ‘I would be cooking or doing other housework during her practices’ (ibid., Lines: 67-68).

Despite the slow progress, Ms An-ling believed that Au-na possessed a good musical memory. This was because although Au-na had only managed to learn two pieces of music in the past six months, Ms An-ling commended: ‘She could now play the two songs ... from memory with correct positioning of the hand and fingerings’ (Interview 1 – Ms An-ling, Lines: 87-88).

4.2.2 Adopting a Pedagogical Approach

4.2.2.1 Choice of Pedagogy

After the pedagogical intervention tutorial, Ms An-ling decided to experiment with ‘Piano by Number’¹⁰ because she felt it was more straightforward. She explained: ‘The reason came from my experience working with Au-na, noticing that she was very weak at reading traditional music notation’ (Interview 2 – Ms An-ling, Lines: 2-3). To help Ms An-ling with her preparation, I gave her a copy of Aschenbrenner’s (2000) ‘Piano is Easy’, which she in turn made a photocopy for Au-na. In addition, she prepared two sets of numbered stickers: one set to stick on the middle register of the piano in the lessons, and one set for Au-na’s piano at home. At the end of Lesson 1, she taught Au-na’s Mum the order in which the numbered stickers needed to be placed on the keyboard (Observation L1 – Group Apple, p.3).

¹⁰ See Chapter 2 (§2.6.5) for full description, and Appendix 3 (p.222) for summary.

4.2.2.2 The Lessons Observed

The lessons took place in the living room of Ms An-ling's own home. The room was spacious, furnished with a two-seater sofa on one side with a coffee table in front. Opposite was a television set seated in a cabinet with a vase of flowers beside it. The room had windows, and as the lessons were in the afternoon, light came through naturally from them and mingled with the pale-yellow lighting in the room to create a warm and cosy atmosphere. An upright piano stood against the wall opposite to the entrance, and on the right-hand side of the piano, there was a desk on which there was a pencil. But there was also a set of numbered stickers on it in Lesson 1, and some sweets in Lesson 3. Throughout the three lessons observed, Au-na sat on the piano bench in front of the piano, while Ms An-ling sat on a chair on the right-hand side of Au-na, and Au-na's Mum sat on a chair on the left-hand side. A copy of 'Piano is Easy', which Ms An-ling had photocopied for Au-na, was placed on the music shelf. As the observer, I sat near the door, facing the back of the participants.

From the three of the five lessons where I made my observations, I noticed that each thirty-minute lesson followed an organised structure that Ms An-ling had created (e.g., Observation L1 – Group Apple, pp.1-2). After the initial greetings of one another, Ms An-ling warmed up the lesson by playing a game which she had improvised and which I had labelled as the 'Number Game'. In this game, Ms An-ling either called out or pointed at a number on the score of 'Jingle Bells' (Figure 4.1) and asked Au-na to play the corresponding note on the piano, which now had the keys stickered with numbers. The teacher and student then concentrated on playing 'Jingle Bells' repeatedly. While Au-na was playing the tune, Ms An-ling pointed at the music score only when necessary and corrected any mistakes. In Lesson 3 specifically, Ms An-ling treated Au-na to a

sweet every time Au-na finished playing the tune (Observation L3 – Group Apple, p.2). At the end of each lesson, Ms An-ling discussed with Au-na’s Mum, who was present throughout, about the content covered and the points that needed attention during practice at home.

Jingle Bells

333*	333*	3512	3***
4444	4333	3223	2*5*
333*	333*	3512	3***
4444	4333	5542	1***

Figure 4.1: Music score of ‘Jingle Bells’
(Reproduced from Aschenbrenner’s (2000) ‘Piano is Easy’)

By the fifth lesson, I noticed that not only had Au-na improved in the ‘Number Game’, responded quicker and made fewer mistakes by the lesson, she had also finished learning the whole of ‘Jingle Bells’ and managed to memorise most of it with correct fingerings (Observation L5 – Group Apple, p.2).

4.2.2.3 Home Practice

The reason for the mother not being actively involved in Au-na’s previous home practice might have been because she did not have the knowledge of piano playing, for after having attended the re-designed lessons herself, she commented: ‘It’s ... easier for me, a parent who doesn’t know how to read scores, to practise with [Au-na]’ (Interview 2 – Au-na’s Mum, Lines: 5-6). Furthermore, she noted in her diary that she was able to recognise if her daughter hit a wrong note.

The diary in which the mother had recorded issues relating to the lessons and Au-na's piano exercises revealed that, since the project began, Au-na had been practising for fifteen to thirty minutes on most days, with the mother accompanying her. These piano exercises were shortened or postponed only on a few occasions due to unavoidable circumstances. For example, 'only practised for five minutes today because we went out for dinner' (Diary – Au-na's Mum, Line: 44), or 'Au-na has the flu, so we haven't practised for two days' (ibid., Line: 51). However, Au-na's Mum noted that on the days when she could not supervise because of delays at work, her domestic helper reported to her that Au-na had only practised for five to ten minutes.

The mother noticed that Au-na liked learning with numbers, and they would play the 'Number Game' during practice. She also reflected: 'I think [Au-na] did better with Ms An-ling pointing at the score' (ibid., Lines: 26-27). This perception appeared to be accurate, for when she, like Ms An-ling, pointed simultaneously at the notes, her daughter did perform better. She reported: 'Today, I pointed at the music, and I thought the playing was smoother' (ibid., Lines: 30-31).

4.2.3 Reflections on Group Apple's Findings

4.2.3.1 Influence on the Student's Performance

Au-na's inability to recognise the subtle positional changes of notes on staves seemed problematic for Ms An-ling, for in her opinion, this had prevented the student from learning more melodies faster. The teacher commented: '[Au-na] has just learnt two short melodies in the past six months' (Interview 1 – Ms An-ling, Line: 74). In the five lessons prescribed for this project, Ms An-ling followed the concept of 'Piano by Number' and taught Au-na to read the notes by matching the numbers printed on the

score with the numbered stickers on the piano. I observed that lesson by lesson, Au-na's responses became quicker in both the 'Number Game' and the playing of 'Jingle Bells'. This improvement seemed to reflect that the thinking process of number-matching was less complicated than converting the traditional notation on staves to the piano keys (Observation L5 – Group Apple, p.3). A similar view was made by Au-na's Mum: 'The numbering on the piano made it much easier for my daughter to learn the piece of music than reading traditional music score' (Interview 2 – Au-na's Mum, Lines: 4-5).

Ms An-ling recalled: 'Whenever [Au-na] played a wrong note, it would be difficult to correct her mistake unless we practised together for more than twenty times' (Interview 1 – Ms An-ling, Lines: 85-86). Au-na's Mum also claimed: '[Au-na] would refuse to do the task if she thought it would be too difficult' (Interview 2 – Au-na's Mum, Lines: 9-10). Such behavioural display was perceived by Ms An-ling and Au-na's Mum as Au-na being stubborn. Furthermore, Ms An-ling reflected in her second interview on how easily Au-na would become bored or be distracted in the past. Since the 'Piano by Number' method was introduced, there seemed to be a marked change in Au-na's behaviour and attitude towards piano learning. From observation, Ms An-ling's new strategy appeared to have aroused Au-na's interest. Au-na looked intrigued when she saw the numbered stickers on the piano and asked about them soon after she walked into Lesson 1 (Observation L1 – Group Apple, p.1). She also seemed to enjoy Ms An-ling's 'Number Game' because she laughed a lot when she was engaged in it (ibid., p.3). Ms An-ling confirmed this after Lesson 2 and wrote: 'She could concentrate for ten minutes with the game' (Diary – Ms An-ling, Line: 29).

Au-na's perceived stubbornness was later interpreted by Ms An-ling as a lack of confidence, for with the 'Piano by Number' method, the teacher noticed that Au-na had not only learnt faster, but had also 'become more confident in her performance' (Interview 2 – Ms An-ling, Lines: 21-22). Furthermore, 'she cooperated better and was less moody in class' (ibid., Line: 23). Au-na's Mum also thought that this method matched Au-na's learning style, and she too could sense the gradual growth of confidence in Au-na. The mother noted: '[Au-na]'s a bit more willing to try new things' (Interview 2 – Au-na's Mum, Lines: 10-11). Under this pedagogy, Au-na's performance brought forth the last entry in Ms An-ling's diary: 'The progress in the past five lessons has been a huge improvement for a student with DS!' (Diary – Ms An-ling, Line: 68).

Au-na herself seemed satisfied with the re-designed lessons. I noticed how she kept laughing and singing the solfege while playing the piano (Observation L1 – Group Apple, p.3), and her mother's diary indicated that she practised longer at home. It seemed to me that the lessons had left a strong impression on Au-na, for when I asked her about what she did in these lessons, she answered without hesitations: 'play a song play games', humming the melody at the same time (Interview 2 – Au-na, Line: 5). Her attitude changed from regarding piano lessons as being difficult in her first interview to being 'so fun' in the second (ibid., Line: 2). The excitement that she showed when she gave this answer seemed to indicate that she felt happier with the new learning method. When asked whether she wanted to continue learning the piano, she confirmed: 'Yes I like' (ibid., Line: 20).

4.2.3.2 Teacher's Thoughts on the Lessons

For Ms An-ling, the teaching strategy appeared to have diminished her initial guilty and desperate feelings and restored her confidence in teaching. Previously, Ms An-ling could only modify her lessons in consideration of Au-na's heart condition. She said: 'I've been trying not to make Au-na too excited in class' (Interview 1 – Ms An-ling, Line: 61). But with an established piano pedagogy in mind, Ms An-ling was able to prepare the lessons in advance. She recorded in her diary how she had studied the 'Piano by Number' website to familiarise herself with the ideas and processes suggested, and noticed that, with its variety of music scores available for purchase, it could be a long-term method to apply.

The diary, which was intended for collecting research data, had surprisingly become a useful tool for Ms An-ling in her teaching. She told me that she had used it to make lesson plans and note down each lesson's progress. From that, she felt she was able to gain a clearer picture of Au-na's improvement. 'This,' she said, 'is also a motivation for me as a teacher' (Interview 2 – Ms An-ling, Lines: 52-53). In her diary, the structure and goal for each lesson were carefully planned and set beforehand, and these were reflected in my field notes (e.g., Observation L5 – Group Apple, pp.1-3). Ms An-ling expressed how pleased she was with Au-na's overall progress, despite the need for some adjustments to her intended plans as recorded in the diary. For example, she abandoned the ideas of learning a new piece in Lesson 3: 'She did just a bit better in playing "Jingle Bells", so I decided to stay with this piece first' (Diary – Ms An-ling, Lines: 42-43). At the end of the five weeks, Ms An-ling concluded that she was more confident and prepared than before in the lessons.

4.3 Findings of Group Banana

4.3.1 Background Information

4.3.1.1 The Participants

Ms Bai-xue

Ms Bai-xue had a bachelor's degree in Music Education. She used to teach music to primary students in a mainstream school that included children with DS, ADHD, and Asperger syndrome. She had been teaching piano for eight years since becoming freelance, and she was also an African drum instructor.

Although Ms Bai-xue did not have any specific training in SEND, she was one of the initiators of the piano classes at the Macau Down Syndrome Association, where she had two other students with DS besides Bu-ran. She said she had been teaching her students with DS the same way as when teaching non-disabled students, only at a slower pace. She expressed her understanding of their physical and intellectual differences, and their varying learning profiles. Wanting to enhance their learning, Ms Bai-xue said: 'I would love to try any methods that could effectively help them learn and progress' (Interview 1 – Ms Bai-xue, Lines: 87-88).

Bu-ran

Bu-ran was a seven-year-old girl. Her mother recalled: 'Ever since [Bu-ran] was a baby, she would dance and smile whenever she heard music' (Interview 1 – Bu-ran's Mum, Lines: 28-29). Physically, her mother's description of her was that 'she's a bit shorter, which is normal for children with DS' and that 'she's seriously short-sighted, but she doesn't like wearing glasses' (ibid., Lines: 7-9). Besides piano lessons, Bu-ran

also attended African drum classes. She told me in her first interview that in school, she liked music and sports, while her mother said that her daughter enjoyed swimming in the summer.

During the interviews, I felt Bu-ran could competently answer the questions. But her mother commented that Bu-ran was always too quick and eager to respond, often without thinking clearly. Ms Bai-xue's opinion of Bu-ran was that she was 'quite smart' (Interview 1 – Ms Bai-xue, Line: 55).

Bu-ran's Mum

Bu-ran's Mum was considered by Ms Bai-xue as 'quite open-minded' (Interview 1 – Ms Bai-xue, Line: 49), for she had talked frankly to the teacher about Bu-ran's condition. She had also unreservedly told me about her initial feeling of hopelessness when Bu-ran was born, exemplifying the emotional stress that parents of disabled children often experience (Reichman, Corman and Noonan, 2007; Rogers, 2011). However, she said: 'But day after day raising her, seeing her smiling happily, I felt no difference than raising a non-disabled child' (Interview 1 – Bu-ran's Mum, Lines: 3-4). Bu-ran's Mum came across as a supportive parent but without being over demanding. She also appeared to me rather timid, for having heard from other parents that most music studios would not accept students with DS, she admitted: 'I even hesitated to ask for information' (ibid., Line: 42).

4.3.1.2 Previous Learning Environment and Performance

Bu-ran started piano lessons with Ms Bai-xue three months prior to this project, but the teacher commented: 'We haven't made much progress' (Interview 1 – Ms Bai-xue,

Line: 68). Although noticing Bu-ran's agility with her fingers, Ms Bai-xue remarked: 'She isn't very disciplined when it comes to remembering the fingerings' (ibid., Line: 56). However, the teacher seemed to consider Bu-ran's impaired vision to be the main obstacle. She pointed out that Bu-ran, being short-sighted, would have difficulties with music reading; yet the child would refuse to wear her glasses. Ms Bai-xue recalled: 'There was one lesson where Bu-ran's Mum and I spent the whole time trying to persuade her to put on her glasses' (ibid., Lines: 61-62). This seemed to indicate that Ms Bai-xue's was trying to teach her student to rely on notation to learn to play music. Despite considering the progress being slow because of Bu-ran's apparent reluctance to read music, Ms Bai-xue noticed Bu-ran's good musical memory, which seemed beneficial. She explained: '[Bu-ran] has learnt one song now and she can play it from memory. She likes playing from memory because then, she doesn't have to wear glasses nor read the notes' (ibid., Lines: 73-75). Bu-ran's Mum also hinted at Bu-ran's good memory when she said: 'She can always remember the melodies taught in school' (Interview 1 – Bu-ran's Mum, Line: 29).

Ms Bai-xue would only have a moment to speak with Bu-ran's Mum at the end of each lesson because the parent would not normally accompany Bu-ran during the teaching. Ms Bai-xue speculated that it was because she did not have the knowledge of piano playing. It also appeared that home practice was not being forced onto Bu-ran, for she said: 'I don't need to practise' (Interview 1 – Bu-ran, Line: 29). To this, her mother agreed but who also admitted her own difficulty: '[Bu-ran] doesn't practise much at home. I don't know how to play the piano so I can't practise with her' (Interview 1 – Bu-ran's Mum, Lines: 55-56). Nevertheless, Bu-ran's Mum was certain that her daughter enjoyed these lessons. She explained: 'She asks me every day when she'll go to Ms Bai-xue's studio again' (ibid., Line: 52). Furthermore, she noticed Bu-ran's gain

in confidence, saying, '[Bu-ran] keeps telling her friends that she can now play the piano' (ibid., Line: 49).

4.3.2 Adopting a Pedagogical Approach

4.3.2.1 Choice of Pedagogy

After our discussion in the pedagogical intervention tutorial, Ms Bai-xue and I agreed that instead of forcing Bu-ran to read music with her glasses on, it might be worthwhile to experiment with the Suzuki method,¹¹ which emphasised on imitation and repetition instead of note reading. Although there are training courses offered by various Suzuki associations around the world, Macao does not have such training. Therefore, Ms Bai-xue did not have sufficient knowledge about this method. To prepare Ms Bai-xue with her lessons, I gave her a copy of 'Suzuki Piano School' volume 1 with CD (Suzuki, 2011), as well as recommending several websites and literature to her that discussed lesson planning within the Suzuki method.¹²

4.3.2.2 The Lessons Observed

The lessons took place in one of the rooms in Ms Bai-xue's own home. It was quite a small room, but very neat and tidy. Although there was a window, the curtains were closed, but the room was brightly lit, giving a sense of vitality. An upright piano stood against one wall, occupying much of the space. Opposite the piano was a bookcase full

¹¹ See Chapter 2 (§2.6.2) for full description, and Appendix 3 (p.219) for summary.

¹² Websites and literature recommended to Ms Bai-xue:

- <https://suzukiassociation.org/about/suzuki-method>
- <https://www.buscarinstrumentos.com/en/suzuki-method-piano>
- 'Focus on Suzuki piano: Creative and effective ideas for teachers and parents' by Mary Craig Powell (Athens, Ohio: Ability Development, 1988)
- 'Thoughts on the Suzuki piano school: A Suzuki method symposium' by Haruko Kataoka (Princeton, New Jersey: Suzuki Method International, 1985)

of neatly stacked music books and scores. On the left-hand side of the piano was a small desk on which there was a CD in Lesson 1. Due to the teaching strategy in this group, either the parent or the student would sit on the piano bench in front of the piano, while the teacher sat on the chair on the right-hand side. The parent or the student, when not playing the piano, would also sit on this side. As the observer, I sat by the bookcase, in close proximity to the participants.

As documented in my observational field notes, Ms Bai-xue had introduced a traditional form of greeting to Bu-ran and her mother. In accordance with the Japanese culture, Ms Bai-xue invited Bu-ran and her mother to take a bow before the start of each lesson. Initially, Bu-ran seemed to find this amusing and laughed when they all took a bow (Observation L1 – Group Banana, p.1). Soon the mother and child seemed quite comfortable with this tradition, and they automatically performed this gesture as they entered the studio (Observation L3 – Group Banana, p.2).

Ms Bai-xue explained to Bu-ran's Mum in Lesson 1 that the Suzuki method expects the child to observe, as the parent learns to play the music and practises it at home until the child becomes motivated to learn. Therefore, Bu-ran's Mum became Ms Bai-xue's student until the time came when Bu-ran expressed her desire to learn to play (Observation L1 – Group Banana, p.1). As Bu-ran's Mum did not know how to play the piano, Ms Bai-xue began by showing her the position of Middle C on the instrument and the standard posture of the right hand on the keyboard, and how to move her fingers from one key to another. To me, Bu-ran's Mum appeared nervous about learning the piano, but she seemed willing to try (*ibid.*, p.3). They proceeded with the first phrase of the Theme of 'Twinkle Twinkle Little Star' (Figure 4.2) with Ms Bai-xue leading, playing two octaves higher on the same piano, and Bu-ran's Mum imitating. Ms Bai-

xue explained the music choice: ‘There’re three variations and a theme to this music. The theme is the easiest. I’ll start with the theme’ (Diary – Ms Bai-xue, Lines: 4-5).

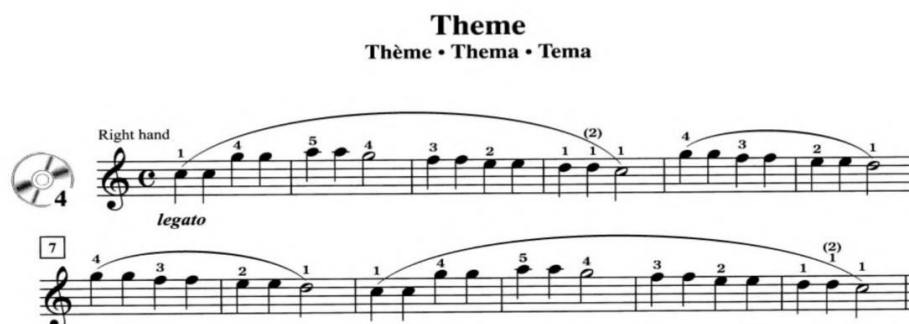


Figure 4.2: Music score of the Theme of ‘Twinkle Twinkle Little Star’
(from ‘Suzuki Piano School’ Vol 1)

I noticed that as Bu-ran’s Mum was playing, Bu-ran was watching attentively and displaying occasional excitement with laughter (Observation L1 – Group Banana, p.2). When the lesson ended, I saw Ms Bai-xue give Bu-ran’s Mum the CD that was on the desk. I heard the teacher ask the parent to practise the tune daily in front of Bu-ran and to play the CD, which contained the same piece of music, as often as possible (ibid.).

In Lesson 3, I was at first informed that Bu-ran’s Mum had learnt the whole theme in two lessons. While she was revising the melody, Bu-ran started humming it and told us that she knew the music (Observation L3 – Group Banana, p.1). A few days before this lesson, Bu-ran’s Mum had recorded in her diary: ‘I played the recording when driving Bu-ran home. She could hum the tune now while listening’ (Diary – Bu-ran’s Mum, Lines: 36-37). Bu-ran’s behaviour in the lesson seemed to me to be waiting eagerly for the adults to give her a chance to learn (Observation L3 – Group Banana, p.3). This was confirmed in Ms Bai-xue’s diary for this day. She wrote: ‘Bu-ran was motivated!’ (Diary – Ms Bai-xue, Line: 22). When Ms Bai-xue asked Bu-ran if she

wanted to play the piano, she immediately gave a positive response. Thus, the mother swapped place with her daughter. In the same manner as with Bu-ran's Mum, Ms Bai-xue began by first teaching Bu-ran the position of Middle C on the piano. Here, the teacher emphasised its position by referring the two adjacent black notes as 'two black teeth' (Observation L3 – Group Banana, p.1). Then Bu-ran was shown the standard posture of the right hand on the keyboard and how to move her fingers across the keys. I noticed that although Bu-ran's short-sightedness was said to be quite serious, she was still able to imitate the movements of the teacher's fingers on the keyboard (ibid., p.3). As soon as Ms Bai-xue began to teach her the melody, she stamped her feet and waved her arms excitedly, as if to show she knew the music already (ibid., p.2). As observed, there was a moment in this lesson, and in Lesson 5, where Bu-ran began to lose attention. In these circumstances, Ms Bai-xue would stop and allow Bu-ran to drink some water. Such diversion was advised by Suzuki (1993) who explained that if students' attention began to wander, temporary distraction would prevent them from disliking the lessons.

In Lesson 5, Bu-ran arrived wearing her glasses, looking happy (Observation L5 – Group Banana, p.1). Ms Bai-xue praised her for this gesture, while the mother explained that she had told Bu-ran she could play the piano better if she had on her glasses. I was surprised to see this episode (ibid., p.2). At the end of the lesson, I heard Ms Bai-xue ask Bu-ran's Mum to continue with Bu-ran's home practice and to take note of the correctness of Bu-ran's fingerings. But from observation, it seemed to me that neither Ms Bai-xue nor Bu-ran's Mum was demanding or expecting Bu-ran to master the tune within a short space of time, nor setting goals for her (ibid.). This perception appeared accurate, for Ms Bai-xue contemplated in the second interview that when teaching children with DS, progress was not necessarily important, and Bu-ran's

Mum said: ‘The progress may not be faster, but this isn’t the most important concern for me’ (Interview 2 – Bu-ran’s Mum, Lines: 4-5).

4.3.2.3 Home Practice

Bu-ran’s Mum wrote: ‘It was funny for me to learn the piano at my age because of my daughter!’ (Diary – Bu-ran’s Mum, Lines: 25-26). Nevertheless, her diary recorded how she conscientiously practised the acquired melody ten times almost daily, while Bu-ran pottered around the house, listening to her practice. Occasionally, Bu-ran’s Mum would involve Bu-ran by asking her to count the number of times she had played the music. One evening in the second week, Bu-ran played some random notes on the higher register of the piano when Bu-ran’s Mum was practising. The mother wrote: ‘I felt she wanted to play too’ (ibid., Line: 22).

Since Bu-ran started to learn the same piece of music as her mother in Lesson 3, the mother and daughter began to take turns at the piano at home, and they would each practise three to five times by swapping alternately. Bu-ran seemed to be very eager to practise. On the evening before Lesson 4, her mother wrote: ‘She said she wanted to start as soon as we got home’ (ibid., Line: 67). Bu-ran’s Mum also reflected: ‘Bu-ran took the initiative more in practising’ (Interview 2 – Bu-ran’s Mum, Line: 8). They managed to continue with the daily practice and were only disrupted twice due to preparation for Bu-ran’s school exams. Bu-ran’s Mum also seemed to manage to fulfil her position as the home teacher. During the fourth week, she recorded: ‘I adjusted her hand posture when she played’ (Diary – Bu-ran’s Mum, Lines: 79-80). Furthermore, she said: ‘I also corrected her whenever she played a wrong note’ (Interview 2 – Bu-ran’s Mum, Line: 46).

Throughout the five weeks, Bu-ran and her mother listened to the CD regularly in various situations, such as ‘during dinner time’ (Diary – Bu-ran’s Mum, Line: 3), or when ‘Bu-ran was playing with her toys’ (ibid., Line: 18). During the second week, Bu-ran’s Mum found an online video showing a piano student learning to play ‘Twinkle Twinkle Little Star’, and she noted: ‘We watched the video together after I had finished practising ten times’ (ibid., Lines: 40-41).

4.3.3 Reflections on Group Banana’s Findings

4.3.3.1 Influence on the Student’s Performance

Bu-ran’s Mum did not only attend the lessons and supervise home practice, but also became the student. Ms Bai-xue said: ‘Bu-ran’s Mum acted as a role model for Bu-ran in the first two lessons [She] also practised and played the recording of the music at home’ (Interview 2 – Ms Bai-xue, Lines: 9-10). The teacher said that she felt young piano students in general did not understand that they were not being forced, nor should they be forced by their parents to learn the instrument, and she pointed out the advantage of having Bu-ran’s Mum as a model in class. She explained: ‘In Bu-ran’s case, by watching her mummy setting an example, she was motivated to learn rather than being forced to have lessons’ (ibid., Lines: 21-22). I read in the mother’s diary where she recorded a brief conversation between herself and Bu-ran. She wrote: ‘Bu-ran asked me if I was learning to play the piano. I said “Yes, I like playing the piano”’ (Diary – Bu-ran’s Mum, Lines: 6-7). This seemed to me as an indication of Bu-ran taking an interest, and the parent’s positive and extended response might have motivated the child to follow in pursuing this activity. Although Ms Bai-xue confirmed that Bu-ran’s Mum’s modelling had motivated Bu-ran, I felt that it could also be because of Bu-ran’s good musical memory, and perhaps of her internalising the music as she listened to her

mother play, that she succeeded in learning and memorising ‘Twinkle Twinkle Little Star’ within three lessons.

The application of the Suzuki method also seemed to have created a harmonious learning atmosphere that benefited all parties. Ms Bai-xue recounted: ‘The method made the ... lessons much smoother since we didn’t need to spend time persuading Bu-ran to wear glasses. That made everyone more relaxed’ (Interview 2 – Ms Bai-xue, Lines: 15-16). Consequently, Ms Bai-xue expressed her satisfaction with Bu-ran’s progress and her improved behaviour and attitude. The teacher said: ‘Bu-ran’s quite confident in the lessons now I felt she’s less stubborn and more cooperative in class’ (ibid., Lines: 26-28). As an observer, I too could sense Bu-ran’s confidence when I asked her if she wanted to continue with piano learning. She told me: ‘Yes — I can play better’ (Interview 2 – Bu-ran, Line: 20).

4.3.3.2 Teacher’s Thoughts on the Lessons

Ms Bai-xue had made a remark about her previous lessons with Bu-ran, which seemed rather negative: ‘In the past ... we just sat there, making no progress’ (Interview 2 – Ms Bai-xue, Line: 51). Having decided on adapting Suzuki’s method, she was able to prepare the lessons in advance. I observed in Lesson 1 that Ms Bai-xue was well-organised and looked confident as she explained Suzuki’s concept to Bu-ran’s Mum and adhered to Suzuki’s strategy by demonstrating how to play the tune and asking Bu-ran’s Mum to imitate (Observation L1 – Group Banana, pp.1-3). I also noticed that Bu-ran was concentrating, watching her mother learn (ibid., p.3). But Ms Bai-xue, after that first lesson, had noted in her diary of her uncertainty about the usefulness of teaching Bu-ran’s Mum. She wrote: ‘I’m not sure if this would motivate Bu-ran to

learn the music' (Diary – Ms Bai-xue, Line: 15). However, Ms Bai-xue began to teach Bu-ran in Lesson 3 because she felt her student was ready. It seemed that to Ms Bai-xue, Bu-ran's desire to learn was beyond her expectation. She felt that 'it was like a miracle' (ibid., Line: 22). Pleased with Bu-ran's overall performance in class, she summarised: 'She's more attentive and confident in the lessons now. I'm really glad' (ibid., Lines: 30-31).

Ms Bai-xue admitted that adhering to a specific method had increased her preparation time. She recounted: 'I read the materials you gave me — I planned lessons — reviewed them' (Interview 2 – Ms Bai-xue, Line: 50). But the whole experience appeared to have enhanced the teacher's self-esteem. She announced: 'I felt prouder of myself as a teacher' (ibid., Line: 52).

4.4 Findings of Group Coconut

4.4.1 Background Information

4.4.1.1 The Participants

Ms Chi-yan

Ms Chi-yan had achieved Grade 8 in the ABRSM piano examination and had been teaching piano for two years. At the time of participating in this project, Ms Chi-yan was studying for her bachelor's degree in Music Education, and she confirmed that it did not include courses relating to special education. So far, Chao-chao was her first and only student with SEND.

Chao-chao

Chao-chao was a six-year-old boy, and his mother informed me that he has moderate learning difficulties. He was also described as ‘quite healthy except a bit short’ but ‘especially weak at speaking and staying focused when learning’ (Interview 1 – Chao-chao’s Mum, Lines: 8-10). Ms Chi-yan also related: ‘I was told that Chao-chao is quite naughty and stubborn’ (Interview 1 – Ms Chi-yan, Lines: 42-43). Ms Chi-yan said that both she and Chao-chao’s Mum agreed that Chao-chao could be extremely inattentive and restless, and as an observer, I too noticed such behaviour, for he kept looking around and walking in all directions while he was being interviewed the first time.

Chao-chao told me in his first interview that he liked music and drawing in school. His mother also noticed his love for music. She said: ‘I can tell that he looks happier, humming something after school if there’s music lesson that day’ (Interview 1 – Chao-chao’s Mum, Lines: 28-29).

Chao-chao’s Mum

A mother of two sons, Chao-chao’s Mum’s sentiments on having a child who is considered cognitively impaired exemplified that some ‘expectations of a certain norm’ such as celebrating the birth or returning to work cannot be realised (Rogers, 2011, p.563). She said: ‘Having a child with DS was quite painful at the start’ (Interview 1 – Chao-chao’s Mum, Line: 2), and ‘... has made me a full-time mum’ (ibid., Line: 43). She had unreservedly spoken to Ms Chi-yan and me about Chao-chao’s conditions, and had been involved in every aspect of his piano learning, often accompanying him in the lessons and joining in the activities. Ms Chi-yan’s impression of Chao-chao’s Mum

was that ‘she’s very patient with Chao-chao’ (Interview 1 – Ms Chi-yan, Line: 71), which was also my sentiment of her after her first interview.

4.4.1.2 Previous Learning Environment and Performance

Chao-chao had been learning the piano for three months with Ms Chi-yan, who believed the student enjoyed going to her piano class. She recalled: ‘Chao-chao was very enthusiastic; he always gave me a big smile at the beginning of the lessons’ (Interview 1 – Ms Chi-yan, Line: 21). Chao-chao’s Mum also commented that Chao-chao liked Ms Chi-yan because the teacher would give him a sweet at the end of each lesson. However, she declared: ‘He didn’t enjoy [the lessons] very much’ (Interview 1 – Chao-chao’s Mum, Line: 56). Ms Chi-yan reflected: ‘Whenever Chao-chao’s Mum and I tried to ask him to sit on the piano bench and learn, he often didn’t cooperate. He just didn’t like sitting still on the bench’ (Interview 1 – Ms Chi-yan, Lines: 22-23).

Ms Chi-yan admitted that she did not have any specific strategy to teach Chao-chao. She had adopted the methods of using musical note cards, and letting the student listen to her piano playing, as these ‘are also the common methods for teaching non-disabled students’ (ibid., Line: 62). She told me that during the lessons, she would sing little tunes while playing the piano and ask Chao-chao to dance and clap along to the music. She had also included a game using flashcards to practise note recognition, which Chao-chao seemed to enjoy, for he displayed a look of excitement when he told me: ‘Play piano — play note — cards’ (Interview 1 – Chao-chao, Line: 20). But Ms Chi-yan also recalled: ‘Since he was so inattentive and stubborn, I was like chasing after him with the musical note flashcards every lesson’ (Interview 1 – Ms Chi-yan, Lines: 54-55). According to the teacher, ‘even just sitting on the bench may need some training for

this student' (ibid., Lines: 56-57). Nevertheless, Ms Chi-yan asked Chao-chao's Mum to practise with Chao-chao daily, with which the mother complied. She told me: 'I usually require [Chao-chao] to sit for five minutes every day, showing him the cards and asking him to play some random notes on the piano' (Interview 1 – Chao-chao's Mum, Lines: 60-61).

Although Chao-chao's Mum commented that since taking up piano lessons, Chao-chao had become slightly more attentive and could sit still longer, Ms Chi-yan had another concern. She noted that the progress was slow because they had not yet managed to play a complete melody on the piano.

4.4.2 Adopting a Pedagogical Approach

4.4.2.1 Choice of Pedagogy

After the discussion in the pedagogical intervention tutorial, Ms Chi-yan had decided on the approach of using an iconic/symbolic representation, in this case, numbers, together with verbal instructions as recommended in Velásquez's research findings¹³.

She explained that:

... by concentrating on the fixed position of a few black keys, it might be easier to give Chao-chao clearer instructions. Also, simple verbal instructions might be easier for him to understand.
(Interview 2 – Ms Chi-yan, 2019, Lines: 3-5)

However, Ms Chi-yan had preferred to make an alteration to Velásquez's (1991) model, in that she would have the student's thumb on F# instead of D#. She contested:

¹³ See Chapter 2 (§2.6.1) for full description, and Appendix 3 (p.218) for summary.

This would be easier for Chao-chao when playing the three notes needed in ‘Mary Had a Little Lamb’ and ‘Hide and Seek’, using only the thumb, and the index and middle fingers. Besides, having the thumb on F# allowed the fingerings to synchronise with the sol-fa syllables – number 1 referred to ‘do’, number 2 to ‘re’ and number 3 to ‘mi’. (ibid., Lines: 5-9)

With the method chosen, I offered Ms Chi-yan the scores of the two above-mentioned tunes. These reproduced scores were made up of digits and their corresponding crotchet and minim notes (Figure 4.3). Ms Chi-yan had in turn made a photocopy of both pieces for Chao-chao in preparation for their upcoming lessons.

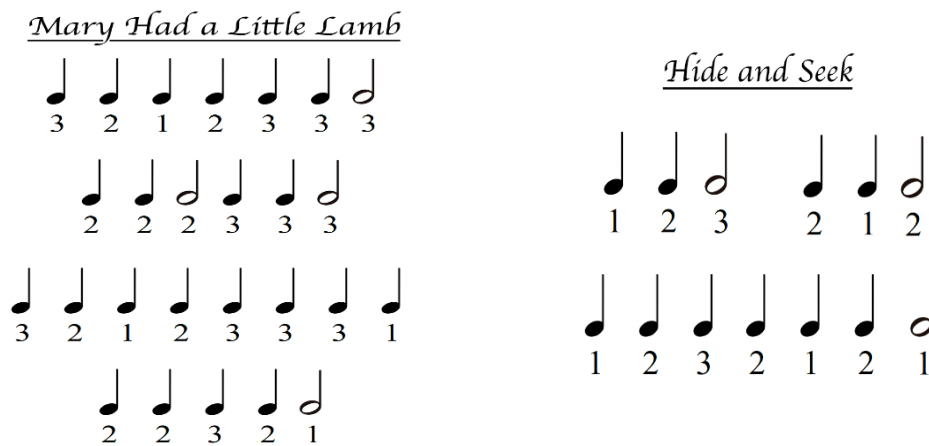


Figure 4.3: Music scores of ‘Mary Had a Little Lamb’ and ‘Hide and Seek’
(Reproduced according to Velásquez’s description of an iconic/symbolic representation)

4.4.2.2 The Lessons Observed

The lessons took place at the Macau Down Syndrome Association, situated in an industrial building. The room occupied by the association was spacious and rectangular. Filled cupboards and glass bookcases lined the lengths of the room, and framed pictures that were colourfully painted by the members with DS adorned the walls. An upright piano stood against the wall on the same side as the entrance, and at the opposite end, there were desks with computers on top. Although the room looked

cluttered, it seemed to give off a feeling of vibrancy to the place. During Group Coconut's lessons, a piece of music score was placed on the music shelf of the piano. Chao-chao sat on the piano bench in front of the piano while Ms Chi-yan sat on the chair on his right-hand side, and Chao-chao's Mum sat on the left. As the observer, I sat behind them at the opposite end of a long table that laid across the centre of the room. In Lesson 1, Ms Chi-yan put a sweet on this table. In Lesson 3, she put on it a sweet and a sticker, and in Lesson 5, a bar of chocolate.

As observed (Observation L1 – Group Coconut, pp.1-2), Ms Chi-yan began the first lesson by teaching Chao-chao the positioning of the fingers on the five black keys (Figure 4.4). First, she positioned the child's right thumb on the F# above Middle C. Next, she placed his second, third, fourth and fifth fingers on G#, A#, C# and D# respectively and practised these notes. Ms Chi-yan then showed Chao-chao the music for 'Mary Had a Little Lamb' and explained to him that on the score, the numbers under the crotchet and minim notes referred to the fingers playing.



Figure 4.4: Illustrations of the numbering and positioning of right-hand fingers

After the explanation, she slowly demonstrated how to play the music with her right hand while pointing at the score with her left. Then with the teacher continued pointing as well as guiding with verbal cues, Chao-chao began to learn to play the music. In the

subsequent lessons where I was an observer, Ms Chi-yan would at first assist Chao-chao in this manner, then she would ask him to try and play without any guidance. Only when Chao-chao hesitated and stopped for more than two seconds that Ms Chi-yan would follow Velásquez's experimental demonstration and reminded Chao-chao about the numbers (e.g., Observation L3 – Group Coconut, p.2).

These modified lessons seemed to have influenced Chao-chao's behaviour. In Lesson 1, he appeared to be inattentive, running away from the piano on ten occasions during the thirty-minute lesson. Yet in Lessons 3 and 5, he left the piano just once. Chao-chao's Mum had also noticed the change. In her diary, she noted that Chao-chao was slightly more attentive in Lesson 2 and 'he enjoyed the lesson more than before' when reflecting about Lesson 3 (Diary – Chao-chao's Mum, Line: 44). Ms Chi-yan told me at the beginning of Lesson 5 that she had begun teaching Chao-chao 'Hide and Seek' the previous lesson because she felt satisfied with his sole performance of 'Mary Had a Little Lamb' in Lesson 3 (Observation L5 – Group Coconut, p.1). By the end of this final lesson of the project, Chao-chao had managed to play the new tune without much guidance.

4.4.2.3 Home Practice

According to the mother's diary, Chao-chao had been practising daily except on lesson days, and missed one day of playing the piano because his mother had to attend to her other son who was feeling unwell. Although Chao-chao mostly practised for five minutes each time, he managed to play for ten minutes on four occasions, and once, his practice lasted for fifteen minutes.

In her diary, Chao-chao's Mum noted that on one evening during the first three weeks, Chao-chao told her that he liked playing the piano, and on another, she heard him singing along while he was playing. She wrote: 'He seemed to be enjoying it' (Diary – Chao-chao's Mum, Lines: 56-57). However, Chao-chao's Mum noted that after the fourth lesson, Chao-chao continued playing the first piece of music at home, even though there was a new melody that he needed to practise. Eventually, she noted: 'I explained and persuaded him to practise the new piece' (ibid., Line: 72). From then on, Chao-chao was recorded to have practised both pieces every evening.

4.4.3 Reflections on Group Coconut's Findings

4.4.3.1 Influence on the Student's Performance

In Ms Chi-yan's opinion, Chao-chao's inattentiveness was the cause of his slow progress because he could not concentrate. After three months of learning the piano, they were still at the stage of using flashcards and playing random notes, and they had yet to play a complete melody. In the five modified lessons, Ms Chi-yan taught Chao-chao to play the piano by using only the black keys. I observed that by the third lesson, Chao-chao could quickly locate the position of F# by himself and place his thumb on this note in preparation for playing 'Mary Had a Little Lamb'. This seemed to me that the position of the black F# key was easier for Chao-chao to remember than that of the white Middle C key (Observation L3 – Group Coconut, p.2). Because Ms Chi-yan had replaced the notes on the score with numbers that also referred to the fingers in play, Chao-chao's Mum had noticed some changes in Chao-chao since learning the piano this way. She commented: 'He would think more. I think it was because he needed to think about the fingerings and the numbers before moving his fingers' (Interview 2 – Chao-chao's Mum, Lines: 7-8).

As mentioned, Ms Chi-yan, Chao-chao's Mum, and me as the observer, all noticed that Chao-chao could at times be extremely inattentive and restless. McAllister (2012) advised that for hyperactive students, there must be an established lesson structure that the teacher adhere to every week. Although I had only observed three of Chao-chao's lessons, my field notes reflected a recognisable pattern in Ms Chi-yan's teaching. Apart from Lesson 1 where Ms Chi-yan began with introducing the black keys and the adapted numerical notation to Chao-chao, Lessons 3 and 5 involved Chao-chao revising the learnt melody first, playing under Ms Chi-yan's verbal guidance. Then he was asked to play it again without any help. I also recorded that the teacher's reminders and instructions had been direct, simple and clear (e.g., Observation L5 – Group Coconut, p.2). Ms Chi-yan's strategies appeared to have effectively prolonged Chao-chao's attention in class, for both Ms Chi-yan and Chao-chao's Mum came up to me at the end of Lesson 5, saying that they had noticed Chao-chao's improvements in responsiveness and concentration in the lessons (ibid.).

4.4.3.2 Teacher's Thoughts on the Lessons

Before employing a piano pedagogy, Ms Chi-yan seemed uncertain about how to teach Chao-chao. She said: 'I'm really doubting if I'm doing the right thing for him' (Interview 1 – Ms Chi-yan, Lines: 65-66). She also later confessed: 'Even though I'm his piano teacher, I had never thought he could play the piano' (Diary – Ms Chi-yan, Lines: 28-29). Since experimenting with Velásquez's approach to teaching, Chao-chao succeeded in learning two melodies in the space of five weeks, whereas the teacher recalled: 'In the past, he couldn't play any music because score reading required too much patience from him' (Interview 2 – Ms Chi-yan, Lines: 20-21). Because of Chao-chao's improved performance, Ms Chi-yan wrote: 'It was an achievement for him, his

parent and me' (Diary – Ms Chi-yan, Line: 23). From observation, Chao-chao would still become restless occasionally (e.g., Observation L3 – Group Coconut, p.2), but Ms Chi-yan seemed happy to remark: 'Now he could at least play a tune from the piano before running away' (Interview 2 – Ms Chi-yan, Lines: 21-22).

4.5 Findings of Group Durian

4.5.1 Background Information

4.5.1.1 The Participants

Ms Da-fan

Ms Da-fan was a full-time mother and a part-time piano teacher with eight years of piano teaching experience. She had a bachelor's degree in Music Education, but she had no training in teaching music to individuals with SEND. Besides Dan-yao, she had one other student with DS among her group of learners.

Dan-yao

Dan-yao was an eight-year-old boy with moderate learning difficulties and a mild hearing impairment. Ms Da-fan said that Dan-yao had been rather quiet during her lessons, and she believed that it was because he could not hear very well. Dan-yao told me that in school, he liked drawing the most. He also expressed his liking for piano playing and repeatedly informed me: 'Piano sound good' and 'I like piano sound' (Interview 1 – Dan-yao, Lines: 17, 26).

Dan-yao's Mum

Dan-yao's Mum had three children: Dan-yao and his two younger non-disabled siblings. She mentioned that she would treat Dan-yao 'as normal at home' (Interview 1 – Dan-yao's Mum, Line: 8), but she also acknowledged what mothering a disabled child entails (Rogers, 2011). She said: 'Being parents of a child with DS, we must be really tough and strong because we face a lot of difficulties not only with their health problems, but also with their educational and cognitive problems' (ibid., Lines: 2-4). However, through our conversation, she had given me the impression that she was rather reluctant to admit Dan-yao's impairments. Nevertheless, she had expressed her hope that Dan-yao's hearing could improve through learning to play the piano. Furthermore, she added: 'I believe he still has the right to learn ..., even if he's not very clever nor hears very well' (ibid., Lines: 36-37).

4.5.1.2 Previous Learning Environment and Performance

Dan-yao began learning the piano with Ms Da-fan two months before the start of this project. The teacher informed me: 'I [taught] Dan-yao the same way as my other students with or without DS' (Interview 1 – Ms Da-fan, Lines: 63-64). At first, she was unaware of the boy's hearing impairment. She recalled: 'I just sensed that he wasn't responding most of the time' (ibid., Lines: 42-43). It was not until two lessons had passed before Dan-yao's Mum, who, according to Ms Da-fan, seldom accompanied her son to the lessons, informed the teacher about Dan-yao's auditory impairment. To compensate for Dan-yao's deficit, Ms Da-fan said that she had spoken more loudly during the lessons, repeated each sentence several times, and played the piano louder and slower.

Ms Da-fan related that the previous lessons involved identifying high and low pitches, singing and dancing. Although she felt that every lesson appeared the same to Dan-yao, she noticed how ‘he would keep smiling when he was making sound from the instrument’ (ibid., Lines: 50-51). She reflected: ‘He enjoyed the lessons. He liked the sound’ (ibid., Line: 67). However, she believed that his hearing impairment had led to his incapability of remembering the tunes, and this was one of the reasons why Ms Da-fan felt Dan-yao’s progress was extremely slow.

Dan-yao’s Mum also confirmed that Dan-yao liked the sound of the piano. She recounted: ‘He sat in front of the electric piano at home and played for fifteen minutes every day. Just random notes of course, but he was enjoying and devoted to it’ (Interview 1 – Dan-yao’s Mum, Lines: 53-54). However, it seemed that the parent was not actively involved, for she said: ‘I would listen to him when he played, although I wouldn’t be sitting next to him’ (ibid., Lines: 60-61).

4.5.2 Adopting a Pedagogical Approach

4.5.2.1 Choice of Pedagogy

The process of deciding on a suitable intervention for Dan-yao was rather complicated.

His hearing impairment was Ms Da-fan’s primary concern because she said:

Dan-yao’s weak hearing condition meant that he was unable to identify the differences in pitch [and] he felt frustrated when he had to match the notes on the score with the correct piano keys.
(Interview 1 – Ms Da-fan, Lines: 56-58)

After our discussion in the pedagogical intervention tutorial, Ms Da-fan agreed that Dan-yao would need to depend more on visual materials to learn the notes and the keys. I suggested using the ‘alpha notation’ developed by the Melody Organisation. The

right-hand notes on this notation are highlighted in red and the left-hand notes in green (Melodymusic, 2012c), but Ms Da-fan innovatively proposed to incorporate Cantan's (2017) idea of 'colourful keys' by having both the notations and the piano keys correspondingly colour coded. She explained: 'I know Dan-yao loves drawing, which means he could be quite sensitive with colours, so I hoped a colourful keyboard would stimulate his creativity further' (Interview 2 – Ms Da-fan, Lines: 7-9). Besides these two interventions, I also recommended another teaching resource from the Melody Organisation (Melodymusic, 2012b) to Ms Da-fan: 'improvisation'. Dan-yao's Mum had mentioned in her first interview how much Dan-yao enjoyed drumming out random notes on his piano. Therefore, besides learning well-known tunes, Ms Da-fan could encourage him to compose more of his own melodies.

Once it had been decided that Ms Da-fan would experiment with the combination of these methods¹⁴, I then reproduced the scores of 'Mary Had a Little Lamb' (Figure 4.5) and 'Hide and Seek' based on Melody's 'alpha notation'. To make these scores more colourful, I had amended them using Alexander Scriabin's (1872-1915) colour scheme (Harrison, 2001) to represent the corresponding keys (Figure 4.6). Ms Da-fan and I had also prepared together two sets of coloured stickers to be stuck onto the piano keys: one set for the piano in the lessons, and the other set to be given to Dan-yao's Mum for Dan-yao's electric piano at home.

¹⁴ See Chapter 2 (§2.6.3 and §2.6.4) for full description, and Appendix 3 (pp.220-221) for summary.

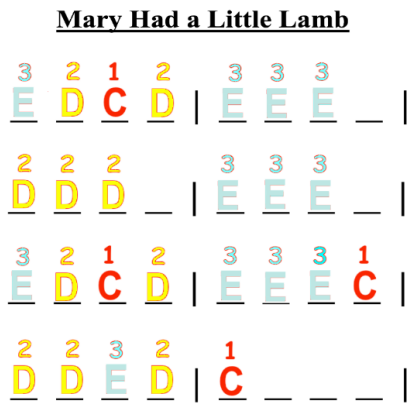


Figure 4.5: Modified alpha notation of ‘Mary Had a Little Lamb’

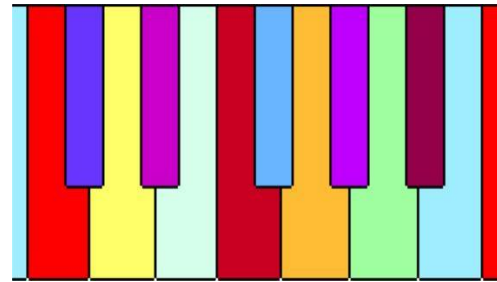


Figure 4.6: A coloured keyboard based on Scriabin’s colour scheme

4.5.2.2 The Lessons Observed

Group Durian’s lessons also took place at the Macau Down Syndrome Association¹⁵ but at a different time to Group Coconut. Prior to each lesson, Ms Da-fan stuck the coloured stickers onto the piano keys. During the lessons, Dan-yao sat on the piano bench in front of the piano while Ms Da-fan sat on his right on a chair, and Dan-yao’s Mum sat on the left. As the observer, I sat behind them at the opposite end of the table that was laid across the centre of the room. One sheet of music score could be seen in Lessons 1 and 3, while in Lesson 5, there were two music scores. In Lesson 1, Ms Da-fan had on the table a set of coloured stickers. In Lesson 3, she put on it several pieces of chocolate, and in Lesson 5, one piece of chocolate.

As observed in Lesson 1 (Observation L1 – Group Durian, pp.1-2), the colourful piano keys caught Dan-yao’s attention when he arrived. Ms Da-fan explained to him how each note had its own colour before asking him to compose a melody from the colours that he liked. Dan-yao then improvised some lively rhythms with the note D, which

¹⁵ See §4.4.2.2 for the description of the room.

was stickered in yellow¹⁶. He told us that this was his favourite colour. Ms Da-fan then showed him the music score of ‘Mary Had a Little Lamb’ in the form of a colourful ‘alpha notation’. She explained to him that the colours on the keyboard were the same as the colours on the score. After demonstrating how to play this melody, she then led his right hand onto the piano keys with his thumb on the red Middle C. By the end of the first lesson, Dan-yao had managed to play the first few notes, with Ms Da-fan pointing at each note on the score. In this lesson, Ms Da-fan gave Dan-yao’s Mum a set of colourful stickers to be stuck onto Dan-yao’s electric piano at home. She also advised the parent of the specific arrangement of these stickers on the piano keys (Observation L1 – Group Durian, p.3).

I noticed that as the lessons progressed, Dan-yao had become quite familiar with the colour coding. By Lesson 5, he had managed to memorise the first half of ‘Mary Had a Little Lamb’ as well as playing the whole of ‘Hide and Seek’, which he started learning in Lesson 4, with Ms Da-fan guiding him. Although Ms Da-fan noted that in Lesson 2, ‘Dan-yao was reading the notes very slowly’ and ‘needed time to match the colours’ (Diary – Ms Da-fan, Lines: 26-27), she concluded after the fifth lesson: ‘His reaction from score reading to playing on the keyboard was faster than before’ (ibid., Line: 47), a sentiment that I had as I was observing Lesson 3 (Observation L3 – Group Durian, p.3). The teacher was also aware that Dan-yao preferred improvising to memorising the notes and the fingerings. She wrote: ‘I hope he could get a balance between them’ (Diary – Ms Da-fan, Line: 46).

¹⁶ The musical notes with their corresponding colours are listed in Group Durian’s observational field notes of Lesson 1 (See Appendix 11, p.278).

4.5.2.3 Home Practice

According to the entries in Dan-yao's Mum's diary, Dan-yao had been persevering with his piano exercise at home, practising for up to thirty minutes on most days. His mother reflected: 'He could really stay a long time at the piano' (Diary – Dan-yao's Mum, Line: 16). Apart from the two days when Dan-yao's practice was overseen by his father, Dan-yao's Mum had been persistently supervising his practice sessions. She noticed that at times, Dan-yao would rather improvise than to practise the melodies learnt in class. She related that because she had been joining in the lessons, she could remember the lesson content, thus she 'could tell if Dan-yao wasn't practising the homework given by Ms Da-fan' (Interview 2 – Dan-yao's Mum, Line: 27). She noted that on one occasion as she tried to persuade Dan-yao to practise the taught pieces before improvising, he became very stubborn and angry. To avoid further tension, the mother changed her strategy. She wrote: 'I let him improvise first, then we played each piece three times' (Diary – Dan-yao's Mum, Line: 80). One evening during practice, Dan-yao's Mum videoed Dan-yao as he was improvising on his piano. She made the recording because at that moment, Dan-yao 'looked like a real pianist ... with so many facial expressions' (ibid., Lines: 35-36).

4.5.3 Reflections on Group Durian's Findings

4.5.3.1 Influence on the Student's Performance

Dan-yao's difficulties in matching the notes on the score with the piano keys and in remembering the tunes seemed to have hindered Ms Da-fan's expectation of progress. During the first two months when Dan-yao was learning the piano, Ms Da-fan had not

managed to teach him any melodies. Since colours were applied, changes were noticed by the teacher, the parent, and me as an observer.

In Lesson 1, Dan-yao's reaction when he discovered the coloured stickers on the piano keys seemed to reflect his fascination with the new additions. I saw him happily touching and carefully checking each key, and calling out the name of the colour whenever he touched on a key with the colour he recognised (Observation L1 – Group Durian, p.1). He seemed equally impressed with the 'alpha notation', for when he saw it the first time, he said the paper was colourful, and I felt that although he was not familiar with all the colours, he was paying attention (ibid., p.3). In Lesson 3, when Ms Da-fan asked him to try and play 'Mary Had a Little Lamb' without looking at the score, I saw Dan-yao reminded himself 'thumb on red' and placed his right thumb on the red Middle C (Observation L3 – Group Durian, p.2). In five lessons, Dan-yao succeeded in learning two pieces of music, a feat which Ms Da-fan thought would have been unachievable if Dan-yao was to continue using traditional scores.

It also appeared that since the change of strategy, Dan-yao had become even more enthusiastic about piano playing within and outside the classroom. Dan-yao's Mum said: 'I think he's more devoted in learning the piano now' (Interview 2 – Dan-yao's Mum, Line: 4). I noticed how he enthused about coming to Ms Da-fan's piano lessons, as exemplified by how he happily exclaimed 'we play piano now' the moment he entered the room in Lesson 3 (Observation L3 – Group Durian, p.1), or how he rushed into Lesson 5 because he was late (Observation L5 – Group Durian, p.1). His mother recorded this incident: 'We were a bit late today because of the traffic. Dan-yao was so worried that he kept saying "faster faster" in the car' (Diary – Dan-yao's Mum, Lines: 95-96). Also recorded in the mother's diary was how persistent Dan-yao was

with his home practice, which was reflected in his performance in the lessons, making Ms Da-fan remark: 'I could tell, even before his parent told me, that he must have practised every day' (Diary – Ms Da-fan, Lines: 33-34).

Both Ms Da-fan and Dan-yao's Mum seemed to have noticed a transformation in Dan-yao's behaviour, in that he had become more talkative and sociable. The teacher reflected:

He used to be a quiet student. Since then, he's been expressing his opinion more and talking more, even though only in single words. He even told me he liked chocolate more than sweets. (Interview 2 – Ms Da-fan, Lines: 28-30)

Similarly, the mother recalled: 'He talked a lot more to me and my husband, and he played with his brothers more now' (Interview 2 – Dan-yao's Mum, Lines: 8-9). As an observer, I too had detected a change. In his second interview, his reply to question 1 was long and elaborate: 'I — like — my piano colourful — we stick stickers — I want more stickers' (Interview 2 – Dan-yao, Line: 3).

After five weeks, Ms Da-fan summed up Dan-yao's impression of the lessons: 'He liked the lessons because they were full of colours. He couldn't hear well so I think the colours guided him more when he played' (Interview 2 – Ms Da-fan, Lines: 23-24). Dan-yao's Mum confirmed: 'His smiles and excitement and devotion in playing told me clearly that he enjoyed the lessons and the practices' (Interview 2 – Dan-yao's Mum, Lines: 13-14). From the video taken by Dan-yao's Mum, I could see that the tempo of Dan-yao's improvisation was slow, but the music would become faster whenever he seemed excited (Observation L3 – Group Durian, p.1). Ms Da-fan reflected: 'Dan-yao was playing happily, and he kept smiling at the camera and his mother' (Diary – Ms Da-fan, Lines: 31-32). When I asked Dan-yao about the re-designed lessons, his

response was accompanied by a playful mimicry. He said: 'I play piano — like this', swinging his head and pretending to be a pianist, while making different facial expressions (Interview 2 – Dan-yao, Line: 6).

4.5.3.2 Teacher's Thoughts on the Lessons

Previously, Ms Da-fan did not use any specific teaching material except to raise her voice when speaking, and to play the piano more loudly and slowly to counteract Dan-yao's difficulties in hearing. This seemed to indicate that she lacked the knowledge about Dan-yao and his experience of hearing impairment. She confessed: 'I'm ... a bit confused whether he could understand me' (Interview 1 – Ms Da-fan, Lines: 58-59). After utilising the colourful keys and notations, Ms Da-fan noticed some changes. After just one lesson, she noted: 'Dan-yao looked happier than the previous lessons' (Diary – Ms Da-fan, Line: 20), and that he was 'stimulated by the colours' (ibid., Line: 18). On a personal level, she wrote: 'I felt good for being well-prepared' (ibid., Line: 20). Her satisfaction seemed to suggest that she was acknowledging how appropriately chosen pedagogies could effectively bring out Dan-yao's musical potentials. Seeing Dan-yao's happy face, she noted: 'I felt good ... for being able to bring joy to my student, making him so happy' (ibid., Line: 21).

It seemed that Ms Da-fan had also gained a better understanding of Dan-yao's Mum. Ms Da-fan informed me of the previous situation: 'Usually, it was their domestic helper who brought Dan-yao to the lessons' (Interview 1 – Ms Da-fan, Lines: 74-75). Therefore, teacher-parent communication was lacking, resulting in Ms Da-fan's delay in discovering Dan-yao's hearing impairment. Since the joining of Dan-yao's Mum in the lessons, Ms Da-fan began to realise the parent's difficulties. She said: 'I understand

that [Dan-yao's Mum] has another two sons to look after, so it's a real challenge for her to come in every week' (Interview 2 – Ms Da-fan, Lines: 35-36). Thus, she expressed her appreciation for the parent's effort.

4.6 Concluding Remarks

In this chapter, the four case studies in the research have been intrinsically examined, each with a thick description that was specific to that particular case study. Yet each case study was instrumental in that it provided insight into the topic of my exploration. These instrumental case studies undergo a cross-case analysis in Chapter 5, in which their data are compared thematically to seek out their similarities and differences.

Chapter 5: Analysis and Discussion

5.1 Introduction

This chapter brings together the literature and findings from the data across the four case studies to provide an analysis and discussion of the issues relating to the piano teaching and learning for children with DS in Macao. These issues arise from themes that were developed inductively from the collected data, and respond to the four research questions underpinning this study.

5.2 RQ1: What are the experiences and perceptions of piano teachers when teaching students with DS in Macao?

The cross-case analysis of the themes identified in each case study highlighted a set of themes that related to the teachers' experiences and perceptions of the situation from before their participation in this research. These themes, together with their codes and group association of the sub-codes are presented in Table 5.1.

Themes	Codes	Sub-codes	A ¹⁷	B	C	D
Qualifications and Experience	Training to teach students with DS	Unavailability of courses in Macao	✓	✓	✓	✓
		Lack of professional training in Macao	✓	✓	✓	✓
	Experience in teaching students with DS	No previous experience	✓		✓	
		Experience with other forms of SEND	✓	✓		
Difficulties in Teaching	Inadequate experience in pedagogical modification	Cognitive conditions	✓	✓	✓	✓
		Health issues	✓	✓		✓
	Behavioural problems	Stubbornness affects progress	✓	✓	✓	
		Restlessness and/or inattentiveness	✓		✓	
	Parents being an obstacle	Not open enough about conditions of student and lack of communication	✓			✓
		Interruption to lessons	✓			
Personal Beliefs	Motivation versus satisfaction	Students' love for music	✓	✓	✓	✓
		Human rights	✓			
		Satisfaction with support of piano pedagogies	✓	✓	✓	✓
Interpretation of Students' Musicality	Students' aptitude	Good musical memory	✓	✓	✓	
		Pitch sensitivity	✓			
		Musically talented/gifted		✓		✓
Sociocultural Influence	Lack of governmental support	Lagging behind Hong Kong in facilities for SEND	✓			
		Not enough support for teachers of SEND		✓		
		Inadequate aid for parents			✓	
		The need to educate the public				✓

Table 5.1: Themes and codes related to the teacher participants' experiences and perceptions of teaching students with DS in Macao

¹⁷ In this and in the subsequent Tables 5.2-5.4, 'A' represents Group Apple; 'B' represents Group Banana; 'C' represents Group Coconut; and 'D' represents Group Durian.

5.2.1 Theme – Qualifications and Experience

Training to teach students with DS

Information from the teachers' first interviews indicated that they were well-qualified as instrumental music teachers. They had either a bachelor's degree in Music Education (Ms Bai-xue and Ms Da-fan), or an ABRSM certificate (Ms An-ling), or both (Ms Chi-yan), with two to eight years of piano teaching experience. Yet, none of them had any professional training in teaching instrumental music to students with SEND. They were unanimous in pointing out that in Macao, such training or related courses were unavailable, underlining a situation that is not only unique to this city, but is reflected in research on this phenomenon in the US (e.g., Delaney, 2016; Shelfo, 2007; Vinciguerra, 2016), and in Hong Kong (e.g., Wong and Chik, 2015; 2016a; 2016b). Without relevant training, the teachers would not have had the opportunity to learn about disabilities nor the skills necessary for adapting music instruction and materials to support individual learners, or to experiment with various teaching methods and strategies (Delaney, 2016; Shelfo, 2007). Further still, the teachers' attitudes would without doubt be framed by the negative social and cultural understanding of disability, including a lack of recognition of disabled people as musicians in their own music training and general understanding. Thus, from a social model perspective, the students, arguably, are being disabled by the teachers' attitudes, lack of knowledge and insufficient training in SEND.

Experience in teaching students with DS

The interview data also showed that the experience of teaching students with DS differed between the four teachers. Ms An-ling and Ms Chi-yan had no experience

prior to participating in this research, although Ms An-ling had among her students, two learners with other SEND. Similar to the argument above, their students with DS can be viewed as being disabled by the teachers' lack of experience. By comparison, Ms Bai-xue and Ms Da-fan were more experienced because they had other students with DS besides Bu-ran and Dan-yao. Ms Bai-xue had the most experience because prior to becoming a freelance piano teacher, she had taught in a mainstream school that included students with SEND. Yet, even with experience, their lessons with the student participants seemed to indicate that they still had not tried or were unable to create a learning environment that would make piano learning more accessible to their students with DS. This, again, can be ascribed to their insufficient training in teaching disabled students.

5.2.2 Theme – Difficulties in Teaching

Inadequate experience in pedagogical modification

References on DS stated that most of the children have moderate learning difficulties (e.g., Altenmueller, 2007; Martin, et al., 2009; Selikowitz, 2008), and two of the parents openly confirmed this regarding their respective child (Chao-chao's Mum and Dan-yao's Mum). Interestingly, this characteristic had promoted the teachers to make comments, possibly assumptions, about students with DS's learning styles. Compared to non-disabled students, Ms An-ling and Ms Bai-xue commented on the need for extra patience (time) when teaching students with SEND in general (Norwich and Lewis, 2005; Rix and Sheehy, 2014), while both Ms Chi-yan and Ms Da-fan considered students with DS to be extremely slow learners. The teachers seemed to recognise certain differences between non-disabled students and students with DS, with Ms An-ling and Ms Da-fan also acknowledging their students' health conditions and had made

certain adjustments to their lessons: Ms An-ling said that she was conscious of not making Au-na too excited because of the child's heart problem, while Ms Da-fan spoke and played the piano louder because of Dan-yao's hearing impairment. But they all admitted that they did not have a teaching method specifically for teaching students with DS. Not having a suitable teaching strategy to make reasonable accommodations can again be ascribed to the teachers' lack of appropriate professional training, since this inadequacy is considered by researchers as the reason for the teachers' unpreparedness (Hourigan, 2007; Pontiff, 2004), and for their insufficient knowledge and skill to develop suitable inventions for their students (Darrow, 2009). Consequently, the four teachers noted that, prior to this study, they only employed similar teaching methods to those that they used to instruct their non-disabled students. Although from a social model perspective, not having suitable inventions to accommodate the students' learning profile would be considered disabling for the students (Olkin, 1999; UPIAS, 1976), yet using regular teaching methods may not necessarily be futile as, according to Rix and Sheehy (2014), the provision of extra time and space are the key elements when teaching students with SEND.

Behavioural problems

All four teachers remarked in their first interviews on their students' slow progress in terms of their performing skills. Three teachers coincidentally ascribed this slow progress to the stubborn behaviour they perceived in their student. Ms An-ling recalled how difficult it had been to correct Au-na's mistakes, as she needed to practise with Au-na incessantly before an error would get amended. Ms Bai-xue related how Bu-ran would stubbornly refuse to wear her glasses so she was unable to read music, while Ms Chi-yan found Chao-chao's persistent unwillingness to sit still on the piano bench a

hindrance to his progress in learning the melodies. Furthermore, inattentiveness was also displayed by Au-na and Chao-chao. Ms An-ling mentioned that Au-na could easily be distracted, and Ms Chi-yan, in her Interview 1 (Line: 54), described Chao-chao as ‘inattentive and stubborn’. Generally, these behavioural characteristics could negatively affect students’ progress in learning (Feeley and Jones, 2007; NDSS, 2021).

Ms Da-fan did not associate Dan-yao with stubbornness, and she considered learning difficulties and hearing impairment to be the reasons behind his unsatisfactory progress. Yet, stubbornness was observed in Dan-yao’s Mum’s diary about their home practice. The association with stubbornness supported existing research and reports that listed this particular behaviour as a common concern in children with DS (e.g., Altenmueller, 2007; Feeley and Jones, 2007). But this stubbornness could be interpreted as being the child’s way of showing frustration or lack of understanding (NDSS, 2021), which could imply that the teaching methods used by the teachers were unsuitable. When Ms Bai-xue said in her Interview 1 (Lines: 87-88): ‘I would love to try any methods that could effectively help [students with DS] learn and progress’, it seemed that she was thinking in line with the social model perspective. But still, before this project, she and the other three teachers all ascribed the unsatisfactory progress of their lessons to the students based on their individual deficit and medical model perspectives, rather than to their own deficit in teaching and lack of knowledge in adapting suitable pedagogies to accommodate their students’ characteristics.

Parents being an obstacle

Although the parents were not required nor expected to play an active role prior to the project, it was interesting to see how their previous conduct had generated contrasting opinions from the teachers. It can be gathered from the teachers’ first interviews that

both Bu-ran's Mum and Chao-chao's Mum had openly discussed their child's condition with Ms Bai-xue and Ms Chi-yan, respectively. These two parents exemplified positive parental involvement (Hornby and Lafaele, 2011), and emphasised the importance of constructive communication for helping teachers understand their students' circumstances (Scott, et al., 2007). Conversely, the lack of cooperation and agreement between educators and parents can make the parents' participation ineffective (Hornby and Lafaele, 2011), as demonstrated by the other two parents. In Ms An-ling's and Ms Da-fan's opinions, parents at times could cause complications for their teaching. In these two groups, the teachers' first interviews revealed that there was a lack of constructive communication between the teacher and the parent. Ms Da-fan said that she was not informed about Dan-yao's hearing impairment in the beginning, so she had been unable to help the student appropriately from the start, while Ms An-ling felt Au-na's Mum reluctant to discuss Au-na's condition. She explained: '[Au-na's Mum] has always been trying to present the daughter as normal as possible in front of me ... she would say that Au-na could understand everything I taught but she's just too lazy to perform' (Interview 1 – Ms An-ling, Lines: 48-50).

At this stage, it was the parents' own will if they wished to remain in the room during the lessons with no specific expectations from the teachers. This seemed to suggest that the teachers did not feel parents' participation was necessary, although this would also highlight their unawareness of the importance of positive parental involvement in a child's music learning (Creech and Hallam, 2003; Davidson, Sloboda and Howe, 1995; Uptis, et al., 2017). While Chao-chao's Mum managed to earn Ms Chi-yan's admiration when she joined in the exercises voluntarily and assisted the teacher in keeping Chao-chao disciplined, Au-na's Mum's occasional involvement was disapproved by Ms An-ling because the lessons would then be interrupted by the

mother's inappropriate scolding of the child. Au-na's Mum's action could perhaps be considered a tiger parent's characteristic, projecting an authoritarian image (Chua, 2011). But in whichever way the parents behaved towards their child in the lessons, whether it was appropriate or disruptive, it could perhaps be interpreted as, in their opinion, the appropriate way of 'mothering' a disabled child, in whatever the situation.

5.2.3 Theme – Personal Beliefs

Motivation versus satisfaction

The teachers recognised some fundamental differences between students with DS and non-disabled children, which could perhaps be regarded as a source of motivation for them to teach students with DS, despite not having the professional training in SEND. Both Ms Bai-xue and Ms Da-fan agreed in their first interviews that students with DS joined piano classes because they genuinely love music, because, to quote from Ms Bai-xue's observation in her Interview 1 (Line: 85): '[Students with DS] are very stubborn people who can't be forced to do anything.' Ms Da-fan also noted that unlike most non-disabled students in Macao, students with DS are not forced by their parents to learn the piano. Consequently, Ms Bai-xue believed that teaching them could bring her happiness and satisfaction. Ms Chi-yan also expressed that teaching Chao-chao gave her the impression that students with DS do enjoy music, although according to Selikowitz (2008), children with DS do not necessarily like music, but have a variety of interests; therefore, such generalisation is not advisable. Ms An-ling, besides recognising Au-na's love of playing the piano, gave another reason for her own motivation: her hope to make a difference in these children's lives (Wolf, Adderley and Love, 2018). In her Interview 1 (Line: 44), she emphasised the importance of human rights, saying: 'I think everyone should have the right to learn musical instruments.'

Ms An-ling was the only teacher who touched on the issue of ‘rights’. But since all four teachers were involved as volunteers in the Macau Down Syndrome Association, their involvement can be indicative of their concern with inclusion.

No matter how motivated teachers are, existing research pointed out that once tension increases between expectation and reality, their motivation often subsides and is replaced by dissatisfaction (Wolf, Adderley and Love, 2018). The teacher participants seemed to have encountered similar experience, for I noticed that, to them, satisfaction gained in teaching the students with DS was extremely important because their initial motivation could not continue unless there was enough satisfaction in return. The lack of progress, which the teachers ascribed to the students’ cognitive and/or health impairments, had led them to express in their first interviews a certain degree of dissatisfaction with the whole teaching process, as well as feelings of negativity. There were feelings of guilt and desperation (Ms An-ling), doubt and frustration (Ms Chi-yan), and confusion (Ms Da-fan). Yet, they did not seem to realise their preconceptions of their students had been based on medical model perspectives, and their approach to teaching them were also situated within the medical model. They concentrated mainly on the ‘medical problems’ rather than focusing on the possible strengths and creativity of their students. Whether the teacher would be motivated to continue teaching students with DS would depend on whether the results from adopting various pedagogies (to be discussed in RQ2) managed to give them the required satisfaction.

5.2.4 Theme – Interpretation of Students’ Musicality

Students’ aptitude

Past literature has frequently associated children with DS with music (Pickard, 2009; Stratford and Ching, 1983), and some studies supported the historical notion that musical aptitude found in children with DS could be innate (e.g., Edenfield and Hughes, 1991). In their first interviews, Ms An-ling and Ms Bai-xue commented on their respective student’s good memory in music, which some research seemed to recognise as an attribute of children with DS (e.g., Aschenbrenner, 2020c). In the second interviews, after having experimented with piano pedagogies for five lessons, each teacher shared her views on her student’s musical aptitude. Here, Ms Chi-yan also considered Chao-chao as having a good musical memory, for he managed to learn two pieces of music within a short space of time, despite the usual assumptions about being inattentive. Ms An-ling noted Au-na’s sensitivity in pitch because she was able to hum the tune while playing it on the piano. Ms Bai-xue considered Bu-ran quite talented and even regarded her ability in music to be comparable to any non-disabled child. Finally, Ms Da-fan appeared to be extremely impressed with Dan-yao as she described him as being ‘very musical’ and considered him as having ‘a special gift in music’ (Interview 2 – Ms Da-fan, Line: 41). It would be unjustifiable to affirm that musical aptitude is an inborn quality for children with DS by studying four students alone, but based on the teachers’ perceptions, it can at least be suggested that any children with DS can be just as musically talented as any non-disabled children. Yet, at the same time, we need to bear in mind that from the social model standpoint, whether or not the students with DS have any musical interest, the teachers should still create a suitable

environment for them to experience and enjoy music learning when the parents are trying to provide opportunities for them to explore.

5.2.5 Theme – Sociocultural Influence

Lack of governmental support

Questions on the city's support for students with DS in terms of music learning prompted feelings of discontent from all four teachers. They expressed disappointment in the availability of support and resources from the Macao Government, but each had different matters of concern and expectation. Ms An-ling compared Macao to Hong Kong and pointed out that in Hong Kong, there is an orchestra made up of students with SEND, whereas in Macao, there are very few choices of musical activities for children with SEND to participate. In this respect, Ms An-ling felt that the Government should provide more opportunities. Ms Bai-xue's concern was for those involved in working with students with SEND. Speaking from past experience of teaching music in a mainstream school that included students with SEND, she related how neither the Government nor the schools have provided extra time and resources for teaching these students to ensure they are not being neglected in acquiring new knowledge and skills. As stated by research (e.g., Gates and Mafuba, 2016; Isaksson, Lindqvist and Bergström, 2010), students with SEND require additional educational, social, and health care support. Thus, by not providing sufficient relevant support, it is, arguably, the government that has disabled the students, rather than the students' own impairments. Ms Bai-xue further observed that in these situations, teachers are under-prepared, and social workers are limited in numbers. This led to her saying: 'I disagree with inclusive education in Macao' (Interview 1 – Ms Bai-xue, Line: 24), a sentiment that seems to be shared by a majority of teachers about this educational reform in other

regions across the globe (Sharma, Forlin and Loreman, 2008), and in line with research that highlighted inclusive education being problematic for teachers (Kabashi and Kaczmarek, 2019). Although Ms Bai-xue said that she had made every effort to assist her students with SEND, she had to admit: ‘One person’s effort was not enough’ (Interview 1 – Ms Bai-xue, Lines: 31-32), further suggesting the inadequacy of support available in the city. Ms. Chi-yan’s concern, on the other hand, was for the parents of children with SEND. Using Chao-chao as an example, Ms Chi-yan said in her Interview 2 (Lines: 40-42): ‘I do think Chao-chao should have more training in speech expression, and therapy for psychological development.’ Yet, she noted that the cost for such therapy treatments in Macao can be expensive, and these necessities may eventually become a financial strain for many families. Therefore, Ms Chi-yan felt that the Macao Government should provide better support for parents of disabled children and individuals identified with SEND, a sentiment that is also evident with the parent participants (see §5.5.3 below). As for Ms Da-fan, she related a situation in her son’s school in her Interview 2 (Lines: 47-48): ‘The naughty students would bully those with SEND.’ This incident seems an indication of some existing problems with schooling, revealing peer rejection experienced by disabled students in mainstream schools as noted also by Mastin (2010) and Rogers (2007). To prevent similar scenarios, Ms Da-fan hoped that in addition to providing extra educational funding for students with SEND, the Macao Government would educate the public about the inclusion and acceptance of disabled people.

5.3 RQ2: What are the teachers' experiences of the impact of support with piano pedagogy on their working with students with DS?

The themes associated with this research question reported on the teachers' considerations when choosing piano pedagogies and on the influence that these strategies had on the teaching process. These themes and their related code and sub-codes are presented in Table 5.2.

Themes	Codes	Sub-codes	A	B	C	D
Pedagogical Choice	Targeting various characteristics	Certain degree of learning difficulties	✓	✓	✓	✓
		Sensory impairments		✓		✓
		Behavioural traits		✓	✓	
		Love to improvise				✓
		Ability to memorise music easily		✓		
Supportive Instructional Strategies	Reading	Music scores	✓		✓	✓
	Matching	Numbers and/or colours	✓		✓	✓
	Rote learning	Imitation/modelling		✓		
	Listening	Teacher's and/or parent's piano playing	✓	✓	✓	✓
		Music recordings		✓		
		Verbal instructions	✓	✓	✓	✓
Improvisation					✓	
Significant Student Development	Progress	Music learnt and memorised in a shorter space of time	✓		✓	✓
	Improved students' attitude	More focused	✓		✓	
		Less stubborn		✓		
		More attentive and cooperative	✓	✓	✓	
		More motivated				✓
Established Rapport with Parents	Appreciating parents' participation	Collaboration between teachers and parents	✓	✓	✓	✓
	Better understanding through communication	Parents' domestic lifestyle and concerns	✓			✓
		Teachers' expectations	✓	✓	✓	✓
		Reassuring parents' uncertainties	✓			
Achievement in Teaching	Enhanced teachers' self-esteem	Better equipped and well-prepared	✓	✓	✓	✓
		More confident	✓		✓	✓
		Pride	✓	✓	✓	
		Improved students' cooperation	✓	✓	✓	
		Sustained students' interest in learning	✓	✓	✓	✓
		Beyond expectation	✓		✓	

Table 5.2: Themes and codes related to the teacher participants' experiences of the impact of support with piano pedagogies

5.3.1 Theme – Pedagogical Choice

Targeting various characteristics

Each student in this project is a unique individual, only similar in that they are said to have a certain degree of learning difficulties as associated with DS, rendering their thinking and learning processes to be generally slower than non-disabled students (Selikowitz, 2008). As indicated in the first interviews, the teachers were aware of their student's conditions, so when deciding on a pedagogy for this project, they chose one or more methods that they considered appropriate in relation to their students' needs. Consequently, Ms An-ling chose Aschenbrenner's (2020a) concept of 'Piano by Number' based on her recognition of Au-na's difficulties in reading traditional music notation. As expressed in her second interview, she felt that a numerical notation would be easier for Au-na to follow. Similarly, Ms Chi-yan used numbers as referenced to Velásquez's (1991) idea of an iconic/symbolic representation, coupled with simple verbal instructions. She felt that reading traditional music notation would be impossible for Chao-chao because of his inattentiveness and restlessness. In line with Velásquez's experimentation, Ms Chi-yan focused on teaching melodies that contained only the black keys, which are considered to be easier for beginners to learn and remember because the fixed pattern of two and three black keys on the keyboard is easily impressed on a student's mind (Megan, 2019; Velásquez, 1991). Together with the use of numbers on the score to correspond with the fingers playing, and simple verbal instructions, Ms Chi-yan said that she hoped Chao-chao could grasp the concept more easily, and would become more attentive in the process.

Ms Bai-xue's pedagogical choice was primarily made in view of her student's sensory impairment. Research by Bauer (2003) and Altenmeuller (2007) suggested that

learning through listening is an effective way of helping visually impaired students to learn music. As such, Ms Bai-xue opted for the Suzuki method, which relies on listening and imitation, so that, in her opinion, Bu-ran's learning would not be deterred by her short-sightedness, nor by her stubborn refusal to wear glasses, which had hindered her ability to read music. Furthermore, Ms Bai-xue noticed that Bu-ran could memorise the music easily; therefore, rather than forcing Bu-ran to wear her glasses, Ms Bai-xue adopted an approach in which music reading is not encouraged at the early stage, but emphasises on memorisation (SAA, 2018; Suzuki Music, 2005).

Each of these three teachers focused only on one pedagogy with the element(s) they thought would be helpful, although in our intervention tutorials, I did not limit them to the number of pedagogies they could choose. I wondered if they could have incorporated elements from other pedagogies to explore their student's full potential, rather than targeting the one characteristic that they felt was the barrier to learning for their student. Ms Da-fan, on the other hand, realising that Dan-yao should depend more on visual materials to compensate his hearing impairment (Altenmueller, 2007), decided to combine Melody's 'alpha notation' (Melodymusic, 2012c) and Cantan's (2017) 'colourful keys' concept. She based her decision on knowing that Dan-yao enjoyed drawing; therefore, she felt the use of colours could be motivational. Acknowledging that Dan-yao preferred improvising, she also accepted my suggestion to include this form of playing in the lessons, and said in her second interview that she hoped a colourful keyboard would inspire Dan-yao's creativity further. Unlike the other three teachers, Ms Da-fan had based her choice of pedagogies mainly on her student's strengths and interests. Thus, in comparison, her merging of different elements from different existing pedagogies had given rise to a more learner-centred pedagogy for her student (Mpho, 2018).

5.3.2 Theme – Supportive Instructional Strategies

Different piano pedagogies were chosen in each of the four case studies, yet certain supportive instructional strategies were shared, or could have been included in the teaching.

Reading

Except for Group Banana, the other three groups retained the element of music reading. But unlike traditional music notation, the notations in the adopted pedagogies were modified to offer students an accessible way to read music. Both the ‘Piano by Number’ method in Group Apple and the iconic/symbolic representation used in Group Coconut incorporated numbers in the music scores. Thus, the score used by Ms An-ling was represented by numbers only (see Figure 4.1 on p.92), while the score used by Ms Chi-yan had numbers substituting for the names of the notes (see Figure 4.3 on p.111). As for Group Durian, Ms Da-fan’s adaptation of Melody’s ‘alpha notation’ was further modified to have each name of the note and its number presented in a specific colour (see Figure 4.5 on p.119).

Matching

To complement the reading element, Ms An-ling and Ms Da-fan also modified their keyboards. Ms An-ling put numbered stickers on the piano keys, while Ms Da-fan put coloured stickers on hers. Subsequently, Au-na learnt the melody by matching the numbers on the piano keys with the numbers on the music score; similarly, Dan-yao learnt by matching the colours and the fingerings on the keyboard with those on the music score. Aschenbrenner’s (2020c) stated that children with DS are good with numbers, thus considered numbers to be an ideal medium for teaching them. But as

observed in Lesson 1, Au-na was not too familiar with Arabic numbers. It can also be observed that Dan-yao did not know the names of all the colours on the keyboard. Yet their respective teacher still found the matching strategy to be conducive to what she considered as significant improvement in the student's learning. Ms Chi-yan also used the matching strategy to help her student read and play music. Chao-chao had to match the numbers on the score with the corresponding fingers placed on the fixed position of the black keys. This matching strategy had enabled Chao-chao to 'play something on the piano' (Interview 2 – Ms Chi-yan, Line: 20). The outcome of matching visual elements, whether they were numbers or colours, appeared satisfactory, coinciding with findings in research which suggested children with DS have strong visual learning modalities, and are able to respond appropriately to visual stimuli (Altenmueller, 2007; Bunn, Roy and Elliot, 2007; NCSE, 2020).

Rote learning

An approach to teaching music to beginners is for students to learn by rote (Orlando and Speelman, 2012), and the data showed that prior to the research, Ms Chi-yan had made use of flashcards to teach Chao-chao the musical notes. But during the research period, rote learning was predominantly the approach used in Group Banana in accordance with the Suzuki method. In line with Suzuki's teaching strategy, which focuses on imitation and repetition (SAA, 2018; Suzuki Music, 2005; TERI, 1999), Ms Bai-xue did not give Bu-ran nor Bu-ran's Mum any explanation about music notation, and she taught without using scores. Bu-ran and her mother imitated how Ms Bai-xue moved her fingers from one key to another when playing the melody (e.g., Observation L3 – Group Banana, pp.1-2), and they repeatedly played the piece until they could execute it from memory. In the first two lessons, Ms Bai-xue was teaching Bu-ran's

Mum. The teacher wrote in her diary (Lines: 8-9): ‘I’ve decided to teach Bu-ran’s Mum first and let her be a model for Bu-ran. This is encouraged in the Suzuki method.’ It is said that children with DS have the tendency to model behaviour and attitudes from adults and peers (DSI, 2020), and after the first two lessons, Ms Bai-xue noticed Bu-ran’s urge to learn just as her mother did. She said: ‘Watching her mummy learn to play the piano has motivated Bu-ran a lot’ (Interview 2 – Ms Bai-xue, Line: 18). Although there are critics of the Suzuki method who maintain that rote learning is ‘a great obstacle to nourishing students’ individuality and artistry’ (Yoshihara, 2008, p.43), Ms Bai-xue found that when compared with the conventional learning by note, the rote learning approach had helped Bu-ran learn the music faster.

Listening

Ms Bai-xue taught Bu-ran by rote in the form of imitation. At the same time, she asked Bu-ran’s Mum to practise the melody at home in front of Bu-ran during the first two weeks and to play the recording of the same piece of music frequently, so that Bu-ran was constantly learning to play by ear as intended in Suzuki’s teaching philosophy (Thompson, 2018).

While listening was emphasised in Group Banana, this strategy was also in use in the other three groups as an auxiliary. In Lesson 1, Ms An-ling, Ms Chi-yan and Ms Da-fan demonstrated how to play the melody as their respective student watched and listened (e.g., Observation L1 – Group Apple, p.2). It was noteworthy that in comparison, Ms Da-fan’s demonstration was especially loud to ensure Dan-yao could hear the notes that she played (Observation L1 – Group Durian, p.2).

The four students also learnt by listening to and following the teachers’ verbal

instructions and reminders, which, as observed, were brief but clear and straightforward. This is in line with research that suggested teachers of students with DS need to give instructions using plain language and short sentences (Canton, 2017; NCSE, 2020; Rix and Sheehy, 2014; Watson, 2019) as a way to target the poor short-term memory that is said to associate with individuals with DS (Alton, 1998; DSE, 2021; Määttä et al., 2006). The brevity of verbal instructions was particularly noticeable in Group Coconut. Ms Chi-yan, in compliance with Velásquez's (1991) experimentation, reminded Chao-chao of the numbers only whenever he hesitated for more than two seconds during his performance. Her other instructions were also extremely short, such as 'come back' or 'continue' (Observation L3, Group Coconut, p.2). In addition to compensating for the possible short-term memory deficits, using short sentences is also in line with the findings of McAllister (2012) who stated that with inattentive students, teachers' verbal instructions should be reduced in length to facilitate the retention of information.

Improvisation

During the five-week research period, this strategy was in use only in Group Durian. As explained above (§5.3.1), Ms Da-fan included colours on the piano keys as visual stimuli to inspire Dan-yao's imagination and creativity in music, and accepted my suggestion to include improvisation as a strategy, occasionally allowing or encouraging Dan-yao to improvise. After Lesson 1, she noted in her diary (Line: 18): 'The colourful keys attracted Dan-yao a lot. He improvised, stimulated by the colours.' When Ms Da-fan was shown the video of Dan-yao improvising on his piano at home, she particularly noticed how happily he was playing. Dan-yao's performance was an indication that despite music being a sound base medium, children with hearing impairment could still

participate in and enjoy music making (Altenmueller, 2007; Comeau, Koravand and Markovic, 2018).

The use of improvisation was perhaps enabling Dan-yao to learn in line with the third model of learning outlined in Thompson's (2018) work, in that he was learning through experimentation and exploration of possibilities. At the same time, the strategy was in line with Cross's (2003) teaching in which creative improvisation is encouraged, and Ms Da-fan's perception of Dan-yao's expressive display aligned with the notion that improvisation allows children with learning difficulties to express their feelings uninhibitedly in music (Melodymusic, 2012b). Thus, the other teachers could have included improvisation in their lessons to further their students' creativity and, as stated by McCullough (1997 cited in See, 2011), to enable them to communicate their feelings through music.

5.3.3 Theme – Significant Student Development

Progress

Regarding the students' piano learning, there was one characteristic that the teachers unanimously pointed out – the students' slow progress, which tends to be a consensus among research based on medical perspectives (e.g., DSE, 2021; Selikowitz, 2008). As discussed in the Findings chapter (Chapter 4), each teacher had her own perception of what progress entailed: Ms An-ling's perception was for Au-na to be able to recognise the subtle positional changes of notes on the notation; Ms Chi-yan's perception was for Chao-chao to become more attentive to her instructions; Ms Da-fan's perception was for Dan-yao to be able to match the notes on the notation with the piano keys, and to remember the tunes. Ultimately however, the expected goal of these three teachers was

to have their respective student learning more melodies quicker.

The assessment by Ms An-ling, Ms Chi-yan and Ms Da-fan of their respective student's progress at the end of the five lessons seemed positive because they noticed an improvement when compared with the standard before participation in this research. Au-na, whom Ms An-ling said, needed six months to learn two songs previously, had managed to learn a complete melody and memorise much of it in the space of five lessons, prompting Ms An-ling to reflect: '[Au-na] learnt the music faster than before' (Interview 2 – Ms An-ling, Line: 15). According to Ms Chi-yan, Chao-chao had not managed to play a complete tune in his initial three months of piano learning. As observed, he succeeded in learning two melodies in these last five lessons. Similarly, Ms Da-fan had not managed to teach Dan-yao to play any melody in the two months that he had been learning. Since the introduction of the pedagogies, Dan-yao had learnt two pieces of music, for which Ms Da-fan commented: 'I think he would be learning at a much slower pace if he had stuck with those traditional scores' (Interview 2 – Ms Da-fan, Lines: 18-19).

Unlike the three teachers above, Ms Bai-xue viewed progress differently. Originally, her perception of progress was for Bu-ran to improve her music reading skill. But in her Interview 2 (Lines: 40-41), she said: 'Progress may not be an important matter when teaching children with DS.' Rather, she was concerned with stimulating Bu-ran's interest in piano learning. Ms Bai-xue's latest perception and expectation were in line with the Suzuki method, which traditionally does not have a fixed timetable for advancement but proceeds according to the natural learning stages of each individual student (Lo, 1993). As music reading was not required, Ms Bai-xue said that she no longer needed to persuade Bu-ran to wear glasses, thus in adherence to Suzuki's

educational philosophy, a relaxed learning atmosphere was maintained (SAA, 2018; TERI, 1999).

Improved students' attitude

In the teachers' first interviews, Ms Da-fan was the only teacher who did not associate her student with a negative attitude towards learning, whereas the other three teachers considered their respective student to be stubborn and uncooperative in the lessons, often unwilling to do what the teachers wanted. For example, Ms An-ling remarked on Au-na being easily distracted; Ms Bai-xue related Bu-ran's persistence in refusing to wear her glasses, resulted in lesson time being wasted, and Ms Chi-yan commented on Chao-chao's unwillingness to sit still. Since adapting piano pedagogies and using different visual materials and strategies, Ms An-ling and Ms Chi-yan noticed their respective student gradually becoming more focused and willing to cooperate in the lessons, enabling them to learn the melodies quicker. For example, Ms An-ling reported that Au-na cooperated better and was less moody, while Ms Chi-yan found Chao-chao less inattentive and restless, noticing in Lesson 5 that he managed to play a complete melody before leaving the piano. Ms Bai-xue, whose concern for Bu-ran's progress was not focused on the student learning more melodies or learning faster, but on how the student would become intrinsically motivated to learn the piano, also said that she found Bu-ran less stubborn and more cooperative, as exemplified by Bu-ran happily wearing her glasses to the fifth lesson. The students' change of attitude could be seen as an indication that the previous strategies or exercises employed by the teachers were inappropriate or too difficult (Unlu, 2017; Wishart, 1993). These could create barriers to learning for the students, as they could cause the students to lose their concentration or focus (Unlu, 2017), or to adopt avoidance strategies (Wishart, 1993), as exemplified

by Au-na, whose unwillingness to perform difficult tasks was initially interpreted by Ms An-ling as stubbornness. Ms Da-fan, as mentioned, did not notice in Dan-yao the behaviour exhibited in the other three students, which their teachers considered to be a factor affecting the learning progress. But nevertheless, she too noticed the change of teaching strategy had affected her lessons with Dan-yao. She reflected in her Interview 2 (Line: 23): ‘He loved the lessons because they were full of colours’, indicating perhaps that she felt Dan-yao had been motivated by her adapted use of colours, which in turn, had further enhanced his attitude towards music learning.

The four teachers had adopted pedagogies with which they perceived, in their opinion, a better learning attitude being developed in their students. This improvement in learning attitude corresponded with research which suggested that students will only have the incentive to learn if they are satisfied with what they are learning and how they are being taught (Wu, Hsieh and Lu, 2015).

5.3.4 Theme – Established Rapport with Parents

Appreciating parents’ participation

Prior to this project, the degree of teacher-parent interaction varied as presented above (§5.2.2). Since parents’ points of view were also examined in this research, their participation in the learning process was expected, and this was in line with the advice offered by some of the music educators and researchers of the chosen pedagogies, in that parents should be encouraged to get involved in their children’s music learning (Cantan, 2017; Cross, 2003; Suzuki Music, 2005; Velásquez, 1991). This involvement appeared to have given the teacher participants better chances to establish rapport with the parents.

In their final interviews, all the teachers had expressed their satisfaction with having the student's parent joining in the lessons. Ms Chi-yan was already accustomed to Chao-chao's Mum being present, but she mentioned that she had noticed the mother looking more relieved since a pedagogy was used. The other three teachers had come to appreciate this parental involvement. Ms An-ling, who had earlier considered the parent's occasional presence to be rather disruptive, admitted that the last five lessons did run more smoothly with the mother's help in managing Au-na's emotions or clarifying her expressions. Ms Bai-xue appreciated Bu-ran's Mum in her role as a model in helping to motivate Bu-ran to learn. Furthermore, she, Ms Chi-yan and Ms Da-fan were also grateful for the parents' persistence in supporting their child's practice at home as the teachers noticed how much their students had improved in the lessons. The teachers' appreciation indicated their acknowledgement that part of the students' improvement needed to be credited to their parents for their committed involvement in lessons and practice, producing satisfactory results in line with the findings of existing research (Briscoe, 2016; Creech and Hallam, 2003; Davidson, Sloboda and Howe, 1995; Upitis, et al., 2017; Yussof, et al., 2016).

Better understanding through communication

Through improved communication, two of the teachers came to know about the parents' family difficulties and concerns, and they became more understanding. This is in line with the findings of Scott, et al. (2007), which asserted that any form of communication between teachers and parents would help teachers understand more about their students' and parents' situations. Ms An-ling was told by Au-na's Mum in Lesson 4 about how her busy schedule and Au-na being unwell had hindered their home practice, thus resulted in Au-na's slow reaction that day. This made Ms An-ling reflect in her diary

(Lines: 56-57): 'I understand that unpredictable circumstances do happen in life', and she was prepared to adjust her lesson plan to accommodate her student's condition. Ms Da-fan discovered that Dan-yao's Mum had to look after three sons, thus she began to understand why previously, the mother had to rely on their domestic helper to bring Dan-yao to the lessons. This made Ms Da-fan appreciate the fact that it was a challenge for Dan-yao's Mum to be joining in the lesson every week.

All the teachers had discussed the lesson contents and progress with the parents at the end of each lesson and conveyed their expectation of the parents to practise with their child at home. During these conversations, problems encountered by the parents could also be resolved, as exemplified by Group Apple. As observed, Au-na's Mum had expressed her concern about Au-na not behaving at home because the mother was not her teacher. Ms An-ling reassured her that such situation was normal and parent's effort in motivating the child to practise was essential. Her reassurance seemed to have made Au-na's Mum feel less anxious and slightly more relieved. I further observed that Ms An-ling had offered Au-na's Mum some suggestions on appropriate parental behaviour, gently reminding her to be more patient with Au-na rather than scolding her. Ms An-ling's advice was in line with the findings of Kim (2013) in relation to tiger parenting, in that tiger parents should replace yelling with reasoning when disciplining children to avoid causing emotional stress for the child. This increase of regular and constructive communications reflected effective parental involvement (Davidson et al., 1996; Hornby and Lafaele, 2011), and were in line with other researchers' advice on the importance of teacher-parent interaction in ensuring the musical progress of disabled children (e.g., Cross, 2003; Scott, et al., 2007).

5.3.5 Theme – Achievement in Teaching

Enhanced teachers' self-esteem

As discussed above (§5.2.1), the teacher participants did not receive any training in teaching students with SEND. In many ways, the teachers were typical of many teachers without training and entering into unfamiliar experiences. It was noticeable that these teachers often adopted medical model perspective of the students, using individual deficit understandings of learning (Comber and Kamler, 2004). In other ways, their teaching approaches with the students were experimental, often relying on their own instincts and guess work, or using the same methods as with all their other students. They appeared to be unfamiliar with the requirements and expectations around making reasonable accommodations, with using learner-centred pedagogies (ibid.), being sensitive to terminology, and understanding of the sociocultural aspects of learning and what this entails (ibid.). In some sense, while the teachers were quick to 'blame' the individual, it is understandable that they themselves could likewise be labelled as having teaching difficulties (Kikabhai, 2018). Without awareness or sufficient knowledge of the pedagogies, they had previously experienced difficulties in supporting their respective student with DS to progress satisfactorily, thus, some became self-doubting. For example, Ms Chi-yan said, in a frustrated tone: 'I really don't want to be the one who makes [Chao-chao] hate the piano in the future' (Interview 1 – Ms Chi-yan, Lines: 66-67).

According to Mbuva (2016), the quality of teachers' self-esteem often determines how they evaluate themselves in the educational field, and consequently influence how they teach. Since working with pedagogies suited to each student's learning profile, the teachers were able to conduct more constructive lessons as reflected in my

observational field notes. Evidence from the entries in the teachers' diaries showed that they had equipped themselves with the knowledge of their chosen pedagogies. Not only did they study the methods, but they also noted down feedback and reflection on each lesson. Ms An-ling had even mapped out individual lesson plan, and such planning was in accordance with Crappell's (2019) advice for proactive management in the classrooms to achieve efficiency and effectiveness. By scaffolding and working with materials and exercises that they felt to be within their students' capabilities (Wood, Bruner and Ross, 1976), two of the teachers seemed to find their student performing beyond their expectations: Au-na's concentration and fast progress in Lesson 1 seemed so unexpected to Ms An-ling that the teacher described the lesson in her diary (Line: 19) as 'surprisingly interesting and smooth going', while Ms Chi-yan recalled that previously, she would never have thought Chao-chao could play the piano, yet he managed to learn two pieces of music in five lessons. As a result of the pedagogies, both Ms An-ling and Ms Da-fan considered themselves feeling more confident in front of their students. When Ms Chi-yan pondered in her second interview whether Chao-chao would soon need to learn to play on the white keys, this could perhaps be interpreted as a display of confidence, in that she felt confident in her teaching to be planning a new direction, as well as in Chao-chao's ability to continue learning. Ms An-ling and Ms Chi-yan, as well as Ms Bai-xue also noticed better cooperation from their respective student, and together with Ms Da-fan, they all seemed to have, to an extent, successfully sustained their students' interest in piano learning, as confirmed by the students themselves in their second interviews.

Three teachers had also expressed how proud they were about themselves and/or their students. Ms An-ling took pride in her student as she admitted in her diary (Line: 67) that she was 'touched' by Au-na's improved performance in the fifth lesson. Ms Bai-

xue, in her second interview, had said in a confident tone that she felt prouder of herself as a teacher, despite finding teaching with a specific method was time consuming, as it involved a large amount of preparation time. This comment seemed to imply that previously, not only was the learning environment unsuitable, but time and preparedness were also inadequate (Norwich and Lewis, 2005; Rix and Sheehy, 2014). However, Ms Bai-xue had said in Interview 1 that she wanted to try any methods to help her students with DS. Yet, it was evident that she did not have the knowledge of how to adapt. But once she was given support with new pedagogical ideas, she was willing to put in the time. Ms Chi-yan also prided herself, but at the same time, she was proud of Chao-chao, as well as Chao-chao's Mum. When Chao-chao managed to play 'Mary Had a Little Lamb' in Lesson 3 without guidance, Ms Chi-yan noted in her diary that she felt this was an achievement not just for herself and Chao-chao, but also for his mother, whose persistence with Chao-chao's practice had contributed to his accomplishment. The teachers' apparent growth in pride, indicative of their awareness of their own achievement, and in confidence are signs of positive self-esteem, which will hopefully affect their performance as teachers in a positive way (Mbuva, 2016).

At the end of the project, Ms An-ling, Ms Bai-xue and Ms Da-fan had expressed their gratification about the participation. Ms Da-fan had even suggested the applicability of the pedagogies to working with non-disabled students, which could be an indication of her increased awareness of inclusive approaches (Norwich and Lewis, 2005).

The teachers' feeling of success in the lessons in turn signified the apparent success of the pedagogies for working with students with DS. Yet, according to Rix and Sheehy (2014), these approaches do not require teachers to have extensive knowledge of the characteristics of their students' impairments. Instead, teachers should ensure that more

time and space, which are the key elements in teaching students with SEND, are provided (ibid.), and acknowledge that ‘effective pedagogy is based on the skills they already have available to them’ (ibid., p.471).

5.4 RQ3: What are the experiences and perceptions of students with DS when being taught to play the piano?

In addition to the students’ interviews, analysis of the teachers’ and parents’ given data and the observational field notes across the four case studies gave rise to a set of themes in relation to the students’ experiences and perceptions of piano learning before and during the research. These themes, together with the associated codes and sub-codes are presented in Table 5.3.

Themes	Codes	Sub-codes	A	B	C	D
Perceptions Towards Piano Learning	Love of playing the piano	Happy about going to the piano lessons	✓	✓	✓	✓
		Liked the sound of the piano				✓
	Reaction towards conventional music notation	Refused to read sheet music	✓			
		Disliked it		✓		
		Took too long to learn			✓	
Unable to match the notes				✓		
Enhanced Self-esteem	Growth in Confidence	Confident of playing without guidance	✓	✓	✓	✓
		Willing to cooperate	✓	✓	✓	✓
		Indicative behaviour and responses in interviews			✓	✓
	Pride of knowing how to play the piano	Telling their friends		✓		✓
		Teaching their mother	✓	✓		
Motivations to Learn	Parental companion	Embracing the parents' involvement	✓	✓	✓	✓
		Mother learning to play the piano		✓		
		More focused and confident				✓
	Incentives	Praises	✓			
		Sweet treats	✓		✓	✓
		Stickers			✓	
Continuation in Learning	Enhanced motivation	Fun and enjoyment in piano learning	✓	✓	✓	✓
		Ability to play better		✓		
		Satisfied with the lesson contents and teaching methods	✓	✓	✓	✓

Table 5.3: Themes and codes related to the experiences and perceptions of the student participants when being taught to play the piano

5.4.1 Theme – Perceptions Towards Piano Learning

Love of playing the piano

When the students were asked in their individual first interview whether they liked playing the piano, they unanimously said ‘yes’, and Dan-yao added: ‘Piano sound good’ (Interview 1 – Dan-yao, Line: 17). The students’ love of piano playing was supported by the teachers’ and parents’ comments on how the students had previously approached the piano lessons. For example, Ms Chi-yan recalled how Chao-chao always had a huge smile on his face when he went into her lessons, although there was an aspect of the lessons that Chao-chao disliked, with which both adults agreed: he did not enjoy being told to sit still. Bu-ran’s Mum confirmed that Bu-ran enjoyed the piano lessons because Bu-ran would frequently ask her when they would next go to the teacher’s place. As an observer, I noticed that when the students came into the lessons, Au-na looked happy, and Dan-yao seemed very excited (e.g., Observation L5 – Group Apple, p.1; Observation L1 – Group Durian, p.1).

Reaction towards traditional music notation

Although the students indicated that they liked piano playing and were happy about going to the piano lessons, there seemed to be an element in the previous lessons that the students found challenging – the traditional music notation. The teachers seemed to be adopting or intend to adopt the conventional method of teaching music by reading music notation (Orlando and Speelman, 2012). In Group Apple, Ms An-ling said in her first interview that Au-na was incapable of recognising the positional changes of notes on the notation, and according to Au-na’s Mum, Au-na would refuse to read the music scores. In Group Banana, Ms Bai-xue emphasised on Bu-ran’s dislike of wearing

glasses to relief her short-sightedness, and considered this as the cause of her not being able to read the notation. Yet, in Lesson 5, after experiencing piano learning without music scores, Bu-ran was seen wearing her glasses to the lesson (Observation L5 – Group Banana, p.1). This seemed to suggest that it was not the glasses that Bu-ran disliked, but the traditional music notation, and her responses in the second interview seemed to confirm this suggestion. She said that she liked the lessons a lot, and when she was asked whether there were any differences, she replied: ‘I don’t need paper’ (Interview 2 – Bu-ran, Line: 11). In Group Durian, Ms Da-fan related how Dan-yao would feel frustrated when he had to match the notes on the notation with the piano keys. As for Chao-chao in Group Coconut, Ms Chi-yan had been relying on musical note cards because in her opinion, Chao-chao would not have the patience to learn how to read music. The students’ seeming dislike of conventional sheet music appeared to highlight the possible unsuitability of this form of music reading for some learners. This assumption was in line with the findings of Aschenbrenner (2020a), who stated that for the majority of children, beginning with reading complex traditional notation often discourage them from continuing music learning. I wonder if some of the teachers in this project could have included improvisation in their previous lessons to free the students of the demands of music reading, or they could have perhaps, as exemplified by Pickard (2019), used one of their students’ favourite melodies as a starting point for working with notation.

5.4.2 Theme – Enhanced Self-esteem

Growth in confidence

Bu-ran’s Mum reflected that Bu-ran had become more confident since taking up piano lessons. The mother’s observation was in line with Cross’s (2003) account of how

parents notice an increase of confidence and self-esteem in their children with DS through instrumental music learning. Later in her diary, Bu-ran's Mum noted that when she played a wrong note during practice, Bu-ran would inform her of the mistake, which seemed to suggest that Bu-ran's confidence had been further enhanced. But for Au-na, Chao-chao and Dan-yao, their confidence was not developed until the teachers had applied suitable pedagogies. According to Watson (2019), a change in teaching strategy is necessary to boost the self-confidence and to instil pride in students with DS. It is also necessary to establish a fixed routine as they need stability and may easily be upset by unexpected changes (Newton, 2004; Selikowitz, 2008). From the lessons observed, the students were more willing to follow the teachers' instructions as they became familiar with the routines, and their confidence became apparent as they gradually managed to play the melodies without much guidance. This confidence could be detected from some small acts that they displayed. For example, Chao-chao in Lesson 3 was able to quickly put his thumb on the opening note of the music piece without any help. Similarly, Dan-yao in his Lesson 3 reminded himself of the colour of the opening note and put his thumb on it in preparation to play the tune from memory. Their confidence also came through in their responses and behaviour in their second interviews. As observed, Chao-chao appeared confident as he happily described the lessons and hummed the melody, as if to show me how well he knew the music; Dan-yao, as he was telling me what he did in the lessons, impersonated a pianist, swinging his head and making expressive faces.

Pride of knowing how to play the piano

The actions of three of the students could perhaps be interpreted as an indication of their feeling of pride, thus further suggesting that they had developed more self-esteem

through piano learning (Cross, 2003). It seemed that Bu-ran and Dan-yao must have been proud of knowing how to play the instrument, for they shared their learning adventure with their friends. Bu-ran said in her first interview that she had told her friends about her piano lessons, and similarly, Dan-yao said: ‘I tell Ka-hung¹⁸ I play piano’ (Interview 2 – Dan-yao, Line: 25). Au-na also seemed to have developed this sense of pride, which also further emphasised her confidence as she told me in her Interview 2 (Line: 23): ‘I — teach Mummy.’ This was confirmed by Au-na’s Mum who noted twice in her diary that Au-na had asked her to be the student while Au-na be the teacher.

5.4.3 Theme – Motivations to Learn

Parental companion

For the purpose of this study, all the parents were requested to join in the lessons and to supervise home practice, and this active involvement seemed to have produced encouraging results in line with research on effective parental involvement that enhances children’s learning (e.g., Davidson et al., 1996; Hornby and Lafaele, 2011). From observations, none of the students opposed having their mothers watching them learn, and the parents’ diaries indicated that the children had practised diligently at home. The students’ responses in their second interviews seemed to reflect their approval of their parents’ company. For example, Au-na said: ‘Mummy here’ (Interview 2 – Au-na, Line: 8), and ‘Mummy practises with me’ (ibid., Line: 14). Furthermore, when she said that she taught her mother, this could perhaps be seen as a positive interaction resulting from parental companion in practices. Bu-ran said:

¹⁸ Ka-hung is the pseudonym for Dan-yao’s best friend.

‘Mummy and me know how to play — I like a lot’ (Interview 2 – Bu-ran, Line: 2), and ‘Mummy and me play piano’ (ibid., Line: 5), indicating that watching her mother learn to play the piano may have left a strong impression on her. According to Ms Da-fan, the presence of Dan-yao’s Mum had influenced how Dan-yao behaved. She noted in her Interview 2 (Lines: 36-37): ‘Dan-yao was more focused and confident when his parent was in the lessons with him’, which further demonstrated the importance of parental support (Davidson, et al., 1996). But Dan-yao’s behaviour also seemed to emphasise young children’s need for the company of someone familiar who would provide a calming effect (O’Reilly and Dogra, 2017).

Incentives

Although not an issue emphasised in the pedagogies, an operant conditioning approach (Fidler, 2005; McAllister, 2012) seemed to have been taken by Ms An-ling, Ms Chi-yan and Ms Da-fan as they each prepared different incentives for their student to help maintain their interest and motivation in the lessons. As observed, Ms An-ling, besides praising Au-na after each practice in Lesson 1, treated Au-na to a sweet after each completion of playing the melody in Lesson 3; Ms Chi-yan tempted Chao-chao with sweets, chocolate and stickers to keep him focused on the lessons; Ms Da-fan rewarded Dan-yao with a piece of chocolate for good piano performance. These treats and praises were regarded as motivational feedback and positive reinforcement (Fidler, 2005; Watson, 2019), and they seemed to have successfully motivated the students to continue with the tasks. For example, Ms Chi-yan noted in her diary (Lines: 27-28): ‘[Chao-chao] learnt the new piece quite fast because he wanted the sweets from me.’ Similar to Chao-chao, the sweet treats were an attraction for Au-na and Dan-yao. Au-na took the initiative in Lesson 5 and asked Ms An-ling if she could have sweets that day. Dan-

yao, who had apparently informed Ms Da-fan that he preferred chocolate to sweets, said happily: ‘I — have chocolate — after lessons’ (Interview 2 – Dan-yao, Line: 10). It was also noteworthy that apart from the three teachers who had acknowledged the importance of operant learning (McAllister, 2012), Au-na’s Mum would also occasionally reward Au-na with perhaps a cup of apple juice after her practice sessions at home, or with a meal at McDonald’s after a lesson, which could be regarded as incentives for Au-na to maintain her interest in piano learning.

5.4.4 Theme – Continuation in Learning

Enhanced motivation

When the students were asked in their first interviews whether they wanted to continue learning the piano, they simply said ‘yes’. This positive response could just be based on the fact they liked playing the piano as discussed above (§5.4.1). During the five-week research, it was observed that the students seemed to have discovered the fun and enjoyment of piano learning, part of which could be ascribed to their being able to understand of what was being taught (Unlu, 2017), which in turn had maintained their focus and sustained their interest in the activity (Cheng and Southcott, 2016; Unlu, 2017). For example, Au-na was seen laughing and happily singing the solfege in Lesson 1, and Bu-ran laughed with excitement as she watched her own mother learn to play the piano. According to Chao-chao’s Mum, Chao-chao had become ‘keener to play the piano and have lessons’ (Interview 2 – Chao-chao’s Mum, Line: 4). Both Ms Da-fan and Dan-yao’s Mum had noticed Dan-yao’s increased happiness in the five lessons, and Dan-yao’s own impression of the lessons was ‘now happier’ (Interview 2 – Dan-yao, Line: 13).

In the students' second interviews, the way they described their lessons showed how much they had enjoyed them. For example, Au-na said: 'My piano has — numbers — so fun' (Interview 2 – Au-na, Line: 2), and Dan-yao was laughing heartily as he told me about the colourful stickers on the piano keys. When the students were asked again whether they wanted to continue with piano learning, they all replied 'yes', but this time, as observed, these responses were mingled with enthusiasm and eagerness; there was excitement (Au-na and Chao-chao), and happiness (Dan-yao). Bu-ran even explained that it was because she could play better, further demonstrating her growing confidence.

The students' willingness to continue learning is a key outcome of this research. The teachers, while maintaining a master-apprentice model of teaching (Crappell, 2019), had tried to experiment with pedagogies that are more learner-centred (Mpho, 2018), creating tailor-made interventions by considering the students' specific learning profile, as well as the student's interest, as in Group Durian. These tailor-made interventions had begun to eliminate barriers from the previous lessons in each group. One such barrier was the reading of traditional music notation, which, according to Aschenbrenner (2020a), can be confusing and discouraging for many children. Although three of the teachers retained the reading element, they had replaced the traditional music notation with individualised versions adapted from the pedagogies that they had chosen. Consequent to the teachers' change of approach, the students seemed satisfied with how they were being taught, which in turn appeared to have boosted their confidence and self-esteem. After the five lessons, this satisfaction seemed to have further motivated them to continue with the piano learning, an outcome that is in line with many research findings (e.g., Cheng and Southcott, 2016; Wu, Hsieh and Lu, 2015).

5.5 RQ4: What are the experiences and perceptions of the parents of children with DS in relation to piano lessons in Macao?

The themes identified in relation to this research question illustrated the parents' experiences and perceptions before and during the research project. These themes and the associated codes and sub-codes are presented in Table 5.4.

Themes	Codes	Sub-codes	A	B	C	D
Personal Beliefs	Children with DS can enjoy music	Their children love music	✓	✓	✓	✓
		The right to enjoy music			✓	✓
	A form of therapy	Improvement in behavioural and health issues			✓	✓
Effects of Being Involved in the Learning Process	Enhanced parents' own interest	Involved in the actual lessons	✓	✓	✓	✓
		As an assistant	✓	✓	✓	✓
		As a model		✓		
		Enthusiasm in supervising home practice	✓	✓	✓	✓
	Improved parent-teacher relationship	Increased conversations and more constructive communications	✓	✓	✓	✓
	Improved parent-child relationship	Bonding between family members	✓	✓	✓	✓
Knowing how to better support children in piano learning		✓	✓	✓	✓	
Struggles in Reality	Coping with different aspects of daily life	Domestic responsibilities	✓		✓	✓
		Work responsibilities	✓			
		Balancing children's piano playing with academic learning	✓	✓	✓	✓
	Lack of support	Support from teachers and social workers		✓	✓	✓
		Governmental funding	✓	✓	✓	
		Rejection from music studios	✓			
		Organised musical activities targeting children with SEND	✓	✓	✓	

Table 5.4: Themes and codes related to the experiences and perceptions of the parent participants in relation to piano lessons in Macao

5.5.1 Theme – Personal Beliefs

Children with DS can enjoy music

In their first interviews, the parents mentioned how much their child loved music and enjoyed music lessons at school, with Au-na's Mum making a generalised statement: 'I think children with DS love music very much' (Interview 1 – Au-na's Mum, Lines: 31-32). This characteristic was acknowledged in research as common to individuals with DS (e.g., Pienaar, 2012), although Selikowitz (2008) advised against such generalisation as the interests of every person with DS can be just as diverse. Nevertheless, the four parent participants recognised their child's musical interest and arranged for them to have piano lessons. Some parents were concerned with the issue of human rights, feeling that their child should be equally entitled to participate in social and cultural activities (Rogers, 2013). Chao-chao's Mum commented in her Interview 2 (Lines: 38-39): 'I know Chao-chao may not be a genius, but he should still have the right to enjoy such beautiful art form in the world.' Similarly, Dan-yao's Mum did not think Dan-yao should be deprived of this musical activity based on his cognitive ability and sensory impairment.

A form of therapy

For Chao-chao's and Dan-yao's mothers, to engage their child in piano learning was not only because of the child's love for music or right to enjoy music, but also because they viewed music learning as a form of therapy to combat what they considered to be their child's weaknesses. In Chao-chao's case, his mother had commented on him being very inattentive, and anticipated that 'he would become more attentive after learning the piano' (Interview 1 – Chao-chao's Mum, Lines: 36-37). Chao-chao's Mum had said

that Chao-chao would be humming a tune after school if there was music lesson on the day, while in his second interview, Chao-chao hummed the melody he learnt after telling me what he did in Ms Chi-yan's lessons. According to Pienaar (2012), many researchers have stated that this simple act of humming a familiar tune requires the individual to activate complex auditory processing in the brain, and all aspects of this processing, which includes auditory attention, can be increased through musical experiences. At the end of Lesson 5, Chao-chao's Mum noted in her diary (Line: 88): '[Chao-chao's] more attentive in class now', which may seem to suggest that therapeutically, the piano lessons had succeeded towards helping Chao-chao's attention problem.

As for Dan-yao, his mother said in her Interview 1 (Line: 36): 'I was hoping that piano learning would improve [Dan-yao's] hearing.' Although Dan-yao's Mum emphasised hearing as the focus for therapy, it could perhaps be linked with speech production, as Ms Da-fan observed in her Interview 1 (Line: 49): 'Since [Dan-yao] doesn't hear as well as other students, he's relatively quiet during the lessons.' It is said that hearing impairment causes difficulties in distinguishing the subtle differences between sounds, resulting in an inaccuracy in speech sound production, including its prosodic and rhythmic qualities (Kumin, 2006). Yet, these qualities in speech are perceivable in music, and it has been asserted that music training can improve not only a person's perception of music in terms of melodic contour and rhythm, but also their perception of emotional speech prosody (Darrow, 1989; Good, et al., 2017). Therefore, music therapists often incorporate music into traditional auditory training techniques in addressing speech problems caused by hearing deficiency, such as intelligibility and fluency (Darrow, 1989). Although Dan-yao's Mum mentioned in her second interview that she had noticed Dan-yao becoming more talkative, but considering Dan-yao had

only been learning the piano for a short period of time, and his ability of speech was not the focus of analysis, it would not be justified to conclude that his hearing had been improved by the piano training, nor that his speech production had been enhanced as a result.

5.5.2 Theme – Effects of Being Involved in the Learning Process

Enhanced parents' own interest

Previously, Chao-chao's Mum was the only parent who sat through every lesson and participated in Ms Chi-yan and Chao-chao's activities. However, the reason for her staying in the lessons was 'because [Chao-chao] could get kind of excited and become disobedient' (Interview 2 – Chao-chao's Mum, Lines: 19-20), behaviours that are often associated with children with DS (Feeley and Jones, 2007). As for the other parents, Au-na's Mum would occasionally stay in the lessons, whereas Bu-ran's and Dan-yao's mothers rarely did so. Ms Bai-xue, in her Interview 1 (Line: 80), made a remark about Bu-ran's Mum not joining in, which perhaps could also apply to some of the parents: 'I think she feels it's unnecessary because she doesn't know how to play the piano.' Yet, such attitude is regarded in Hornby and Lafaele's (2011) study as a barrier to effective parental involvement because the parents were doubting their own ability to help their child to learn.

In the lessons during the research, I observed how each parent acted in different ways as assistant, often on her own initiative. At the beginning of the lessons, Au-na's and Chao-chao's mothers would put the music book or score on the music stand (e.g., Observation L3 – Group Apple, p.1; Observation L1 – Group Coconut, p.1). They would also help the teachers calm the students or maintain their discipline. For

example, whenever Chao-chao ran away from the piano to the nearby desk, his mother would urge him to return to the piano (e.g., Observation L1 – Group Coconut, p.2). Au-na’s Mum related that she had helped to control Au-na’s temper, as well as assisting her in situations such as toilet times. Her involvement seemed to have given her a sense of satisfaction, for she said: ‘I think Ms An-ling and I work well together’ (Interview 2 – Au-na’s Mum, Line: 31). Dan-yao’s Mum assisted Ms Da-fan by updating her with information about Dan-yao’s practice at home, and showing her a recorded video of Dan-yao improvising during practice (Observation L3 – Group Durian, p.1). This had enabled Ms Da-fan to witness Dan-yao’s seemingly uninhibited display of happiness. In Bu-ran’s case, whenever she lost focus and Ms Bai-xue decided to have a short break, Bu-ran’s Mum would give the daughter some water to drink (e.g., Observation L3 – Group Banana, p.2). Bu-ran’s Mum further assisted Ms Bai-xue by modelling as a student in accordance with the Suzuki method (SAA, 2018; See, 2011), learning the music herself under Ms Bai-xue’s instruction. This arrangement enabled Bu-ran to understand how a piano student should normally behave in a lesson, as well as preparing her to internalise the music before Ms Bai-xue began to teach her (Thompson, 2018; Vygotsky, 1978). Bu-ran’s Mum’s increased interest in the learning process was emphasised on several occasions, such as when I overheard her asking Ms Bai-xue whether she needed to buy any music scores (Observation L1 – Group Banana, p.2). To me, as an observer, these acts of participation from the parents demonstrated their concentration and willingness to be involved in the lessons.

The parents had also become enthusiastic about home practice. In their first interviews, they recounted their previous involvement in their child’s musical activities at home: Au-na’s Mum and Dan-yao’s Mum related that they would listen to their respective child play on the piano daily while dealing with their household chores; Chao-chao’s

Mum would show Chao-chao some musical note cards and ask him to play a few random notes, and Bu-ran's Mum said that Bu-ran did not practise at all. Requested by the teachers, the parents began to ensure that their child spend an amount of time practising daily unless it was inconvenient to do so. This is in accordance with Margiotta's (2011) suggestion that when children engage in piano learning, parents can actively initiate or supervise practices or remind the child when to practise. The parent participants became actively involved in the supervision, and the entries in their diaries showed their enthusiasm in partaking in this task. For instance, Au-na's Mum and Dan-yao's Mum followed the teachers' instructions and had stickers stuck onto their child's keyboard at home: numbered stickers on Au-na's piano and coloured stickers on Dan-yao's. Some parents also overcame challenges when supervising: Chao-chao's Mum, on noticing Chao-chao kept on practising one melody when he should be practising another, persuaded him to practise both pieces after much effort; Dan-yao's Mum was met with Dan-yao's anger when she wanted him to practise the learnt melodies before improvisation. She managed to ease the tension afterwards by letting Dan-yao improvise first before practising. In line with the advice given by Newton (2004), both of these parents avoided confrontation. Instead, they relied on reasoning and compromising to resolve the situation.

From the parents' diaries, it can be gathered that the length of time spent practising varied between the four students. Yet, when compared with how much time they used to practise, as informed by the parents in their first interviews, there were obvious improvements seemingly due to parental supervision. For example, Chao-chao, who used to play just a few random notes, had since been practising for five to ten minutes regularly, even managing fifteen minutes on one occasion. Bu-ran's situation was different because the pedagogy employed required the parent to have some knowledge

of the instrument, thus for the first two weeks, it had been Bu-ran's Mum who conscientiously practised what she had been taught, with Bu-ran observing her behaviour. Bu-ran began her daily practice from the third week, alternating with her mother after each play. Her mother's given data showed that Bu-ran had changed from not practising at all to playing the learnt melody three to five times consistently.

The parents' effort in ensuring the students did not neglect their piano practice seemed to have produced satisfactory results in the lessons. For example, according to Ms Da-fan, Dan-yao's improved performance in Lesson 3 had suggested to her of his persistent home practice. Such observation appeared to be in line with many researchers' conclusions noted in Margiotta (2011), in that when parents encourage their child to practise, it can positively affect the child's level of musical ability. Furthermore, existing research demonstrated that parents' accomplishment in music is not important. Rather, it is their commitment to assist and support that will create an enjoyable and successful musical journey for their children (Briscoe, 2016; Davidson, Sloboda and Howe, 1995; Davidson, et al., 1996). The parent participants' active involvement required during the research period seemed to have produced similar outcome in line with the above research.

Improved parent-teacher relationship

In their first interviews, Au-na's, Bu-ran's and Chao-Chao's mothers had considered their relationship with the teachers as amicable. Yet, communication between teachers and parents seemed to be lacking for Au-na's Mum and Bu-ran's Mum. For them, any constructive communication they had with the teachers appeared to be just within the last few minutes at the end of the lessons. Dan-yao's Mum could not offer her opinion

on her relationship with the teacher, saying instead: 'I seldom go to the piano lessons ... I usually send my helper' (Interview 1 – Dan-yao's Mum, Lines: 48-49), which also indicated her lack of communication with Ms Da-fan. Since becoming more actively involved in the lessons, parent-teacher interaction increased and was substantially rooted in piano learning. In the parents' second interviews, Au-na's Mum, Bu-ran's Mum and Dan-yao's Mum all commented that they had become closer to their teachers and had more conversations with them. Chao-chao's Mum, who had already developed a good relationship with Ms Chi-yan, also felt that they had been communicating well. From observation, all the parents would exchange feelings with the teachers about each lesson when it ended, and pay attention to what the teachers expected them to do at home to help the students. Au-na's Mum also took this opportunity to voice her concern. She said: 'I would ... tell [Ms An-ling] about my difficulties with practice' (Interview 2 – Au-na's Mum, Lines: 25-26). In line with the findings of various music educators and researchers (e.g., Creech and Hallam, 2003; Cross, 2003; Davidson, et al., 1996; Scott, et al., 2007), I observed that the parents, as they involved actively and communicated constructively with the teachers, were gaining a better understanding of the learning process and the teachers' expectation. It appeared that this had enabled them to support their child's home practice more efficiently and help their child to develop musically.

The improved relationship between parents and teachers seemed to have developed into a 'partnership' (Rogers, 2011), and this newly formed parent-teacher collaboration demonstrated that even when teachers are teaching students with tailor-made interventions to eliminate learning barriers, positive parental involvement is important in sustaining the effectiveness of the interventions and in enhancing the students' learning experience (Davidson, et al., 1996).

Improved parent-child relationship

The parents reflected that since their active involvement in the learning process, there were more intimate interactions between them and the child, and even among the whole family. Au-na's Mum, in her Interview 2 (Lines: 54-55), said: 'In fact, my husband has joined in [the practice] several times recently. The piano practice has become a family gathering, and it's an enjoyable time in the evening.' Similarly, Dan-yao's Mum recounted how her husband would take over the supervision of practice whenever she was occupied with other family commitments. Furthermore, she related how Dan-yao had become more talkative and sociable towards family members. Both Bu-ran's Mum and Chao-chao's Mum also felt that their child had been sharing more with them. Chao-chao's Mum noted in her diary and reiterated in her second interview that Chao-chao, without being asked, told her that he liked playing the piano. Bu-ran's Mum, in her Interview 2 (Lines: 13-14) said: 'Sometimes [Bu-ran] would remind me to practise after coming back from school. I see this as a kind of sharing.'

As the parents also attended the lessons, they saw how the teachers instructed their child and heard the melodies being played. This appeared to have helped them learn how to best support their child. Au-na's Mum accepted Ms An-ling's advice, which was in line with Kim's (2013) findings, of not to scold Au-na and she admitted that speaking harshly to Au-na did not help the child concentrate. Bu-ran's Mum, having been taught to play the melody, said that she was able to recognise and correct any errors relating to notes, fingering, or positioning that Bu-ran made during her practice. Chao-chao's Mum confirmed that she was able to help Chao-chao practise by following Ms Chi-yan's strategy, while Dan-yao's Mum felt that having understood what was taught in the lessons, she would notice if Dan-yao was not playing the correct melody. The

parents' improved relationship with the teachers and the students arose from playing a part in the lessons through to the practice sessions at home. This participation exemplified effective parental involvement (Hornby and Lafaele, 2011), and highlighted the importance of teacher-student-parent collaboration in music learning (Creech and Hallam, 2003; Cross, 2003; Davidson, Sloboda and Howe, 1995; Upitis, et al., 2017).

5.5.3 Theme – Struggles in Reality

Coping with different aspects of daily life

Findings from the data showed that while the parents committed themselves to attending the piano lessons as well as supervising home practice, such commitment would have been, and indeed had been, challenging at times. From the parents' interviews and diaries, I learnt that these parents all led busy lives, often having to balance piano learning with other responsibilities such as housework and career (Au-na's Mum), or the need to look after other children (Chao-chao's Mum and Dan-yao's Mum). Besides domestic and work responsibilities, which could create barriers to effective parental involvement (Hornby and Lafaele, 2011), the mothers also had to balance the piano practice with the child's academic learning. Although only Bu-ran's Mum and Chao-chao's Mum had mentioned in their first interviews that they would revise the schoolwork with their child after school, it can be gathered from the parents' diaries that for Au-na, Bu-ran and Dan-yao, the mothers had to postpone or shorten practise time on a couple of occasions because of exam revision.

Lack of support

All the parents had voiced disapproval of the Macao Government's effort in supporting children with SEND. Regarding academic support, three of the parents were dissatisfied. Despite inclusive education had begun to be implemented in the city's public schools over two decades ago (Forlin, 2011), Chao-chao's Mum observed that 'the educational structure for SEND in Macao is just not mature enough' (Interview 2 – Chao-chao's Mum, Lines: 31-32). Dan-yao's Mum found that students with SEND were often being neglected in mainstream classrooms because the teachers were too busy to be able to help every student, echoing some of the concerns of teachers in mainstream schools (Kabashi and Kaczmarek, 2019). She related Dan-yao's music lessons in school: 'I don't think the [music] teachers have the time to pay any special attention to him because he has moderate learning difficulties and is weak at hearing' (Interview 2 – Dan-yao's Mum, Lines: 34-36). Yet, this could perhaps be seen as a reflection that teachers in mainstream music classrooms often have no inclination to develop the musical skills of students with SEND because of their negative preconceptions of the students' ability (Fidler, Lawson and Hodapp, 2003; Shelfo, 2007), or that they lower their expectations for these students (Scott, et al., 2007; Wong and Chik, 2016a; 2016b), claiming that they are unprepared to teach them (Wong and Chik, 2015; 2016a; 2016b). As such, it is possible that students with SEND are not educated in a way that would bring out their potential due to the barriers created by the teachers' preconceived notions, biased attitude, and lack of knowledge about disability (Mastin, 2010). Social workers in schools also seemed to be a concern for some parents. Although Au-na's Mum offered an opposing view and related how the social worker in Au-na's school would frequently contact her to discuss Au-na's situation, Chao-chao's Mum felt that these professionals were in short supply. This sentiment

was shared by Bu-ran's Mum who found them too busy to be in touch unless a problem had arisen. The seeming lack of social workers could perhaps be regarded as an indication that the authorities did not provide additional support, which according to research, is necessary to accommodate students with SEND within an inclusive environment (e.g., Gates and Mafuba, 2016; Isaksson, Lindqvist and Bergström, 2010).

On a social level, three parents commented on the insufficient governmental support in terms of funding, with Au-na's and Bu-ran's mothers specifically pointed out that Macao is a rich city. Because of the city's financial strength, Bu-ran's Mum seemed annoyed when she said in her Interview 2 (Line: 33): 'But we still need to pay for therapy and training.' This was also a concern expressed by Chao-chao's Mum, who said in her Interview 1 (Lines: 43-44): 'I need more money to pay for Chao-chao's language therapy'. The parents' concern seemed to indicate the immensity of time and energy, as well as financial demands that some parents have to commit to when rising a disabled child (Rogers, 2011).

It can also be gathered that while all the students had music lessons in schools, instrumental music was not offered. Thus, private tuition was an option. Yet the experiences of finding a piano teacher as recounted by Au-na's Mum echoed the story I related in the introductory chapter. Au-na's Mum said that she had been rejected by music studios on five occasions with the reason being that Au-na might scare the teachers and other students. On that account, she said: 'That made me really angry, but I could do nothing' (Interview 1 – Au-na's Mum, Line: 47). Dan-yao's Mum confirmed that although she did not have such experience, she had witnessed other parents having similar encounters, while Bu-ran's Mum had abandoned the idea of approaching any music studios. The parents' stories seemed to be in line with the findings of Rogers

(2011), in that parents of disabled children have to ‘fight’ for their child’s right to learn and for support, but often to no avail.

To enable children with DS to experience different activities, Au-na’s Mum hoped that free supportive lessons such as the piano classes offered by the Macau Down Syndrome Association could be more readily available. Further supportive lessons were also welcomed by Chao-chao’s Mum who admitted that learning fees for activity classes were a concern for the family. Bu-ran’s Mum found that only few organisations offered activities for children with DS in this city. She observed: ‘I know there’re many children with DS in the Western countries who take instrumental lessons. I hope this could also happen in Macao’ (Interview 2 – Bu-ran’s Mum, Lines: 38-39). From the parents’ perceptions, whether these were education- or society-oriented, their attitude appeared to suggest that they did not regard their children’s learning difficulties as ‘insurmountable barriers’ (Runswick-Cole, 2008, p.177) that would prevent them from gaining a better quality of life. Yet it seemed that in Macao, at this moment, a just society has not yet been created in line with the social model of disability, where disabled people can be included into all areas of life (Rogers, 2013). Instead, barriers have been constructed by the Government and some establishments such as music studios, denying children with DS of participation in cultural experiences of everyday life, as well as hindering them from certain productive learning, and excluding them from any future participation in the cultural industries.

5.6 Concluding Remarks

In this chapter, four sets of themes that were developed inductively from the data have been presented in response to the four research questions. Since the research questions

were directed at three parties of participants, with each party representing a different status, these sets of themes may seem disparate. Yet, while these themes dealt primarily with the experiences and perceptions of either the teachers, the students, or the parents, their contents however, when being considered together, provided an understanding of the piano teaching and learning environment for children with DS in Macao from the personal, educational and social perspectives.

Chapter 6: Conclusion

6.1 Introduction

This study stemmed from my personal experience in teaching piano to children with DS, and the realisation that topics relating to these children learning instrumental music are under-researched in Macao. Conducting a qualitative research within an interpretivist paradigm and employing a collective case study strategy, I investigated the experiences and perceptions of four sets of piano teachers, students with DS and their parents in this teaching and learning situation in Macao. The purpose is to achieve an understanding of the phenomenon in relation to different models of disability. In this closing chapter, I present a summary of the conclusions drawn from the analysis of data collected through interviews, observations, field notes and diaries, reflect on the study's limitations, and discuss its contributions and implications for further educational research, practice and policy. The dissertation concludes with my reflections on how this research has affected my personal perspectives on teaching piano to students with DS.

6.2 Conclusions Derived from Analysis

Conclusions drawn from data analysis are summarised in relation to the three status groups: the piano teachers, the students with DS, and the students' parents.

The piano teachers

The piano teachers in this project were in the same situation as many music/instrumental music teachers in Macao, in that they had not been trained to teach

students with SEND due to the unavailability of relevant academic courses and professional training in the city. Thus, teaching students with DS was an unfamiliar experience for many of them. Although they were enthusiastic about the experience and upheld these students' right to learn an instrument, their perceptions of them were based on an individual deficit and medical model perspective, modifying the lessons by considering their students' 'medical problems'. Also, without adequate knowledge of different pedagogies, the teachers tended to rely on the same teaching methods used with their non-disabled students, and they were said to have been met with failure, frustration, and guilt. Yet, they were unable to think outside of the 'special' paradigm, and ascribed what they considered as slow progress to their student's cognitive, sensory, and behavioural conditions. When the teachers became aware of the different pedagogies and acquired the basic knowledge through the intervention tutorials, they began to consider teaching their students from a more social model perspective. They made reasonable accommodations based on their students' learning profile, became more creative and used tailor-made interventions that, to a certain extent, had made piano learning more accessible and enjoyable for the students. Although I felt some of teachers could have perhaps experimented with elements from more than one pedagogy, they were nonetheless beginning to remove the barriers to both teaching and learning, which they and their students with DS had previously encountered.

Previously, three of the teachers did not invite the parents to be involved in their children's piano learning, and there was a lack of constructive communication between most of the teachers and parents in relation to the students' learning and the lessons. This had resulted in little cooperation and a lack of understanding of the situation on both sides, adversely affecting the students' learning progress. The active and effective parental involvement during this research had made the teachers realise the importance

of communication and teacher-parent collaboration in helping a disabled child improve in the learning.

The students with DS

As expressed in their initial interviews and conveyed by their parents and teachers, the students in this study loved music and piano playing. However, there were elements in their previous piano lessons that they disliked or found difficult: predominantly the reading of traditional music notation, which had created a barrier to learning for them. Subsequent to the introduction of different pedagogies, one teacher had discarded the use of notation to focus on imitation, repetition and memorisation, while the other three teachers had replaced the conventional notation with adapted versions that were more accessible to their respective student. With the teachers' tailor-made interventions, barriers to learning were beginning to be removed. Even though some students still found the revised notation difficult, they did not adopt any avoidance strategies (Wishart, 1993), nor develop any symptoms of learned helplessness (Gacek, Smoleń and Pilecka, 2017). Over time, they seemed to have developed confidence and a sense of pride from knowing that they could play well on the piano. They also seemed to enjoy having their parents participating in their piano learning both in the lessons and at home, indicating the importance of a parental companion for young children (O'Reilly and Dogra, 2017) and parental support in music learning (Davidson, et al., 1996). Consequent to their experiences of being taught with tailor-made interventions and having their parents involved, the students all expressed a desire to continue learning the piano, perhaps anticipating further progress to be made within their forthcoming tailor-made lessons.

The students' parents

The stories related and experienced by the parents in this study regarding music learning revealed that in Macao, children with DS could still be subjected to discrimination inside and outside the school environment. In schools, potential musical talent of children with DS could be overlooked by teachers who often have preconceptions based on individual deficit, and the medical model of disability. Outside the schools, music studios tend to reject applications from children with DS based on their physical appearance. However, the parents in this study believed that their child loved music and should not be denied their rights to learn a musical instrument, whether it be for enjoyment or be considered as therapy for self-improvement. Yet, it seemed that taking up piano/instrumental music lessons was not only a financial strain for some families but, like most parents of disabled children, they often had to engage in 'fights' for this right to be acknowledged in society, which can be emotionally costly (Rogers, 2011).

Early conversations with the parents seemed to suggest that for some, piano lessons were solely for their child's enjoyment and/or benefit, thinking that they did not need to be involved themselves. Yet, this project required them to play a more active and meaningful role. In a sense, they needed to form a 'partnership' with the teachers (Rogers, 2011). Consequently, they found that they were able to gain a better understanding of their child's learning process, as well as helping their child improve. It was noticeable that the parents often had the challenge of balancing family and work responsibilities with their child's piano learning activities; however, they felt that despite the need to commit more time and energy, the involvement in the lessons had improved their relationship with their child and the teacher, and for some, the practicing of piano at home had further enhanced the bonding between family members.

6.3 Limitations of the Study

While careful consideration has been given to every aspect of this study, limitations are still noticeable on reflection regarding certain areas. First, this collective case study consists of four cases, which is an acceptable number (Eisenhardt, 1989). But because each sample group – piano teacher, student with DS, and student’ parent – has only four representatives, this study is relatively a small-scale research. Second, as only three lessons were observed in each case study, it may be debatable whether these would meet Kawulich’s (2005, para.44) requirement of spending ‘a considerable amount of time in the setting’ to make the findings more trustworthy. However, I believe that from these observational data, together with the triangulation of other data collected, this study has produced analytical results that would serve as a fundamental study of the topic concerned. Third, for the purpose of obtaining interview data, the student participants needed to be able to communicate verbally. Therefore, the findings relating to their learning experiences may not reflect those of children with DS who have severe communication problems. Fourth, although the students could communicate verbally, their expressions were at times extremely short and unclear. Therefore, the parents had to, when necessary, interpret their child’s idea, which give rise to the validity issue of whether the true meaning of the child’s response has been lost in the interpretation. Fifth, when participants’ views are translated from their first language to another, meaning can be affected, no matter how hard the researcher tries to provide a truthful representation. Sixth, the teacher participants, having agreed to be part of a university study, may have very much kept to the pedagogical approach that they had chosen, rather than varying it in any way because they felt this was the requirement. Seventh, some of the interview questions on DS sit within the deficit model and these could have been put in a more ‘open’ way. Finally, the project took place in Macao and the

participants are local residents, affected by the social and educational climates of the city. This implies that the same adaptations may not be applicable to culturally different geographic locations.

6.4 Contributions of the Study

Restricted by the above limitations, results from this research cannot yet prove generalisable to other piano teachers and their students with DS. However, the value of this case study research should be judged not by how much the findings and results can be generalised to the wider population, but by how they could offer readers a chance for what Stake (1978, p.22) referred to as ‘naturalistic generalisation’, whereby the readers generalise by ‘recognising the similarities of objects and issues in and out of context and by sensing the natural covariations of happenings’. Epistemologically, case studies are concerned with ‘the universality and importance of experiential understanding’, thus they allow readers to practise a naturalistic generalisation that is both intuitive and empirical (ibid., p.24).

Besides the opportunity for readers to make naturalistic generalisations, evidence from the review of literature indicates that globally, there is little longitudinal research in naturalistic settings of music for disabled children, with even less about piano teaching for students with DS. In Macao, there have not yet been any studies conducted on the piano education for children with DS, and research on parents’ involvement and perceptions of children’s music (piano) learning is also scarce, thus placing this study at the forefront of addressing the gaps in research on these issues from an educational and sociocultural perspective. Furthermore, insight gained from investigation through case studies can have a direct influence on policy, practice and future research

(Merriam, 1998). As such, the findings from this research may have some significant implications for educational policy and practice, which may lead teachers to re-evaluate their opinion and attitude towards students with DS, and the Government to re-examine the adequacy of its support for this population group.

6.5 Implications of the Study

Based on this research, additional suggestions for further investigation are proposed. Firstly, the applicability of the examined piano pedagogies to teaching students with other SEND besides DS is worth exploring. The results from this study may be generalisable to students who exhibit similar behavioural and/or physical characteristics, or who, like the students in this study, are excited about music learning, particularly with learning the piano. Secondly, although this research focused on piano education, its results could perhaps offer inspirations to the teaching and learning of other keyboard instruments. Researchers could, therefore, vary the combination of the piano pedagogies examined and assess their practicality for teaching other keyboard instruments to students with DS/SEND. Thirdly, researchers could explore further methods for instrumental music teaching that might also prove effective in teaching students with DS. Finally, researchers are encouraged to relocate my exploration process in Macao to other regions of different cultural and educational backgrounds. It would be interesting to assess the effectiveness of the examined pedagogies when applied in other nations by instrumental music teachers who may be dedicated in teaching children with SEND, but at the same time, may also have negative understandings of disabled children, particularly those with labels of DS.

As pointed out in Chapter 1, many instrumental music teachers in Macao are unwilling

to accept students with DS in their music studios because of fear or unpreparedness. Yet, these students should not be rejected in a just society, where a participatory inclusion would be encouraged for all (Rogers, 2013). Review of literature also indicated an absence of local facilities in Macao where disabled people can explore their artistic potential, while findings in the collective case study revealed expectations from the teachers and parents for more governmental support in providing opportunities for children with DS to participate in musical activities, and in improving the well-being of these individuals. Hence, I would propose several suggestions, with the intention stated in Nussbaum (2011 cited in Rogers, 2013, p.994), that policies should support and care, not infantilise or ‘treat [disabled people] as passive recipients of benefit’: Firstly, the Government should offer more financial support to families of children with DS in response to the need for therapies and trainings. They could perhaps instigate policy for regular services or invite specialists from Hong Kong to provide therapeutic services for these families. The second suggestion is that the Government should provide platforms for disabled individuals to be creative since such facilities seem to be lacking. The third, in response to instrumental music teachers’ unwillingness to accept students with DS, is for policymakers to raise awareness within education of the importance of inclusivity, so that establishments such as music studios will not reject people with DS. The fourth is for the Macao Polytechnic Institute to initiate a course at the Centre for Continuing Education for training music teachers to teach disabled students, so that teachers can become more sensitive to issues of disability, gain knowledge in pedagogical approaches and recognise the importance of parental involvement. I hope that eventually, instrumental music teachers would make an effort to understand the individual needs of students with DS and take the initiatives to draw on a range of pedagogies to support their learning, as well as recognising how

positive teacher-parent collaboration can effectively assist in the students' learning journey. If more teachers would adopt a positive attitude and be better prepared, then more children with DS would have the chance to enjoy the pleasure of playing musical instruments, and possibly to become accomplished musicians.

6.6 Reflections on this Research Journey

As explained in the introductory chapter, one of my reasons for conducting this research came from my personal experience of the challenges when teaching piano to students with DS. Despite finding it difficult, I still embraced the opportunity of teaching them because they have just as much right as everyone else to learn, and I wanted them to find happiness and an appreciation of their own identity through music. At the time, I acknowledged that there had been disabled yet successful musicians, but I doubted the capabilities of my students with DS with my own preconceptions. Thus, I had never set any goals for them nor for myself except to nurture them caringly and patiently, as I thought that would be the most suitable and joyful way for them to learn. Subsequent to the fieldwork, I became aware that, as a piano teacher, I did not observe nor communicate enough with my own students and their parents. I understood more about the needs of the parent and student participants from talking to them in the study's interviews and observing them in lessons. Furthermore, I realised the significance of the teacher-student-parent triangle behind the students' success in their musical journey. I learnt that there would not be a one-size-fits-all model, but with reasonable accommodations, students with DS can competently learn to play musical instruments. In future, I shall follow my teacher participants and apply suitable pedagogies to teach my students, as well as to communicate more with their parents, so to recognise and develop their full musical potential.

This study has made me realise that in the beginning, I was similar to my participants, in that I considered DS largely from the medical model standpoint, and sometimes presented a deficit model of disability. But I have come to a position of being more sensitive to the issues of diversity and inclusion. I now acknowledge that I have been underestimating the abilities of children with DS. They can be smart and sensitive, and teaching them can be just as rewarding as teaching non-disabled children.

For any children with DS to achieve success in music making, no matter how minimal that success may be, all that is required are dedication and support from educators, families, and communities. Furthermore, as emphasised by the Disability Arts Movement, creative works produced by disabled people can be serious and intentional (Sutherland, 2005). Therefore, I hope this research manages to dispel any stereotypical views based on medical model perspectives regarding people with DS, and to enable them to be truly included into society and be creative. This is because not only are they entitled to full human rights, but also because, as expressed in a message from the highly acclaimed musician with DS, Sujeet Desai, profiled in the All American Entertainment (AAE, 2021) Speakers Bureau: disabled individuals, if given proper opportunities for their abilities, can ‘Make it Happen!’

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APPENDICES

Appendix 1: Participant Information Sheets

Title of Research:

Teaching and Learning in Piano Lessons for Students with Down Syndrome in Macao: Experiences and Perceptions

Participant Information Sheet (A)

(To be translated into Chinese)

To the Piano Teacher

This is an invitation for you to participate in a research project concerning Down Syndrome. Listed below are a number of questions and corresponding answers, which provide relevant information about the project.

1. What is the research project about?

The purpose of this research project is to examine the experiences and perceptions of teachers, parents, and students with Down syndrome regarding the teaching and learning of the piano here in Macao.

2. Who is to carry out the project?

This research project is to be conducted by Long I-Ian, Lecturer in piano performance at the Academia de Música S. Pio X in Macao, and it is fully supported by the Macau Down Syndrome Association.

3. Is the research project for the purpose of obtaining a degree or other educational qualifications?

The results from this research will support the dissertation written by the researcher to attain a Doctor of Education degree from the University of Bristol, United Kingdom.

4. What does the research project involve?

This research project consists of four case studies on students with Down syndrome learning to play the piano. Within each case, the researcher will act as an observer in 3 of the 5 lessons scheduled, taking field notes at the same time. She will also conduct interviews individually with each teacher, parent, and student (accompanied by his/her parent). There will be 2 interviews per participant. The initial interviews, in which the piano teacher and the parent may be asked to disclose information regarding the medical and physical conditions of the student, will be held prior to the scheduled piano lessons, while the second interviews will be conducted approximately 2 weeks after the 5th lesson has been completed for each student. These interviews will be audio recorded.

However, if you are not comfortable with being audio recorded, the researcher will make notes instead. You will also be asked to keep a diary to record lesson-related activities, and thoughts and feelings regarding the whole experience over the research period. The diary will be collected by the researcher a few days after the 5th lesson. All data collected will be used only for research purposes.

5. How much time will the research take?

You will be given a short introductory course on different methods for teaching piano to students with Down syndrome; you will then be asked to choose one or more of these methods to work with during the research period. Together with the data collection through observations and interviews, the whole process will take approximately 10-12 weeks. Once the data from the interviews have been transcribed in Chinese and translated into English, and your diary translated into English, the researcher will then forward these transcripts to you for inspection to ensure that her interpretation is the exact representation of all that you have conveyed.

6. Is my taking part in the project beneficial to the research?

With your contribution, the outcomes of this research may provide valuable information that may lead to improving the teaching and learning quality for people with Down syndrome in the future regarding instrumental music lessons.

7. Can I withdraw from taking part at any time?

Participation in this project is totally voluntary. Should you no longer wish to be involved, you are entitled to withdraw at any stages of the research, without the need for a reason.

8. What will happen to the information that I have provided?

All the personal data and information provided by each participant will be kept confidential and securely locked in the researcher's private studio which can only be accessed by her. All the participants will remain anonymous and not be identified throughout and after the research.

9. Will anyone else know about the results?

As this research is part of the researcher's dissertation to fulfil the Doctor of Education degree at the University of Bristol, the professors and fellows of the University should be the first to know about the results. Furthermore, the research findings and results may be published in the future. A copy of the dissertation, which is expected for completion in September 2021 at the latest, will be kept as a public document in the Education Library at the University of Bristol.

10. Will I be given the results of the research project?

It is solely your decision whether you want to be informed of the results. Therefore, the research findings and their publications, whether in full or in parts, will be available to you upon request.

11. What do I do if I require further information or if I wish to make a complaint during the research?

Please contact the researcher directly for further information. If you have any concerns during the research, you can either discuss these with the researcher via email: longiian812@gmail.com, or with the researcher's supervisor, Dr Marina Gall, via email: Marina.Gall@bristol.ac.uk.

12. Can I tell other people about this research?

Certainly. You are welcome to share your experience.

13. What are the next steps?

If you are happy to take part in this project, you will be required to complete a separate consent form. You will also be given a copy of this 'Participant Information Sheet' for future reference.

Thank you for your time and attention.

Title of Research:

Teaching and Learning in Piano Lessons for Students with Down Syndrome in Macao: Experiences and Perceptions

Participant Information Sheet (B)

(To be translated into Chinese)

To the Parent and Child

This is an invitation for you and your child to participate in a research project concerning Down Syndrome. Listed below are a number of questions and corresponding answers, which provide relevant information about the project.

1. What is the research project about?

The purpose of this research project is to examine the experiences and perceptions of teachers, parents, and students with Down syndrome regarding the teaching and learning of the piano here in Macao.

2. Who is to carry out the project?

This research project is to be conducted by Long I-Ian, Lecturer in piano performance at the Academia de Música S. Pio X in Macao, and it is fully supported by the Macau Down Syndrome Association.

3. Is the research project for the purpose of obtaining a degree or other educational qualifications?

The results from this research will support the dissertation written by the researcher to attain a Doctor of Education degree from the University of Bristol, United Kingdom.

4. What does the research project involve?

This research project consists of four case studies on students with Down syndrome learning to play the piano. Within each case, the researcher will act as an observer in 3 of the 5 lessons scheduled, taking field notes at the same time. She will also conduct interviews individually with each teacher, parent, and student (accompanied by his/her parent). There will be 2 interviews per participant. The initial interviews, in which the piano teacher and the parent may be asked to disclose information regarding the medical and physical conditions of the student, will be held prior to the scheduled piano lessons, while the second interviews will be conducted approximately 2 weeks after the 5th lesson has been completed for each student. These interviews will be audio recorded. However, if you are not comfortable with being audio recorded, the researcher will make notes instead.

Note to Parent: You will also be asked to keep a diary to record your child's music-related activities, and your thoughts and feelings regarding the whole experience over the research period. The diary will be collected by the researcher a few days after the 5th lesson.

All data collected will be used only for research purposes.

5. How much time will the research take?

The actual process of collecting data through observations and interviews will take approximately 10-12 weeks. Once the data from the interviews have been transcribed in Chinese and translated into English, and the parent's diary translated into English, the researcher will then forward these transcripts to you for inspection to ensure that her interpretation is the exact representation of all that you have conveyed.

Note to Parent: The transcripts of your child's interviews will also be forwarded to you for inspection.

6. Is our taking part in the project beneficial to the research?

With your contribution, the outcomes of this research may provide valuable information that may lead to improving the teaching and learning quality for people with Down syndrome in the future regarding instrumental music lessons.

7. Can we withdraw from taking part at any time?

Participation in this project is totally voluntary. Should you no longer wish to be involved, you are entitled to withdraw at any stages of the research, without the need for a reason.

8. What will happen to the information that we have provided?

All the personal data and information provided by each participant will be kept confidential and securely locked in the researcher's private studio which can only be accessed by her. All the participants will remain anonymous and not be identified throughout and after the research.

9. Will anyone else know about the results?

As this research is part of the researcher's dissertation to fulfil the Doctor of Education degree at the University of Bristol, the professors and fellows of the University should be the first to know about the results. Furthermore, the research findings and results may be published in the future. A copy of the dissertation, which is expected for completion in September 2021 at the latest, will be kept as a public document in the Education Library at the University of Bristol.

10. Will we be given the results of the research project?

It is solely the mutual decision between you and your child whether you want to be informed of the results. Therefore, the research findings and their publications, whether in full or in parts, will be available to you upon request.

11. What do we do if we require further information or if we wish to make a complaint during the research?

Please contact the researcher directly for further information. If you have any concerns during the research, you can either discuss these with the researcher via email:

longiian812@gmail.com, or with the researcher's supervisor, Dr Marina Gall, via email: Marina.Gall@bristol.ac.uk.

12. Can we tell other people about this research?

Certainly. You are welcome to share your experience.

13. What are the next steps?

If both you and your child are happy to take part in this project, you will each be required to complete a separate consent form. Both of you will also be given a copy of this 'Participant Information Sheet' for future reference.

Thank you both for your time and attention.

Appendix 2: Research Ethics Consent Forms

Research Ethics Consent Form (A): Teacher/Parent

(To be translated into Chinese)

Title of Research:

Teaching and Learning in Piano Lessons for Students with Down Syndrome in Macao: Experiences and Perceptions

Name, position, and contacts of Researcher:

Name of Researcher: Long I-Ian

Position: Lecturer in piano performance at the Academia de Música S. Pio X

Address: Rua de Santa Clara, no.19, 2-andar, Macao

Tel: (853) 2835 5654

Email: longiian812@gmail.com

<i>Notes for Teacher/Parent Participant: (*delete as appropriate)</i>	<i>Please ✓ box</i>
1. I confirm that I have read the 'Participant Information Sheet' and have had the opportunity to ask questions relating to the above research.	<input type="checkbox"/>
2. I understand my role as Participant in this research.	<input type="checkbox"/>
3. I understand that my participation is voluntary and that I am free to withdraw at any time, without reason.	<input type="checkbox"/>
4. I, as *teacher/parent, am willing to provide information about the medical and physical conditions of the child involved.	<input type="checkbox"/>
5. I am happy to have an audio recording made of my interviews.	<input type="checkbox"/>
6. I am happy for the researcher to attend and observe the piano lessons, and to take field notes during the observation.	<input type="checkbox"/>

Please turn overleaf

7. I understand that the findings from this research, together with the information related to myself may be published.	<input type="checkbox"/>
8. I understand that the researcher will respect privacy regarding my personal information, and my audio and written data. She will have these kept confidential and securely locked away.	<input type="checkbox"/>
9. I understand that my identity will be kept anonymous throughout and after the research.	<input type="checkbox"/>

I agree to take part in this research.

Name of Participant Date Signature
 (*Teacher/Parent)

Consent obtained by:

Name of Researcher Date Signature

Research Ethics Consent Form (B): Student

(To be translated into Chinese)

Title of Research:

Teaching and Learning in Piano Lessons for Students with Down Syndrome in Macao: Experiences and Perceptions

Name, position, and contacts of Researcher:

Name of Researcher: Long I-Ian

Position: Lecturer in piano performance at the Academia de Música S. Pio X

Address: Rua de Santa Clara, no.19, 2-andar, Macao

Tel: (853) 2835 5654

Email: longiian812@gmail.com

This consent form will be carefully explained to the Student Participant in the presence of his/her parent and completed by the Student under parental supervision.

<i>Notes for the Student Participant: (*delete as appropriate)</i>	<i>Please ✓ box</i>
1. I confirm that, with the help of my *Mum/Dad, I have read the 'Participant Information Sheet' and have had the opportunity to ask questions relating to the above research.	<input type="checkbox"/>
2. I understand my role as Participant in this research.	<input type="checkbox"/>
3. I understand that my participation is voluntary and that I am free to withdraw at any time, without reason.	<input type="checkbox"/>
4. I understand that both my teacher and my *Mum/Dad will provide information about my medical and physical conditions.	<input type="checkbox"/>
5. I am happy to have an audio recording made of my interviews.	<input type="checkbox"/>
6. I am happy for the researcher to attend and observe my piano lessons, and to take field notes during the observation.	<input type="checkbox"/>

Please turn overleaf

7. I understand that the findings from this research, together with the information related to myself may be published.	<input type="checkbox"/>
8. I understand that the researcher will respect privacy regarding my personal information and my audio data. She will have these kept confidential and securely locked away.	<input type="checkbox"/>
9. I understand that my identity will be kept anonymous throughout and after the research.	<input type="checkbox"/>

I agree to take part in this research.

Name of Student Participant Date Signature

Name of Student's Parent Date Signature

Consent obtained by:

Name of Researcher Date Signature

Appendix 3: Pedagogical Intervention Sheets for Piano Teachers

1. Velásquez's Research Findings

Velásquez conducted a case study in 1991 to determine the most appropriate form of intervention for teaching piano to people with DS. Ultimately, Velásquez found that *Iconic/Symbolic representation* together with *verbal instructions* could best assist piano students with the syndrome. With this intervention, the student with DS in this case study was first told to place her hands on the fixed positions of the black keys, with the right thumb on D#. The investigator then showed this student a sheet of paper containing digits and corresponding crotchets and minims spread across the page (Figure below), and verbally instructed her to use her left hand, right hand, or both hands prior to each exercise. During each exercise, if the student paused for more than two seconds between notes, the investigator would point to the correct place on the paper. Except for the verbal instructions mentioned, there was no other verbal cue or help given.



Example of an iconic/symbolic representation based on Velásquez's description

Velásquez also commented that in addition to the appropriate intervention by the piano instructor, family support is equally important in ensuring the student's continuous progress.

Notes: _____

2. The Suzuki Method

Created in the mid-twentieth century by the Japanese violinist, educator and philosopher, Shinichi Suzuki (1898-1998), the Suzuki method for instrumental music learning follows a set of principles that is parallel to the acquisition of a child's first language, which is the 'Mother Tongue'.

1. Starting lessons as young as possible.
2. Learning how to play the instrument before learning how to read music.
3. Imitation and Repetition – Students imitate and practise repeatedly the pieces learnt from the recordings of Suzuki's repertoire for the chosen instrument.
4. Memorisation – Students are expected to memorise each individual piece from the repertoire and perform without the need for any written music.
5. 'Teacher-student-parent' triangle – Parents have an extremely important role within the Suzuki lesson structure and their active involvement is expected. A parent is required to attend the lessons with the child, noting how the child is being taught. The parent will also be taught the basics of playing the instrument in preparation for his/her role as the home teacher.

The Suzuki method can be adapted for teaching young children who have impairments or special needs. In the case of a child with DS, teachers may also make use of various forms of instruction such as visual aids, games or modelling to stimulate the learning process.

The Suzuki piano repertoire is composed of seven volumes, and the student with DS can start with Volume 1.

Notes: _____

3. Rosie Cross's Organisation and its Supporting Materials

The charity organisation 'Melody' set up by Rosie Cross has developed several resources for instrumental music teachers teaching students with special needs. These resources include:

1. Promoting 'improvisation' because children with learning difficulties are most often uninhibited when it comes to showing feelings or painting pictures in music.
2. Offering Melody's set of unique music notations – the 'alpha notation' and the 'stave notation', which was originally created for a child with DS. Both notation systems make use of colour coding and have fingering instructions, with the option for chords on the left and lyrics for songs.

- Templates for the alpha and stave notation systems can be downloaded from www.melodymusic.org.uk/notation/4574049099

Parents are also advised to make use of these special notations to help their children in between lessons.

Cross's advice to instrumental music teachers when it comes to teaching students with special needs is for them not to teach using the traditional teaching methods. Rather, they should teach these students with plenty of patience and perseverance, as well as a lot of imagination. She also highlighted that the parents' active involvement in lessons and in practice is essential for success.

Notes: _____

4. Cantan's Teaching Strategies (Colourful Keys)

Cantan, a piano teacher in Ireland and experienced in teaching students with various learning difficulties, has recommended the following teaching strategies for teaching piano students with special needs. These strategies can be implemented into the lessons in varying degree of relevance, depending on the characteristics of the individual student.

1. The use of 'clear directions' with extremely plain instructions that are almost to the point of being blunt and rude.
2. The use of 'colour coding' which can be applied to highlight any teaching materials and information that the students may find difficult to notice, such as the piano keys, notes on the stave, notes directions or intervals.

Cantan found colour coding particularly suitable when teaching students with DS because they have a tendency towards visual learning. However, she pointed out that this strategy may not be appropriate for students who are autistic or with ADHD because such students can be easily distracted by too many colours, in which case, keeping to black and white would be more appropriate. (This implies that piano teachers must be aware of any dually diagnosed conditions that their students with DS might have.)

Cantan also advised that even if parents themselves do not have any knowledge in music or the instrument, they should still get involve in their child's piano learning and be supportive at home with practising.

Notes: _____

5. Aschenbrenner's Teaching Method (Piano by Number)

Aschenbrenner is a music educator whose idea of adopting the concept of numbers as the medium to introduce the piano to beginners stemmed from his teaching of piano to a child with DS. Basically, his method involves putting numbered stickers on the piano keys to act as visual reference points on the piano.

Having spent time teaching children with DS, Aschenbrenner concluded that:

1. These children are proficient with numbers. Therefore, 'Piano by Number' is an appropriate choice of approach to teaching these children. Translating a familiar or a favourite song into numbers can effectively motivate a child with DS to learn to play the piano.
2. Working with sheet music and notation from the start is not productive because children with DS have short attention span. The task of learning to read music requires them to spend a long period of time to accomplish, risking a loss of interest in the instrument.
3. These children have extremely good musical memories. For example, if a series of notes, however complex, is repeated over and over, they can reproduce these notes from memory.

Notes: _____

Appendix 4: Interview Guides

Interview Guides for Piano Teachers

(To be conducted in Cantonese)

Interview 1 (to take place before the scheduling of the pedagogical intervention tutorial)

Guiding questions relating to Teacher's education and experience background:

1. What is your current profession?
2. Have you been trained professionally to teach students with SEND?
3. What are your qualifications? When? Where?
4. Have you ever taught or are you teaching in a mainstream school? If yes, how many years have you taught or been teaching in the mainstream school, what grade(s) and what subject(s)?
5. Were there/are there any students with SEND within your class(es)? If yes, were there/are there any with DS?
6. What has been your experience of teaching students with SEND/DS?
7. Did you make any modifications or develop any teaching strategies to teach the students with SEND/DS?
8. Was/is there any support from the school for the students with SEND?
9. How many years have you been teaching piano?

Guiding questions for the current project:

10. How did you meet this piano student with DS and how long have you been teaching him/her?
11. In the beginning, did his/her parent talk openly to you about their child's condition?
12. What are the physical and intellectual conditions of this child? Are you aware or told of any dual diagnosis, such as autism or ADHD?
13. In your opinion, have these specific conditions affected the child's learning of the piano in any way?
14. How did you go about teaching this student? Any specific method? Do you teach him/her the same way as you teach your other students with DS (if any)?

15. Please describe his/her progress from the beginning.
 16. How often do you get in touch with his/her parent to discuss progress or propose any activities for the parent to join in?
 17. Are there any major differences in the teaching and learning between a student with DS and a typically developing student?
-

Interview 2 (to take place approximately two weeks after the 5-week research period has ended)

1. Which method from the intervention sheets did you choose and why did you choose it?
2. Did you manage to apply the chosen method to all 5 lessons? Please describe how you applied this method.
3. With using this method, how have the last 5 lessons been compared to the approach you used before?
4. What has the student's progress been like in the past 5 weeks? Do you notice any other major differences, e.g., the student's conduct, physical or cognitive condition, self-confidence etc?
5. How often do you communicate with the parent now? Do you notice any differences in parent's involvement?
6. Having taught this student for a length of time now, do you feel s/he, and your other students with DS (if any), has a musical aptitude? How sensitive are they with pitch, rhythm etc?
7. What do you think of the support Macao has for children with special needs, such as DS in terms of education and/or music?
8. Is there anything else you would like to add in relation to your student / music / piano lessons?

There may be further questions once I have read through the diary that the teacher has prepared over the 5-week research period.

Interview Guides for Students

(To be conducted in Cantonese)

Interview 1 (to take place before the start of the 5-week research period in the presence of the student's parent)

1. What is your name?
 2. How old are you?
 3. What is the name of your school?
 4. What subjects do you learn in school, and which do you like most?
 5. Do you have music lessons in school? What do you do in these?
 6. Do you like playing the piano?
 7. What do you normally do during the piano lessons with Mr/Ms XXX?
 8. Do you find anything difficult in the piano lessons?
 9. Do you tell your daddy/mummy all about these piano lessons?
 10. How much do you practise at home?
 11. Do you want to continue to learn to play the piano?
-

Interview 2 (to take place approximately two weeks after the 5-week research period in the presence of the student's parent)

1. What do you think of the new games / colourful cards or materials / numbering that your teacher used in the last 5 lessons?
2. What did you do in those 5 lessons?
3. Were the last 5 lessons the same as the previous lessons you had?
4. Were there any differences?
5. Do you tell your mummy/daddy about these lessons?
6. How much do you practise now at home?
7. Do you still want to continue to learn to play the piano? Why/why not?
8. Is there anything else that you want to tell me about your piano lessons?

Interview Guides for Parents

(To be conducted in Cantonese)

Interview 1 (to take place before the start of the 5-week research period)

1. How do you feel about having a child with DS?
 2. Can you tell me about his/her physical and intellectual conditions?
 3. Does s/he attend a mainstream school? What year is s/he in?
 4. How is his/her work at school?
 5. Is there any special support from school for your child?
 6. Does s/he have music lessons in school? If yes, do you know what s/he does in these lessons? Does s/he have any chances of playing an instrument?
 7. Do you think your child enjoys these music classes?
 8. What are his/her hobbies?
 9. When and why did you decide to let him/her learn to play the piano in his/her spare time?
 10. How did you go about finding a piano teacher to teach your child? Was it easily sorted out or did you encounter difficulties?
 11. How is your relationship with the piano teacher?
 12. Have you noticed any changes in your child since taking up the piano? Changes in temperament / physical and cognitive conditions / self-confidence?
 13. Do you think your child enjoys the piano lessons? Why/why not?
 14. How much does s/he practise at home, and how are you involved in this?
-

Interview 2 (to take place approximately two weeks after the 5-week research period has ended)

1. After the last 5 lessons in which the teacher used a specific pedagogy, do you find any differences in your child's attitude or progress when compared with before this pedagogy was applied?
2. Have you noticed any other differences in the last 5 weeks?

3. Has your child been sharing his/her experience with you after the lessons? How did s/he share this experience, or what have you noticed in the way s/he related his/her experience?
4. How much does s/he practise at home now?
5. How much do you get involved now in your child's learning of the piano? Please describe how you are involved.
6. How is your relationship with the teacher now? Have you noticed any changes?
7. What do you think of the support Macao has for children with special needs, such as DS in terms of education and/or music?
8. Is there anything else you would like to add in relation to your child / music / piano lessons?

There may be further questions once I have read through the diary that the parent has prepared over the 5-week research period.

Appendix 5: Observation Template

Observation:

Date:

Time:

Number of Individuals:

Venue:

Theme:

Elements	Description
Space	
Actor	
Activity	
Object	
Act	
Event	
Time	
Goal	
Feeling	

Appendix 6: Initial Ideas (Potential Codes) from First Reading of Data

Teachers' experiences and perceptions

- Enthusiastic students
- Students' stubbornness
- Students' reluctance to learn new knowledge unless they like the topic
- Students with DS love music
- Good musical memory
- Slow Progress
- Difficult to correct students' errors
- Feeling of failure, frustration, and guilt in teaching
- Parents can be a major obstacle

Teachers' experiences of impact of support with piano pedagogies

- Feel more confident about teaching students with DS
- Teachers can give clearer advice to parents
- More preparation works needed before and after lessons
- Teachers are better equipped with materials and planning
- Easier for teachers to understand students' difficulties, so they become more capable of providing what the students need
- Enhance students' interest in learning the instrument
- Students concentrate more when listening to instructions in class
- Colours help students identify the notes
- Numbers help students recognise the note positions

Students' experiences and perceptions

- Love playing the piano
- I can play the piano
- Mummy plays the piano with me
- Do not like reading music scores
- Like to play easy melodious music
- It is fun

Parents' experiences and perceptions

- Children with DS have the right to include music in their lives
- Children enjoy having piano lessons
- Learning the piano enhances the relationship among family members
- Children are happier and have more to express after learning the piano
- Difficulties in finding piano teachers

Appendix 7: Coding Samples (RQ1)

Interview 1 Transcript (Ms An-ling)

Date: 14th September 2019

Time: 2pm-2:30pm

Venue: Macao Down Syndrome Association

Guiding questions relating to Teacher's education and experience background:

1. What is your current profession?

I've been a full-time piano teacher for 5 years. I mostly teach students in my own piano studio. I also give music theory lessons to my piano students.

2. What are your qualifications? When? Where?

I've been learning the piano since I was 6. I passed the DipABRSM diploma exam of ABRSM back in 2005. I took the exam in Macao.

3. Have you been trained professionally to teach students with SEND?

No ... **I don't think there's any professional training that guides teachers to teach musical instruments to SEND students, at least not in Macao.**

- Sub-code - Lack of professional training in Macao.

Code: Training to teach students with DS.

4. Have you ever taught or are you teaching in a mainstream school? If yes, how many years have you taught or been teaching in the mainstream school, what grade(s) and what subject(s)?
No. I've never taught in a mainstream school.

Qualifications and Experiences

5. Were there/are there any students with SEND within your class(es)? If yes, were there/are there any with DS?

Apart from Au-na who's in this project, **I've taught two SEND students but neither of them has DS.**

*- Sub-code - Experience with other forms of SEND.
Code: Experience in teaching students with DS.*

6. What has been your experience of teaching students with SEND/DS?

SEND students are often very ... reluctant to learn new things. Their temper could be extreme.

Teaching them requires much more patience than with other students.

'Sub-code - Stubbornness affects progress. Code: Behavioural problems

7. Did you make any modifications or develop any teaching strategies to teach the students with SEND/DS?

Yes, I think so. **As I said, teaching SEND students needs much more patience than with other**

students. I've tried my best to slow down the teaching process to make them understand the contents of the lessons. But the progress is often quite unsatisfactory ... since I feel that most SEND students don't have good memories. Also, they don't practise as much as other students.

Theme - Difficulties in teaching

Code: Inadequate experience in pedagogical modification.

8. Was/is there any support from the school for the students with SEND?

(N/A)

9. How many years have you been teaching piano?

(Information already given when answering Question 1)

Guiding questions for the current project:

10. How did you meet this piano student with DS and how long have you been teaching him/her?

Sub-code: Human rights.
Code: Motivation vs satisfaction
Theme: Personal beliefs

I've been teaching Au-na for 6 months. The Macao Down Syndrome Association contacted me about 7 months ago and asked if I was willing to offer piano lessons to their children with DS. I think everyone should have the right to learn musical instruments. I said yes and the Association introduced me to Au-na who's one of their members.

11. In the beginning, did his/her parent talk openly to you about their child's condition?

Not exactly ... Although Au-na is a member of the Association, her parent has always been trying to present the daughter as normal as possible in front of me. For example, she would say that Au-na could understand everything I taught but she's just too lazy to perform. This is truly making some of the lessons quite embarrassing since Au-na's Mum would sometimes even scold Au-na during the lessons.

Sub-code: Not open enough about conditions of student and lack of communication.

Code: Parents being an obstacle. Theme: Difficulties in teaching

12. What are the physical and intellectual conditions of this child? Are you aware or told of any dual diagnosis, such as autism or ADHD?

I don't feel nor was I told that Au-na got dual diagnosis, but her mum told me that Au-na's heart is not as strong as other students.

Sub-code: Health issues

Code: Inadequate experience in pedagogical modification

Theme: Difficulties in teaching

13. In your opinion, have these specific conditions affected the child's learning of the piano in any way?

Not too much. I've been trying not to make Au-na too excited in class although she's often quite enthusiastic during the lessons.

Sub-code: Students' love for music. Code: Motivation vs satisfaction. Theme: Personal beliefs

14. How did you go about teaching this student? Any specific method? Do you teach him/her the same way as you teach your other students with DS (if any)?

Au-na is a good student. She loves playing the piano. However, her learning progress is really slow. I've tried to force her to recognise the notes on the music score, but it's so difficult for her to sense the small changes in positions of the notes on the staves. I don't have other students with DS yet, but I've been teaching Au-na in the way that I teach other students without DS.

Sub-code: Cognitive conditions. Code: Inadequate experience in pedagogical modification.

Theme: Difficulties in teaching.

Code: Motivation vs satisfaction. Theme: Personal beliefs.

15. Please describe his/her progress from the beginning.

Her progress was really slow. As a teacher, I feel so guilty and am in despair because sometimes

I don't even know how to start the lessons. Her ability to recognise the notes on the staves is very

weak. She has just learnt two short melodies in the past 6 months.

(Sub-code: Cognitive conditions. Code: Inadequate experience in pedagogical modification.

Theme: Difficulties in teaching.

16. How often do you get in touch with his/her parent to discuss progress or propose any activities

for the parent to join in?

Au-na's Mum would sometimes join in the lessons, but I didn't like it to be honest. As I said, she

would shout at Au-na during lessons, so I wouldn't propose any activities for the parent to join in.

I usually talked a little about the progress with Au-na's Mum after the lessons for just about 5

minutes.

(Sub-code: Interruption to lessons. Code: Parents being an obstacle.

Theme: Difficulties in teaching.

17. Are there any major differences in the teaching and learning between a student with DS and a

typically developing student?

(Sub-code: Stubbornness affects progress. Code: Behavioural problems.

Yes. Au-na is very stubborn. Whenever she played a wrong note, it would be difficult to correct

her mistake unless we practised together for more than 20 times. However, she has a good

memory in music. She could now play the two songs that she has learnt from memory with

correct positioning of the hand and fingerings.

- Sub-code: Good musical memory.

Code: Musical aptitude.

Theme: Interpretation of Students' musicality.

Reflections about Ms An-ling:

Negative feeling towards the parent

Not feeling satisfied with Au-na's progress

Feeling guilty and desperate

Date: 5th October 2019

Time: 5pm-5:30pm

Number of Individuals: 3

Venue: Ms Bai-xue's piano studio

Theme: The Suzuki Method as the choice of pedagogical intervention

Elements	Description
Space	The lesson was in one of rooms in the teacher's home. The room was quite small, but it was neat and tidy. There was a window with curtains closed. The room was brightly lit, giving a sense of vitality. An upright piano occupied much of the space, with a small desk on its left-hand side. A bookcase opposite the piano, full of music books and scores, all neatly stacked. The parent sat at the piano. Both the teacher and the student sat on the chairs on the right hand-side of the parent. The observer sat by the bookcase, close to the participants.
Actor	Teacher - Ms Bai-xue Student - Bu-ran Parent - Bu-ran's Mum
Activity	<p>The lesson started on time.</p> <p>Greeting. Refusing to wear glasses. Ms Bai-xue said hello to Bu-ran and her mum while opening the door of her studio for them. Bu-ran looked angry. Bu-ran's Mum said that her daughter refused to wear her glasses again, so the parent scolded her along the way. Ms Bai-xue explained to Bu-ran's Mum that as they were going to start using a new method - the Suzuki piano method from this lesson, Bu-ran might not be needing her glasses as much. In accordance with the Japanese tradition, Ms Bai-xue invited Bu-ran and her mum to take a bow before the start of the lesson. Bu-ran found that funny and laughed as all three of them took a bow.</p> <p>Bu-ran's Mum learning the piano Ms Bai-xue invited Bu-ran's Mum to sit on the piano bench while Bu-ran was asked to sit on the side to watch. Ms Bai-xue explained that following the Suzuki method, the child would observe the mother as she learns to play pieces of music on the piano and practises them at home, until the child herself is motivated to learn to play.</p> <p><i>Sub-code: Stubbornness affects progress. Code: Behavioural problems Theme: Difficulties in teaching</i></p>

Diary from Ms Chi-yan, submitted on 6 November 2019

Date and Time: 4th October 2019

I had a look at the materials given by Ian - the tunes for 'Mary Had a Little Lamb' and 'Hide and Seek'.

I tried to play them on the piano. I'm not sure if Chao-chao would understand this reading method. I'll try my best to give him clear instructions. I bought some sweets as reward for him tomorrow.

Date and Time: 6th October 2019

The lesson was not bad. Chao-chao wasn't very focused (same as before). He was very active, running here and there in the Association. He played 'Mary had a Little Lamb' once with guidance. I asked Chao-chao's Mum to practise with him every day so he would remember the reading method.

Sub-code: Restlessness and/or inattentiveness. Code: Behavioural problems. Theme: Difficulties in teaching.

Date and Time: 13th October 2019

Lesson 2 was better than last week. Chao-chao managed to play 'Mary Had a Little Lamb' 3 times. The playing was very slow, but I still gave him a piece of chocolate after the lesson. I taught him how to remember the thumb position on the F#, but I still needed to remind him every time he played.

Sub-code: Good musical memory. Code: Musical aptitude. Theme: Interpretation of students' musicality.

Date and Time: 20th October 2019

Chao-chao could play 'Mary Had a Little Lamb' alone today without my pointing at the numbers on the paper! He has a good memory although he's not always attentive. I'm glad his mum practised with him every day. It was an achievement for him, his parent and me.

Date and Time: 27th October 2019

Today, I taught Chao-chao a new piece - 'Hide and Seek' after listening to him playing 'Mary Had a Little Lamb' without my help. With me pointing at the music score, he learnt the new piece quite fast, because he wanted the sweets from me. Even though I'm his piano teacher, I had never thought that he could play the piano. But I think this method couldn't last forever, because there aren't many pieces that only use the black keys on the piano. I believe Chao-chao would still need to learn the white keys in the future.

Sub-code: Satisfaction with support of piano pedagogies.

Date and Time: 3rd November 2019

Chao-chao did quite well today. He could play 'Hide and Seek' without my pointing at the numbers on the paper. The lesson has become smoother now.

Code: Motivation vs satisfaction.

Theme: Personal beliefs.

Initial Codes (RQ1)

1. Enthusiastic students
2. Stubborn
3. Reluctant to learn new knowledge unless they like the topic
4. Students with DS love music
5. Good memory
6. Slow progress
7. Difficult to correct students' errors
8. Feeling of failure, frustration, and guilt in teaching
9. Parents can be a major obstacle
10. Lack of professional training
11. Lack of governmental support
12. Human rights
13. Good musicality

Code Sample: Behavioural Problems (RQ1)

Interview 1 Transcript (Ms An-ling)

SEND students are often very — reluctant to learn new things. Their temper could be extreme. Teaching them requires much more patience than with other students.

As I said, teaching SEND students needs much more patience than with other students. I've tried my best to slow down the teaching process to make them understand the contents of the lessons.

Au-na is very stubborn. Whenever she played a wrong note, it would be difficult to correct her mistake unless we practised together for more than 20 times.

Interview 2 Transcript (Ms An-ling)

She got bored and distracted more easily in the past.

She also becomes more confident in her performance. I think her stubbornness sometimes comes from her lack of confidence — and she cooperates better now and is less moody in class.

Diary from Ms An-ling

I'm glad that Au-na concentrated in the lesson, and she learnt quite fast.

Her Jingle Bells was better than last week, but she was quite stubborn when her errors were being corrected.

She lost a bit of her temper during the revision of Jingle Bells.

Interview 1 Transcript (Ms Bai-xue)

Bu-ran is short-sighted but sometimes she refuses to wear glasses. She's quite stubborn sometimes.

There was one lesson where Bu-ran's Mum and I spent the whole time trying to persuade her to put on her glasses

They are very stubborn people who can't be forced to do anything.

Interview 2 Transcript (Ms Bai-xue)

I felt she's less stubborn and more cooperative in class.

Dairy from Ms Bai-Xue

Bu-ran's Mum learnt the whole of the Theme today while Bu-ran was listening quite attentively throughout the lesson.

She wanted to learn the piece and it was like a miracle that she paid attention to my teaching.

She's more attentive and confident in the lessons now.

Interview 1 Transcript (Ms Chi-yan)

But whenever Chao-chao's Mum and I try to ask him to sit on the piano bench and learn, he often doesn't cooperate. He just doesn't like sitting still on the bench and he's quite stubborn.

I was told that Chao-chao is quite naughty and stubborn

Chao-chao's Mum told me that there's no proof that Chao-chao also has ADHD. Yet, we agree that he does have some ADHD-like symptoms. According to Chao-chao's Mum, he's frequently inattentive in class.

Since he's so inattentive and stubborn, I'm like chasing after him with the music note flash cards every lesson.

They look happy but at the same time, reluctant to learn new things.

Interview 2 Transcript (Ms Chi-yan)

He liked the piano lessons more and he cooperated with me better.

Diary from Ms Chi-yan

Chao-chao wasn't very focused (same as before). He was very active, running here and there in the association.

Themes (RQ1)

Theme 1: Qualifications and Experience

- Code 1: Training to teach students with DS
 - Sub-code 1: Unavailability of courses in Macao
 - Sub-code 2: Lack of professional training in Macao
- Code 2: Experience in teaching students with DS
 - Sub-code 1: No previous experience
 - Sub-code 2: Experience with other forms of SEND

Theme 2: Difficulties in Teaching

- Code 1: Inadequate experience in pedagogical modification
 - Sub-code 1: Cognitive conditions
 - Sub-code 2: Health issues
- Code 2: Behavioural problems
 - Sub-code 1: Stubbornness affects progress
 - Sub-code 2: Restlessness and/or inattentiveness
- Code 3: Parents being an obstacle
 - Sub-code 1: Not open enough about conditions of student and lack of communication
 - Sub-code 2: Interruption to lessons

Theme 3: Personal Beliefs

- Code 1: Motivation vs satisfaction
 - Sub-code 1: Students' love for music
 - Sub-code 2: Human rights
 - Sub-code 3: Satisfaction with support of piano pedagogies

Theme 4: Interpretation of Students' Musicality

- Code 1: Students' aptitude
 - Sub-code 1: Good musical memory
 - Sub-code 2: Pitch sensitivity
 - Sub-code 3: Musically talented/gifted

Theme 5: Sociocultural Influence

- Code 1: Lack of governmental support
 - Sub-code 1: Lagging behind Hong Kong in facilities for SEND
 - Sub-code 2: Not enough support for teachers of SEND
 - Sub-code 3: Inadequate aid for parents
 - Sub-code 4: The need to educate the public

Appendix 8: Group Apple's Data Samples

Interview 2 Transcript (Ms An-ling)

Date: 23rd November 2019

Time: 2pm-2:30pm

Venue: Macau Down Syndrome Association

1 1. Which method from the intervention sheets did you choose and why did you choose it?

2 I chose Piano by Number based on Au-na's needs. The reason came from my experience working
3 with Au-na, noticing that she was very weak at reading traditional music notation. I felt this
4 method was more straightforward for her.

5

6 2. Did you manage to apply the chosen method to all 5 lessons? Please describe how you applied
7 this method.

8 Yes. I used the score you gave me and taught Au-na using the method of reading numbers when
9 playing the piano. I warmed up with her every time by playing the game of picking a number and
10 asking her to play the note on the piano. We proceeded to practise 'Jingle Bells' for a few times.
11 I mostly pointed at the music score while she played.

12

13 3. With using this method, how have the last 5 lessons been compared to the approach you used
14 before?

15 She learnt the music faster than before. In the past, she would need at least 6 weeks to
16 accomplish a piece of music. She got bored and distracted more easily in the past. During the
17 last 5 lessons, Au-na already got most of the music memorised.

18

19 4. What has the student's progress been like in the past 5 weeks? Do you notice any other major
20 differences, e.g., the student's conduct, physical or cognitive condition, self-confidence etc.?

21 As mentioned above, her progress was obviously faster than before. She also became more
22 confident in her performance. I think her stubbornness sometimes came from her lack of
23 confidence — and she cooperated better and was less moody in class.

24

25 5. How often do you communicate with the parent now? Do you notice any differences in
26 parent's involvement?

27 Au-na's Mum was involved in every lesson now. She helped me like an assistant in the studio,
28 managing Au-na's emotions and clarifying her expressions. The lessons went smoother with the
29 help of Au-na's Mum.

30

31 6. Having taught this student for a length of time now, do you feel s/he, and your other students
32 with DS (if any), has a musical aptitude? How sensitive are they with pitch, rhythm etc.?

33 I couldn't say that children with DS are genius at music — but Au-na works fair in relation to her
34 IQ standard. She's quite sensitive in pitch as she could hum the tune when playing. She likes the
35 playing of piano and the lessons even better than some of the typically developing students.

36

37 7. What do you think of the support Macao has for children with special needs, such as DS in
38 terms of education and/or music?

39 The support from the Macao Government could be a lot more. When compared to Hong Kong,
40 where they even have an orchestra for SEND students, children with DS in Macao have fewer
41 choices in participating in musical activities.

42

43 8. Is there anything else you would like to add in relation to your student / music / piano lessons?

44 As a teacher, I feel more confident and well-prepared when I face the student and parent during
45 the lessons. I'm glad to have participated in this research project and I wish this project success.

46

47 There may be further questions once I have read through the diary that the teacher has prepared
48 over the 5-week research period.

49

50 9. Do you find it useful to keep a teaching diary like the one I gave you for the research?

51 Yes, absolutely. I've used it to plan my teaching and to jot down the progress in each lesson. It
52 gives a clearer picture about Au-na's improvement in those 5 lessons. This is also a motivation
53 for me as a teacher.

Interview 2 Transcript (Au-na)

Date: 23rd November 2019

Time: 3pm-3:30pm

Venue: Macau Down Syndrome Association

- 1 1. What do you think about the new numbering games that Ms An-ling played in the last 5 lessons?
2 My piano has — numbers — so fun (she answers with excitement)
3
4 2. What did you do in those 5 lessons?
5 Play a song (humming the melody) play games
6
7 3. Were the last 5 lessons the same as the previous lessons you had?
8 No — Mummy here
9
10 4. Were there any differences?
11 I like (nodding her head)
12
13 5. Do you tell your mummy/daddy about these lessons?
14 Mummy practises with me
15
16 6. How much do you practise now at home?
17 I practise — after school
18
19 7. Do you still want to continue to learn to play the piano? Why/why not?
20 Yes I like (smiling excitedly)
21
22 8. Is there anything else that you want to tell me about your piano lessons?
23 I — teach Mummy
24
25 Remark:
26 — Significant pauses

Interview 2 Transcript (Au-na's Mum)

Date: 23rd November 2019

Time: 2:30pm-3pm

Venue: Macau Down Syndrome Association

1 1. After the last 5 lessons in which the teacher used a specific pedagogy, do you find any
2 differences in your child's attitude or progress when compared with before this pedagogy was
3 applied?

4 Yes. The numbering on the piano made it much easier for my daughter to learn the piece of
5 music than reading traditional music score. It's also easier for me, a parent who doesn't know
6 how to read scores, to practise with her.

7

8 2. Have you noticed any other differences in the last 5 weeks?

9 Au-na is a very stubborn child. She would refuse to do the task if she thought it would be too
10 difficult for her. I think the method matches her standard well. She's a bit more willing to try
11 new things than before.

12

13 3. Has your child been sharing his/her experience with you after the lessons? How did s/he share
14 this experience or what have you noticed in the way s/he related his/her experience?

15 She didn't share a lot with me, but we had the lessons together and practised together. I feel that
16 she's becoming more confident in playing the piano.

17

18 4. How much does s/he practise at home now?

19 Around 10-30 minutes, depends on if I've time to practise with her. Sometimes we missed a day
20 of practice if we weren't at home during the evening.

21

22 5. How much do you get involved now in your child's learning of the piano? Please describe how
23 you are involved.

24 I've tried my best to get involved now. I'm in the lessons and I practise with her as much as I
25 can. I would talk with the teacher after each lesson and tell her about my difficulties with
26 practice.

27

28 6. How is your relationship with the teacher now? Have you noticed any changes?

29 We've become closer, I suppose. She speaks to me more than before. Since I am also in the
30 lesson, I would sometimes help control Au-na's temper and assist other situations like toilet time.

31 I think Ms An-ling and I work well together.

32

33 7. What do you think of the support Macao has for children with special needs, such as DS in
34 terms of education and/or music?

35 I think the support from the Macao Government could be more since the city is rich due to the
36 gambling business. I hope there would be more supportive lessons for children with DS like this
37 piano course in the future.

38

39 8. Is there anything else you would like to add in relation to your child / music / piano lessons?

40 I feel grateful that you've paid attention to children with DS in learning music in Macao. I hope
41 your research would raise more concern from the Macao educators and government.

42

43 There may be further questions once I have read through the diary that the parent has prepared
44 over the 5-week research period.

45

46 9. I noticed from your diary that you have scolded Au-na during the practice. Do you think
47 scolding her would improve her concentration in the practice?

48 No. Honestly, it didn't help at all. Every time I scolded her, she would feel upset for a while.

49 Children with DS could sense people's temper and they would easily get irritated. I'm trying my
50 best not to scold her during practice.

51

52 10. There was one time in the diary that your husband joined in the practice. How do you feel
53 about the joining of both parents in the practice?

54 In fact, my husband has joined in several times recently. The piano practice has become a family
55 gathering, and it's an enjoyable time in the evening. We all feel happy about it.

Date: 5th October 2019

Time: 2pm-2:30pm

Number of Individuals: 3

Venue: Ms An-ling’s piano studio

Theme: ‘Piano by Number’ as the choice of pedagogical intervention

Elements	Description
Space	<p>The lesson was in the teacher’s living room. It was quite spacious. A two-seater sofa on one side with a coffee table in front. Opposite was a TV in a cabinet with a vase of flowers beside it. The room had windows with afternoon sunlight coming through. Pale yellow lighting – warm and cosy.</p> <p>An upright piano stood against the wall opposite to the entrance. Next to the piano on the right was a desk.</p> <p>The observer sat near the entrance door, facing the back of the student, parent and teacher.</p> <p>The student sat on the piano bench in front of the piano, while the teacher sat on a chair on the right-hand side of the student, and the parent sat on a chair on the left-hand side of the student.</p>
Actor	<p>Teacher – Ms An-ling Student – Au-na Parent – Au-na’s Mum</p>
Activity	<p>The lesson started on time.</p> <p>Greeting and noticing numbered stickers on piano Au-na looked happy when she and her mum came into the room. She said hello to everyone and put her music book on the music stand. She didn’t seem afraid nor nervous about my presence as an observer. She noticed the numbered stickers on the middle register of the piano and asked Ms An-ling what they were. Au-na’s Mum sat down next to Au-na on the left.</p> <p>Explaining the numbered stickers Ms An-ling sat down beside Au-na and began to introduce the numbering on the piano. Ms An-ling pointed at the numbers and counted them together with Au-na. They did this 3 times. Next Ms An-ling pointed at the numbers again and sang the solfege. Then both Ms An-ling and Au-na sang the solfege together 3 times.</p>

	<p>Introducing the Number Game Ms An-ling said a number and pointed at it at the same time and asked Au-na to play it on the piano. They repeated the exercise 5 times. Au-na was not very familiar with Arabic numbers, and she made some mistakes as she played. Ms An-ling corrected her every time she made a mistake.</p> <p>New piece of music – ‘Jingle Bells’ 1. Ms An-ling took out a new album of music scores and gave it to Au-na as a gift. Au-na was very happy. Au-na’s Mum reminded Au-na to say ‘thank you’ to the teacher, and she did so. Ms An-ling opened the book to the first page where ‘Jingle Bells’ was printed. She played the song once with her right hand while pointing at the numbers on the music score with her left hand. Au-na listened and watched. 2. Ms An-ling invited Au-na to play the song while she guided her by finger pointing at the numbers on the music score. 3. Au-na played slowly while watching the score and the keyboard. 4. It took Au-na about 3-4 minutes to finish playing the first time. Ms An-ling invited Au-na to repeat playing 2 more times. Between each practice, Ms An-ling praised Au-na a little and let her rest for a short while. During the 2nd and 3rd times, Ms An-ling also required Au-na to stand her fingertips up properly.</p> <p>Revision before the end 1. Ms An-ling asked Au-na what the numbers were on the keyboard. Au-na answered, ‘do-re-mi-fa-sol-la-ti-do’. 2. Ms An-ling pointed to a number on the music score and asked Au-na to play it. 3. Au-na played a wrong note. 4. Ms An-ling corrected her. 5. Au-na played ‘Jingle Bells’ once more with Ms An-ling pointing at the numbers on the music score.</p> <p>Conversation between Ms An-ling and Au-na’s Mum after lesson Ms An-ling asked Au-na’s Mum to practise the Game by Numbers with Au-na every day, so that Au-na could remember the method. Ms An-ling also prepared a set of numbered stickers for Au-na’s Mum to stick on the piano at home. Ms An-ling gently reminded Au-na’s Mum that she could support Au-na better at home with more patience and love rather than with scolding.</p>
Object	1 upright piano / 1 piano bench / 1 music book 3 chairs / 1 desk / 1 pencil / 2 sets of numbered stickers

Act	Ms An-ling taught Au-na's Mum where to put the numbered stickers on Au-na's piano at home.
Event	N/A
Time	N/A
Goal	N/A
Feeling	<p>Au-na looked interested in the numbered stickers on the piano.</p> <p>The Number Game seemed a good method for Au-na to practise before learning a new piece of music, and she seemed to like it because she laughed when playing the game.</p> <p>Au-na must have found this method easier to follow because she kept laughing and singing the solfege while she was playing. She seemed to have enjoyed the lesson and the music.</p> <p>Au-na liked the method but still it was not easy for her to play every note correctly. She kept making mistakes.</p> <p>Au-na's Mum seemed interested in the new method.</p>

Diary from Ms An-ling, submitted on 6 November 2019

1 Date and Time: 1st October 2019, 7pm

2 Preparing materials for lesson 1:

3 I bought 2 sets of numbered stickers earlier today and stuck one set on the piano in my studio.

4

5 Date and Time: 2nd October 2019, 10am

6 I studied the website produced by Aschenbrenner and learnt more about the ideas and processes
7 suggested. There're sets of music score which I can buy, including the one that Ian has given me.

8

9 Date and Time: 4th October 2019, 3pm

10 Planning the structure of lesson 1:

11 1. Explain the numbered stickers

12 2. Light-hearted game using numbers – the Number Game

13 3. Teach Jingle Bells

14 4. Revision

15 5. Talk with Au-na's Mum

16

17 Date and Time: 5th October 2019, 4pm

18 I'm glad that Au-na concentrated in the lesson, and she learnt quite fast. The lesson was
19 surprisingly interesting and smooth going!

20

21 Date and Time: 11th October 2019, 4pm

22 Planning the structure of lesson 2:

23 1. Warm up with the Number Game

24 2. Revision of Jingle Bells

25 In my experience, Au-na would usually forget how to play the piece of music that she had learnt
26 in the previous lesson. So, I predict tomorrow would mainly be revision.

27

28 Date and Time: 12th October 2019

29 Au-na loved the Number Game. She could concentrate for 10 minutes with the game. Her Jingle
30 Bells was better than last week, but she was quite stubborn when her errors were being corrected.

31 I gathered from her parent's comments that she did better with my fingers pointing at the music
32 score. This is actually true with all students, including the typically developing students.

33

34 Date and Time: 18th October 2019

35 Planning the structure of lesson 3:

36 1. Warm up with the Number Game

37 2. Revision of Jingle Bells

38 I would teach a new piece of music if Au-na could play Jingle Bells very well tomorrow – if she
39 could at least play the music without my pointing at the score.

40

41 Date and Time: 19th October 2019

42 Lesson 3 today. Au-na was a lot better in the Number Game, but she did just a bit better in
43 playing Jingle Bells, so I decided to stay with this piece first. She lost a bit of her temper during
44 the revision of Jingle Bells.

45

46 Date and Time: 25th October 2019

47 Planning the structure of lesson 4:

48 1. Warm up with the Number Game

49 2. Revision of Jingle Bells

50 3. Memorise Jingle Bells

51 I would like to test Au-na to see if she could play Jingle Bells from memory after 3 weeks of
52 practice. It may be still too early to do that but who knows ...

53

54 Date and Time: 26th October 2019

55 Lesson 4 today. Au-na's reaction was a bit slow. Her parent said that she was sick a few days
56 before, and the parent herself was too busy to practise with her every day. I understand that
57 unpredictable circumstances do happen in life. I ended up not asking Au-na to play Jingle Bells
58 from memory.

59

60 Date and Time: 1st November 2019

61 Planning the structure of lesson 5:

62 1. Warm up with the Number Game

63 2. Revision of Jingle Bells

64 3. Memorise Jingle Bells

65

66 Date and Time: 2nd November 2019

67 Lesson 5 today. Au-na could memorise some parts of Jingle Bells today. I'm touched! The
68 progress in the past 5 lessons has been a huge improvement for a student with DS!

Appendix 9: Group Banana's Data Samples

Interview 2 Transcript (Ms Bai-xue)

Date: 23rd November 2019

Time: 5pm-5:30pm

Venue: Macau Down Syndrome Association

1 1. Which method from the intervention sheets did you choose and why did you choose it?

2 I decided to try the Suzuki method because Bu-ran is short-sighted, and it's quite difficult to ask
3 her to wear glasses. So instead of forcing her to wear glasses, I wanted to try and use the Suzuki
4 method which emphasised on imitation instead of note reading.

5

6 2. Did you manage to apply the chosen method to all 5 lessons? Please describe how you applied
7 this method.

8 Yes. I did. I applied the idea of parental involvement in the lessons, and it's been very useful.

9 Bu-ran's Mum acted as a role model for Bu-ran in the first two lessons before she learnt the same
10 music. Bu-ran's Mum also practised and played the recording of the music at home as much as
11 possible.

12

13 3. With using this method, how have the last 5 lessons been compared to the approach you used
14 before?

15 The method made the last 5 lessons much smoother since we didn't need to spend time
16 persuading Bu-ran to wear glasses. That made everyone more relaxed. Bu-ran's learnt the first
17 phrase of 'Twinkle Twinkle Little Star' in 3 lessons, and it was faster when compared to the
18 traditional approach. Watching her mummy learn to play the piano has motivated Bu-ran a lot.
19 I've always thought that even for typically developing students, they might not understand that
20 they aren't the one nor the only one to be put in piano lessons. They aren't forced to learn to play
21 the piano by their parents. It shouldn't be in fact. In Bu-ran's case, by watching her mummy
22 setting an example, she was motivated to learn rather than being forced to have lessons.

23

24 4. What has the student's progress been like in the past 5 weeks? Do you notice any other major
25 differences, e.g., the student's conduct, physical or cognitive condition, self-confidence etc.?

26 The progress has been satisfying. Bu-ran's quite confident in the lessons now — and I
27 remembered she wore glasses in lesson 5 because she wanted to play even better. I felt she's less
28 stubborn and more cooperative in class.

29

30 5. How often do you communicate with the parent now? Do you notice any differences in
31 parent's involvement?

32 I talked with Bu-ran's Mum every lesson. She became quite devoted in the learning and enjoyed
33 being a model. She helped me a lot by practising with Bu-ran at home. The communication has
34 been very well.

35

36 6. Having taught this student for a length of time now, do you feel s/he, and your other students
37 with DS (if any), has a musical aptitude? How sensitive are they with pitch, rhythm etc.?

38 Bu-ran was quite talented. At least she could learn the music all by listening and could play from
39 memory. I felt her ability in music was not much less than a typically developing child except for
40 the slower progress. But after all, progress may not be an important matter when teaching
41 children with DS. There's no need to compare with the typically developing ones.

42

43 7. What do you think of the support Macao has for children with special needs, such as DS in
44 terms of education and/or music?

45 I hope at least more teachers would be able to learn what we're doing and join our piano
46 programme. There are too few teachers, of any subjects, who are willing to teach SEND students.

47

48 8. Is there anything else you would like to add in relation to your student / music / piano lessons?

49 I admit that teaching a student with DS with a specific method would increase my preparation
50 time. I read the materials you gave me — I planned lessons — reviewed them. It took up more
51 of my time now compared with the lessons in the past when we just sat there, making no progress.
52 I felt prouder of myself as a teacher now. Thank you so much!

53

54 There may be further questions once I have read through the diary that the teacher has prepared
55 over the 5-week research period.

56 (No further questions)

Interview 1 Transcript (Bu-ran)

Date: 14th September 2019

Time: 6pm-6:30pm

Venue: Macau Down Syndrome Association

- 1 1. What is your name?
2 Bu-ran
3
4 2. How old are you?
5 7 years old
6
7 3. What is the name of your school?
8 School B*
9
10 4. What subjects do you learn in school, and which do you like most?
11 Music — sports
12
13 5. Do you have music lessons in school? What do you do in these?
14 Yes — we sing
15
16 6. Do you like playing the piano?
17 Yes — I can play piano
18
19 7. What do you normally do during the piano lessons with Ms Bai-xue?
20 We move our fingers on piano — we play piano — we jump and play games
21
22 8. Do you find anything difficult in the piano lessons?
23 No
24
25 9. Do you tell your daddy/mummy all about these piano lessons?
26 Yes — I tell my friends too
27
28 10. How much do you practise at home?
29 — (looks confused) I don't need to practise
30
31 11. Do you want to continue to learn to play the piano?
32 Yes (she answers firmly)

33

34 Reflections:

35 Understood the questions and could answer competently

36 Rather shy when facing strangers

37

38 Remarks:

39 * Pseudonym is used to protect Bu-ran's personal information

40 — Significant pauses

Interview 1 Transcript (Bu-ran's Mum)

Date: 14th September 2019

Time: 5:30pm-6pm

Venue: Macau Down Syndrome Association

1 1. How do you feel about having a child with DS?

2 When Bu-ran was born, I cried every day. The feeling of hopelessness was all over me every day.
3 But day after day raising her, seeing her smiling happily, I felt no difference than raising a non-
4 disabled child. We love her and support her just like every other parent.

5

6 2. Can you tell me about his/her physical and intellectual conditions?

7 She's 7 now. She's a bit shorter, which is normal for children with DS. Her reaction is always
8 quick and eager, although I agree that she doesn't always think clearly before she reacts. She's
9 seriously short-sighted, but she doesn't like wearing glasses.

10

11 3. Does s/he attend a mainstream school? What year is s/he in?

12 She's studying in a mainstream school with inclusive education. She's in Primary 2.

13

14 4. How is his/her work at school?

15 She's progressing okay. I revise the schoolwork with her every day to make sure she understands
16 and remembers.

17

18 5. Is there any special support from school for your child?

19 There're social workers in the school, but they're very busy. We seldom talk unless something
20 happened.

21

22 6. Does s/he have music lessons in school? If yes, do you know what s/he does in these lessons?

23 Does s/he have any chances of playing an instrument?

24 Yes, there're music lessons. She mostly learns singing in the lessons. There isn't any teaching of
25 musical instruments in her school.

26

27 7. Do you think your child enjoys these music classes?

28 Yes, she enjoys them very much. Ever since she was a baby, she would dance and smile
29 whenever she heard music. She can always remember the melodies taught in school.

30

31 8. What are his/her hobbies?

32 In our spare time, I would bring her to the African drum class here at the association. She also
33 started learning the piano 3 months ago. She likes to go swimming too during the summer.

34

35 9. When and why did you decide to let him/her learn to play the piano in his/her spare time?

36 It's because she loves music. That's why I applied immediately when I realised there're lessons
37 offered by the association.

38

39 10. How did you go about finding a piano teacher to teach your child? Was it easily sorted out or
40 did you encounter difficulties?

41 I know it's not easy for SEND children to find a piano teacher in Macao. Those music studios
42 often refuse to take them as students. I even hesitated to ask for information.

43

44 11. How is your relationship with the piano teacher?

45 Quite good. We talked a bit after every lesson. Bu-ran likes her very much.

46

47 12. Have you noticed any changes in your child since taking up the piano? Changes in
48 temperament / physical and cognitive conditions / self-confidence?

49 Yes, she becomes more confident. She keeps telling her friends that she can now play the piano.

50

51 13. Do you think your child enjoys the piano lessons? Why/why not?

52 She enjoys the piano lessons. She asks me every day when she'll go to Ms Bai-xue's studio again.

53

54 14. How much does s/he practise at home, and how are you involved in this?

55 I've a toy piano for her, but she doesn't practise much at home. I don't know how to play the
56 piano so I can't practise with her at home.

57

58 Reflections:

59 Supportive parent without pushing too much

60 Rather timid

Date: 19th October 2019

Time: 5pm-5:30pm

Number of Individuals: 3

Venue: Ms Bai-xue’s piano studio

Theme: The Suzuki Method as the choice of pedagogical intervention

Elements	Description
Space	<p>The lesson was in one of rooms in the teacher’s home. The room was quite small, but it was neat and tidy. There was a window with curtains closed. The room was brightly lit, giving a sense of vitality. An upright piano occupied much of the space, with a small desk on its left-hand side. A bookcase opposite the piano, full of music books and scores, all neatly stacked. In the first of the lesson, the parent sat at the piano. Both the teacher and the student sat on the chairs on the right-hand side of the parent. In the second half of the lesson, the parent and the student swapped places. The observer sat by the bookcase, close to the participants.</p>
Actor	<p>Teacher – Ms Bai-xue Student – Bu-ran Parent – Bu-ran’s Mum</p>
Activity	<p>The lesson started on time.</p> <p>Greeting Ms Bai-xue opened the front door of her studio for Bu-ran and her mum. Then they all took a bow.</p> <p>Bu-ran’s Mum playing the entire Theme with her right hand (Ms Bai-xue had told me before the start of this lesson that Bu-ran’s Mum had learnt the entire piece of music in Lesson 2.)</p> <ol style="list-style-type: none">1. Bu-ran’s Mum put her hand on Middle C.2. She started playing slowly while humming the melody.3. Bu-ran also started humming the melody and said she knew the music too.4. Ms Bai-xue invited the parent to play one more time while correcting a bit of her fingering problems. <p>Bu-ran's try – basic posture and position of the right hand</p> <ol style="list-style-type: none">1. Ms Bai-xue asked Bu-ran if she would like to play the piano. Bu-ran said yes.

	<p>2. Bu-ran’s Mum exchanged her seat with her daughter. 3. Bu-ran quickly put her right hand on the keyboard, but she couldn’t locate Middle C. 4. Ms Bai-xue indicated the position of Middle C and emphasised that there were two black teeth (black notes) next to it. 5. Ms Bai-xue adjusted Bu-ran 's hand posture. 6. Ms Bai-xue moved her fingers one by one and asked Bu-ran to imitate. 7. They repeated the exercise 4 times.</p> <p>Rest for 2 minutes Bu-ran began to lose focus, and Ms Bai-xue decided to pause for a while, letting Bu-ran drink some water. Bu-ran’s Mum gave Bu-ran some water to drink.</p> <p>Bu-ran learning the first phrase of the theme of ‘Twinkle Twinkle Little Star’ 1. Ms Bai-xue played the first phrase of the ‘Twinkle Twinkle Little Star’ (the theme in Suzuki Piano School Volume 1) once to Bu-ran. Bu-ran began to stamp her feet and wave her arms excitedly as if to show that she already knew the music. 2. Ms Bai-xue repeated playing the tune once more and asked Bu-ran to watch her fingers carefully. 3. Next, Ms Bai-xue invited Bu-ran to play together, with Ms Bai-xue playing 2 octaves higher on the same piano. Bu-ran played very slowly. 4. They played the tune together two more times while Ms Bai-xue tried to correct Bu-ran’s fingering problems.</p> <p>Conversation between Ms Bai-xue and Bu-ran’s Mum after lesson Ms Bai-xue asked Bu-ran’s Mum to practise with Bu-ran every day and play the CD as much as possible.</p>
Object	1 upright piano / 1 piano bench 3 chairs / 1 desk
Act	N/A
Event	N/A
Time	N/A
Goal	N/A

Feeling	<p>They were all becoming familiar with the Japanese tradition.</p> <p>While watching her mother played, Bu-ran was waiting for the adults to give her a chance to learn. She showed that she was well-motivated.</p> <p>Although Bu-ran was quite seriously short-sighted, she was still able to see the movements of the teacher's fingers and the piano keys on the keyboard.</p> <p>Ms Bai-xue was wise to stop when she sensed that Bu-ran was losing focus.</p> <p>Bu-ran learnt quite smoothly; she had been listening to the same piece of music for 2 weeks now.</p>
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Diary from Bu-ran's Mum, submitted on 6 November 2019

1 Date and Time: 6th October, 5pm

2 I practised 10 times today. Bu-ran was listening and doing her school homework beside me. I
3 played the recording during dinner time.

4

5 Date and Time: 7th October, 9pm

6 I practised 10 times today. Bu-ran asked me if I was learning to play the piano. I said, 'Yes, I like
7 playing the piano.' I played the recording for 15 minutes before bedtime.

8

9 Date and Time: 8th October, 7pm

10 I practised 10 times today while my husband was feeding Bu-ran. I played the recording as I was
11 driving Bu-ran home.

12

13 Date and Time: 9th October, 8pm

14 Practised 10 times today. I asked Bu-ran to count for me. Recording played before bedtime.

15

16 Date and Time: 10th October, 7pm

17 Practised 10 times today. I tried to find the rest of the notes on the music score. Bu-ran was
18 playing with her toys while listening to me and the recording.

19

20 Date and Time: 11th October, 9pm

21 Practised 10 times today. Bu-ran was playing some random notes on the higher register of the
22 piano as I practised. I felt she wanted to play too.

23

24 Date and Time: 12th October, 7pm

25 I learnt the whole piece of music in today's lesson (Lesson 2). It was funny for me to learn the
26 piano at my age because of my daughter!

27

28 Date and Time: 13th October, 6pm

29 I practised 10 times today and played the recording to Bu-ran. I've also searched for information
30 about the Suzuki method on YouTube and Google. There're lots of interesting videos.

31

32 Date and Time: 14th October, 11pm

33 I didn't practise today because we had a family gathering tonight.

34

35 Date and Time: 15th October, 9pm

36 I practised 10 times today. I played the recording when driving Bu-ran home. She could hum the
37 tune now while listening.

38

39 Date and Time: 16th October, 8pm

40 There was a video on YouTube that showed someone learning the same piece of music as me. We
41 watched the video together after I had finished practising 10 times.

42

43 Date and Time: 18th October, 7pm

44 I practised 10 times while Bu-ran was doing her homework. She noticed that I played a wrong
45 note and reminded me. I played the recording during dinner time.

46

47 Date and Time: 19th October, 6pm

48 Lesson 3. Bu-ran started to learn the same piece of music today. I'm glad she was learning
49 because she felt happy with it.

50

51 Date and Time: 21st October, 7pm

52 Today, I practised 10 times and Bu-ran practised 3 times. I played the recording during dinner
53 time.

54

55 Date and Time: 22nd October, 10pm

56 Today, I practised 10 times and Bu-ran practised twice. I played the recording during dinner time.

57

58 Date and Time: 23rd October, 9pm

59 Today, I practised 5 times and Bu-ran practised 3 times. I played the recording as we were
60 driving home.

61

62 Date and Time: 24th October, 8pm

63 Today, I practised once, and Bu-ran practised 3 times. She wanted to take her turn as soon as I
64 had finished my first practice.

65

66 Date and Time: 25th October, 9pm

67 Bu-ran practised 3 times today. She said she wanted to start as soon as we got home. I played the
68 recording before bedtime.

69

70 Date and Time: 26th October, 5pm

71 Lesson 4 today. Ms Bai-xue mainly adjusted Bu-ran's hand posture today. I would need to be
72 aware of this during her practice.

73

74 Date and Time: 27th October, 3pm

75 I tried to adjust her hand posture today. She practised 3 times, and then we listened to the
76 recording.

77

78 Date and Time: 28th October, 9pm

79 I tried to swap with her every other time so both of us played 3 times today. I adjusted her hand
80 posture when she played. We listened to the recording at dinner time.

81

82 Date and Time: 29th October, 10pm

83 We didn't have time to practise during exam time at school.

84

85 Date and Time: 30th October, 8pm

86 Bu-ran practised once before bedtime after exam revision.

87

88 Date and Time: 31st October, 9pm

89 Both of us played 5 times by swapping alternately. We listened to the recording before bedtime.

90

91 Date and Time: 1st November, 9pm

92 Both of us played 5 times by swapping alternately. We listened to the recording during dinner.

Appendix 10: Group Coconut's Data Samples

Interview 2 Transcript (Ms Chi-yan)

Date: 24th November 2019

Time: 2pm-2:30pm

Venue: Macau Down Syndrome Association

1 1. Which method from the intervention sheets did you choose and why did you choose it?

2 I chose Velásquez's method of learning to play on the black keys and reading the score using
3 numbers. I thought that by concentrating on the fixed position of a few black keys, it might be
4 easier to give Chao-chao clearer instructions. Also, simple verbal instructions might be easier for
5 him to understand. I decided to have the thumb on F#. This would be easier for Chao-chao when
6 playing the three notes needed in 'Mary Had a Little Lamb' and 'Hide and Seek', using only the
7 thumb, and the index and middle fingers. Besides, having the thumb on F# allowed the fingerings
8 to synchronise with the sol-fa syllables – number 1 referred to 'do', number 2 to 're' and number
9 3 to 'mi'.

10

11 2. Did you manage to apply the chosen method to all 5 lessons? Please describe how you applied
12 this method.

13 Yes. I applied the method to all 5 lessons. I first taught Chao-chao the positioning of the fingers
14 on the black keys. Then I asked him to move the fingers according to the numbers on the score. I
15 pointed at the score when he played. When he became more familiar with the music, I asked him
16 to play without my pointing.

17

18 3. With using this method, how have the last 5 lessons been compared to the approach you used
19 before?

20 We were able to play something on the piano. In the past, he couldn't play any music because
21 score reading requires too much patience from him. Now he could at least play a tune from the
22 piano before running away.

23

24 4. What has the student's progress been like in the past 5 weeks? Do you notice any other major
25 differences, e.g., the student's conduct, physical or cognitive condition, self-confidence etc.?

26 He liked the piano lessons more and he cooperated with me better.

27

28 5. How often do you communicate with the parent now? Do you notice any differences in
29 parent's involvement?

30 His parent was very involved even before the last 5 lessons — but Chao-chao’s Mum looked
31 more relieved during the recent lessons.

32

33 6. Having taught this student for a length of time now, do you feel s/he, and your other students
34 with DS (if any), has a musical aptitude? How sensitive are they with pitch, rhythm etc.?

35 I think Chao-chao has a good memory, which is an advantage in learning musical instruments.

36 You know, he’s been inattentive, but still he managed to learn two pieces in 5 lessons.

37

38 7. What do you think of the support Macao has for children with special needs, such as DS in
39 terms of education and/or music?

40 I think the Macao Government should give more support to the parents. For example, I do think
41 Chao-chao should have more training in speech expression and therapy for psychological
42 development. I know that such training and therapies in Macao are quite expensive, which a
43 normal family in Macao may not be able to afford in a long term.

44

45 8. Is there anything else you would like to add in relation to your student / music / piano lessons?

46 I want to ask for advice actually — am I right in thinking that Chao-chao would also need to learn
47 the white keys after he’s been playing these black key pieces for a while? Since I don’t think he
48 could just play the black keys forever and learn the music with only 5 notes (looking at me
49 quizzically).

50 (My answer is yes. I’m going to offer her two more pieces using the black keys and then I would
51 encourage her to move onto the ‘alpha notation’ from the Melody organisation, which is another
52 notation with numbers so that her student can start to learn to play on the white keys).

53

54 There may be further questions once I have read through the diary that the teacher has prepared
55 over the 5-week research period.

56 (No further questions)

Interview 2 Transcript (Chao-chao)

Date: 24th November 2019

Time: 3pm-3:30pm

Venue: Macau Down Syndrome Association

- 1 1. What do you think about the numbers that Ms Chi-yan used in the last 5 lessons?
2 I play piano — those black ones (smiling confidently as he answers)
3
4 2. What did you do in those 5 lessons?
5 (Humming the tune of ‘Mary Had a Little Lamb’ while running around)
6
7 3. Were the last 5 lessons the same as the previous lessons you had?
8 No — I play (pointing to the piano)
9
10 4. Were there any differences?
11 I play piano (humming the tunes)
12 (His mother reminds him that he played card games before) I play cards
13
14 5. Do you tell your mummy/daddy about these lessons?
15 Yes (answering quickly and looking very happy)
16
17 6. How much do you practise now at home?
18 Yes — I play piano at home
19
20 7. Do you still want to continue to learn to play the piano? Why/why not?
21 Yes (his facial expression is one of excitement)
22
23 8. Is there anything else that you want to tell me about your piano lessons?
24 I like it (runs away)
25
26 Remark:
27 — Significant pauses

Interview 1 Transcript (Chao-chao's Mum)

Date: 15th September 2019

Time: 2:30pm-3pm

Venue: Macau Down Syndrome Association

1 1. How do you feel about having a child with DS?

2 Having a child with DS is quite painful at the start. But my son has become an important bond of
3 the family now. Through raising Chao-chao, the relationship between family members becomes
4 closer. It's him who makes us understand the importance of love. My other son is also learning
5 how to take care of Chao-chao. Their brotherly love touches me a lot.

6

7 2. Can you tell me about his/her physical and intellectual conditions?

8 He has mild to moderate intellectual disabilities. He's especially weak at speaking and staying
9 focused when learning. But his hearing and vision are okay. He's quite healthy except a bit
10 short.

11

12 3. Does s/he attend a mainstream school? What year is s/he in?

13 He's studying in a mainstream school with inclusive education. He's in Primary 1.

14

15 4. How is his/her work at school?

16 Honestly, he's among the slowest in his class since he's always inattentive during the lessons.

17

18 5. Is there any special support from school for your child?

19 Yes. The teachers would sometimes give him one-to-one tutorials and give me information about
20 the contents covered in each subject so I could revise with him.

21

22 6. Does s/he have music lessons in school? If yes, do you know what s/he does in these lessons?

23 Does s/he have any chances of playing an instrument?

24 Yes. He learns singing in the music lessons in school. But there's no instrumental class although
25 the teacher would let him touch the piano.

26

27 7. Do you think your child enjoys these music classes?

28 Yes. He likes them. I can tell that he looks happier, humming something after school if there's
29 music lesson that day.

30

31 8. What are his/her hobbies?

32 I would take him to the park playing in our spare time. He also starts making piano playing a
33 hobby.

34

35 9. When and why did you decide to let him/her learn to play the piano in his/her spare time?

36 Firstly, he likes music. Secondly, he's very inattentive. I hoped he would become more attentive
37 after learning the piano. (Laughs)

38

39 10. How did you go about finding a piano teacher to teach your child? Was it easily sorted out or
40 did you encounter difficulties?

41 A fellow parent told me the news about Macau Down Syndrome Association giving piano classes
42 to children with DS. So, we decided to apply together. Learning fees are a concern for us.

43 Having a child with DS makes me a full-time mum now. I need more money to pay for Chao-
44 chao's language therapy. It's so good that the association is giving lessons with relatively low
45 fees for children with DS.

46

47 11. How is your relationship with the piano teacher?

48 Since I usually join in the piano lessons, we have a close relationship.

49

50 12. Have you noticed any changes in your child since taking up the piano? Changes in
51 temperament / physical and cognitive conditions / self-confidence?

52 I feel that Chao-chao is paying a little bit more attention now. He can sit longer listening than
53 before.

54

55 13. Do you think your child enjoys the piano lessons? Why/why not?

56 He doesn't enjoy them very much, especially when we ask him to sit properly. But he likes Ms
57 Chi-yan because she would give him a sweet after class. He also likes the card games.

58

59 14. How much does s/he practise at home, and how are you involved in this?

60 I usually require him to sit for 5 minutes every day, showing him the cards and asking him to play
61 some random notes on the piano.

62

63 Reflections:

64 Parent is close to the teacher, and to the child's learning

65 Patient

Date: 3rd November 2019

Time: 10am-10:30am

Number of Individuals: 3

Venue: Macau Down Syndrome Association

Theme: Velásquez’s Research Findings as the choice of pedagogical intervention
(Iconic/Symbolic representation with verbal instructions)

Elements	Description
Space	<p>The lesson took place at the Macau DS Association in an industrial building. The place was spacious and rectangular. There were filled cupboards and glass bookcases along the lengths of the room. Coloured pictures painted by members with DS hung on the walls. There was a long table in the centre of the studio. An upright piano stood against the wall on the same side as the entrance. At the opposite end, there were desks with computers on top. The room looked cluttered but had a feeling of vibrancy. The student sat in front of the piano. The teacher sat on the chair on the right-hand side of the student, while the parent sat on the chair on the left-hand side. The observer sat behind them at the opposite end of the long table.</p>
Actor	<p>Teacher – Ms Chi-yan Student – Chao-chao Parent – Chao-chao’s Mum</p>
Activity	<p>The lesson started on time.</p> <p>Greeting</p> <ol style="list-style-type: none"> 1. Chao-chao and his mum came into the association and said ‘good morning’ to everyone. 2. Ms Chi-yan took out a bar of chocolate and told Chao-chao that he would have it if he behaved in the lesson. 3. Chao-chao looked happy. <p>Revising ‘Hide and Seek’</p> <ol style="list-style-type: none"> 1. Ms Chi-yan told me before the lesson that they had started learning the new piece ‘Hide and Seek’ in Lesson 4 because she was pleased with Chao-chao’s performance in Lesson 3. 2. Chao-chao’s Mum took out the sheet of music score and put it on the music stand.

	<p>3. Ms Chi-yan asked Chao-chao to look at the music score and played.</p> <p>4. Chao-chao could find the position of F# quickly by himself.</p> <p>5. Slowly, with Ms Chi-yan pointing at the music score and guiding with verbal cues, Chao-chao played the music.</p> <p>6. Chao-chao played the song two more times under the guidance of Ms Chi-yan.</p> <p>7. He ran away and looked at the chocolate bar on the desk nearby.</p> <p>Playing ‘Hide and Seek’ ALONE</p> <p>1. Ms Chi-yan asked Chao-chao if he could play the music without her pointing at the score. If he could manage that successfully, he would have the chocolate immediately.</p> <p>2. Chao-chao tried. Whenever he hesitated and stopped for more than 2 seconds, Ms Chi-yan reminded him about the numbers.</p> <p>3. Chao-chao did that quite successfully with only a few wrong notes.</p> <p>4. They repeated the exercise once more, and Ms Chi-yan gave Chao-chao the chocolate.</p> <p>Conversation between Ms Chi-yan and Chao-chao’s Mum after lesson</p> <p>Ms Chi-yan asked Chao-chao’s Mum to practise with Chao-chao every day, so he could remember the method. Chao-chao’s Mum came to me and thanked me for having introduced the method to them. Both the teacher and the parent said that Chao-chao showed improvements in responsiveness and concentration in the piano lessons.</p>
Object	1 upright piano / 1 piano bench / 3 chairs 1 long table / 1 piece of music score / 1 bar of chocolate
Act	Chao-chao ran away from the piano just once.
Event	N/A
Time	N/A
Goal	N/A
Feeling	<p>The teaching and learning process were a lot smoother than those in Lessons 1 and 3.</p> <p>Teacher’s reminders and instructions – direct, simple, clear.</p>

Diary from Chao-chao's Mum, submitted on 6 November 2019

1 Date and Time: 6th October 2019, 8pm

2 Lesson 1. Chao-chao learnt a new piece today.

3

4 Date and Time: 7th October 2019, 7pm

5 I practised with him for 5 minutes before he ran away.

6

7 Date and Time: 8th October 2019, 6pm

8 Practised for 10 minutes.

9

10 Date and Time: 9th October 2019, 10pm

11 Practised for 5 minutes.

12

13 Date and Time: 10th October 2019, 9pm

14 Practised for 5 minutes. I think he needs some time to relate the numbers to his fingering.

15

16 Date and Time: 11th October 2019, 8pm

17 Practised for 5 minutes.

18

19 Date and Time: 12th October 2019, 6pm

20 Practised for 10 minutes.

21

22 Date and Time: 13th October 2019, 7pm

23 Lesson 2. He was a little more attentive today.

24

25 Date and Time: 14th October 2019, 8pm

26 Practised for 5 minutes.

27

28 Date and Time: 15th October 2019, 10pm

29 Practised for 5 minutes.

30

31 Date and Time: 16th October 2019, 8pm

32 Practised for 5 minutes.

33

34 Date and Time: 17th October 2019, 7pm

35 Practised for 15 minutes. He told me that he likes playing the piano.

36

37 Date and Time: 18th October 2019, 10pm

38 Practised for 5 minutes.

39

40 Date and Time: 19th October 2019, 11pm

41 No practice today because my other son is sick.

42

43 Date and Time: 20th October 2019, 8pm

44 Lesson 3. He enjoyed the lesson more than before.

45

46 Date and Time: 21st October 2019, 7pm

47 Practised for 5 minutes.

48

49 Date and Time: 22nd October 2019, 9pm

50 Practised for 5 minutes.

51

52 Date and Time: 23rd October 2019, 8pm

53 Practised for 10 minutes.

54

55 Date and Time: 24th October 2019, 6pm

56 Practised for 5 minutes. I heard him singing along while he was playing. He seemed to be
57 enjoying it.

58

59 Date and Time: 25th October 2019, 9pm

60 Practised for 5 minutes.

61

62 Date and Time: 26th October 2019, 8pm

63 Practised for 5 minutes.

64

65 Date and Time: 27th October 2019, 8pm

66 Lesson 4. He could play 'Mary Had a Little Lamb' alone, and he learnt a new piece today.

67

68 Date and Time: 28th October 2019, 10pm

69 Practised for 5 minutes. He just practised the old piece.

70

71 Date and Time: 29th October 2019, 8pm

72 Practised for 5 minutes. I explained and persuaded him to practise the new piece.

73

74 Date and Time: 30th October 2019, 11pm

75 Practised for 5 minutes. He played both pieces once.

76

77 Date and Time: 31st October 2019, 8pm

78 Practised for 10 minutes. He played the new piece once and the old piece twice.

79

80 Date and Time: 1st November 2019, 6pm

81 Practised for 5 minutes. He played both pieces once.

82

83 Date and Time: 2nd November 2019, 5pm

84 Practised for 5 minutes. He could play the old piece from memory. He practised the new piece
85 once.

86

87 Date and Time: 3rd November 2019, 9pm

88 Lesson 5. He's more attentive in class now.

Appendix 11: Group Durian's Data Samples

Interview 1 Transcript (Ms Da-fan)

Date: 15th September 2019

Time: 5pm-5:30pm

Venue: Macau Down Syndrome Association

1 Guiding questions relating to Teacher's education and experience background:

2 1. What is your current profession?

3 I'm a full-time mum and a part-time piano teacher.

4

5 2. What are your qualifications? When? Where?

6 I studied my bachelor's degree at University D*, majored in Music Education. I graduated in
7 2014.

8

9 3. Have you been trained professionally to teach students with SEND?

10 No. There's a lack of training for music teachers to teach music to students with SEND in
11 Macao.

12

13 4. Have you ever taught or are you teaching in a mainstream school? If yes, how many years
14 have you taught or been teaching in the mainstream school, what grade(s) and what subject(s)?

15 No. I became a private piano teacher after I graduated.

16

17 5. Were there/are there any students with SEND within your class(es)? If yes, were there/are
18 there any with DS?

19 N/A

20

21 6. What has been your experience of teaching students with SEND/DS?

22 Dan-yao has a mild hearing problem. I need to speak louder and keep repeating the same
23 sentence several times, just to make sure that he understands it.

24

25 7. Did you make any modifications or develop any teaching strategies to teach the students with
26 SEND/DS?

27 Yes. I would speak louder and play the piano louder and slower.

28

29 8. Was/is there any support from the school for the students with SEND?

30 N/A

31

32 9. How many years have you been teaching piano?

33 I've been teaching piano for 8 years.

34

35 Guiding questions for the current project:

36 10. How did you meet this piano student with DS and how long have you been teaching him/her?

37 I've been teaching him for 2 months. I was invited by a friend to join the piano course organised
38 by the Macau Down Syndrome Association around 3 months ago. (I know that the friend Ms Da-
39 fan refers to is Ms Bai-xue).

40

41 11. In the beginning, did his/her parent talk openly to you about their child's condition?

42 Not really — in the first 2 lessons, I didn't know Dan-yao couldn't hear properly. I just sensed
43 that he wasn't responding most of the time. It wasn't until I asked that his parent admitted that
44 his hearing is mildly impaired. Parents can be a large obstacle. I just hope the first 2 lessons
45 didn't scare Dan-yao.

46

47 12. What are the physical and intellectual conditions of this child? Are you aware or told of any
48 dual diagnosis, such as autism or ADHD?

49 Since he doesn't hear as well as other students, he's relatively quiet during the lessons. But he
50 told me that he liked the sound of the piano. He would keep smiling when he was making sound
51 from the instrument. He's a bit slow and has mild intellectual disabilities. He doesn't appear to
52 have any dual diagnosis.

53

54 13. In your opinion, have these specific conditions affected the child's learning of the piano in any
55 way?

56 Yes. The learning progress was slow due to his intellectual and physical disabilities. Dan-yao's
57 weak hearing condition meant that he was unable to identify the differences in pitch. He felt
58 frustrated when he had to match the notes on the score with the correct piano keys. I'm also a bit
59 confused whether he could understand me.

60

61 14. How did you go about teaching this student? Any specific method? Do you teach him/her the
62 same way as you teach your other students with DS (if any)?

63 Apart from the previous answer (she gave the answer in Question 7), I mainly teach Dan-yao the
64 same way as my other students with or without DS. I have one more student with DS.

65

66 15. Please describe his/her progress from the beginning.

67 He enjoyed the lessons. He liked the sound, but he couldn't remember the tunes. I think it's
68 because he has hearing impairment. His progress was very slow, and every lesson appeared the
69 same to him.

70

71 16. How often do you get in touch with his/her parent to discuss progress or propose any activities
72 for the parent to join in?

73 Dan-yao's Mum seldom came to the classes. I saw her once, and that was when I was informed
74 about Dan-yao's hearing impairment. Usually, it was their domestic helper who brought Dan-yao
75 to the lessons.

76

77 17. Are there any major differences in the teaching and learning between a student with DS and a
78 typically developing student?

79 The main difference is progress. Students with DS learn really slowly. Yet, I like teaching them
80 because they enjoy the lessons, and they love music. You know, sometimes the typically
81 developing students in Macao are just forced by their parents to learn the piano.

82

83 Remark:

84 * Pseudonym is used to protect Ms Da-fan's personal information

Interview 2 Transcript (Dan-yao)

Date: 24th November 2019

Time: 6pm-6:30pm

Venue: Macau Down Syndrome Association

1 1. What do you think of the colourful keys and music scores that Ms Da-fan used in the last 5
2 lessons?

3 I — like — my piano colourful — we stick stickers — I want more stickers (he laughs heartily)

4

5 2. What did you do in those 5 lessons?

6 I play piano — like this (he swings his head and pretends to be a pianist with many facial
7 expressions)

8

9 3. Were the last 5 lessons the same as the previous lessons you had?

10 I — have chocolate — after lessons (laughs)

11

12 4. Were there any differences?

13 Now happier (he keeps smiling)

14

15 5. Do you tell your mummy/daddy about these lessons?

16 (He shakes his head)

17

18 6. How much do you practise now at home?

19 Play piano at home

20

21 7. Do you still want to continue to learn to play the piano? Why/why not?

22 Yes — I like it (he gives me a big smile)

23

24 8. Is there anything else that you want to tell me about your piano lessons?

25 I tell Ka-hung* I play piano

26 (Dan-yao's Mum tells me that Ka-hung* is his best friend at school)

27

28 Reflection:

29 Dan-yao's speech is clearer and more fluent

30

31 Remarks:

32 * Pseudonym is used to protect the privacy of Dan-yao's friend

33 — Significant Pauses

Interview 1 Transcript (Dan-yao's Mum)

Date: 15th September 2019

Time: 5:30pm-6pm

Venue: Macau Down Syndrome Association

1 1. How do you feel about having a child with DS?

2 Being parents of a child with DS, we must be really tough and strong because we face a lot of
3 difficulties not only with their health problems, but also with their educational and cognitive
4 problems.

5

6 2. Can you tell me about his/her physical and intellectual conditions?

7 He has moderate intellectual disabilities — and mild hearing problem — just very mild. I treat
8 him as normal at home. Dan-yao has 2 younger siblings and I treat all of them the same way.

9

10 3. Does s/he attend a mainstream school? What year is s/he in?

11 He's studying in a mainstream school with inclusive education. But he's in their small class
12 special education — he's now in Primary 3. Actually, he was in the inclusive class during
13 Primary 1 — he's just a bit weak at hearing.

14

15 4. How is his/her work at school?

16 The progress in his class is slower than that in the inclusive class. So, schoolwork's not a
17 problem for him now.

18

19 5. Is there any special support from school for your child?

20 Yes. There're social workers. As I know, the teachers at the school would have some training
21 and attend seminars about SEND every year.

22

23 6. Does s/he have music lessons in school? If yes, do you know what s/he does in these lessons?

24 Does s/he have any chances of playing an instrument?

25 Yes. I think the music classes in the school mainly teach singing. They don't teach musical
26 instruments.

27

28 7. Do you think your child enjoys these music classes?

29 Yes. He likes singing and listening to music.

30

31 8. What are his/her hobbies?

32 The family usually goes to the park during the weekends. I hope playing the piano would become
33 his hobby.

34

35 9. When and why did you decide to let him/her learn to play the piano in his/her spare time?

36 I was hoping that piano learning would improve his hearing. I believe he still has the right to
37 learn the piano, even if he isn't very clever nor hears very well. That's a kind of human rights.

38

39 10. How did you go about finding a piano teacher to teach your child? Was it easily sorted out or
40 did you encounter difficulties?

41 He's also a member of the African-drum class in the Macau Down Syndrome Association. So,
42 when there was the announcement that there were also going to be piano classes, I decided to let
43 him try.

44 I didn't encounter any difficulties in finding a piano teacher in this case, but I've heard from
45 parents in the association that they usually got rejected by instrumental music teachers.

46

47 11. How is your relationship with the piano teacher?

48 I seldom go to the piano lessons because I still have two other children to look after. I usually
49 send my helper to the association.

50

51 12. Have you noticed any changes in your child since taking up the piano? Changes in
52 temperament / physical and cognitive conditions / self-confidence?

53 He likes the piano sound. He sat in front of the electric piano at home and played for 15 minutes
54 every day. Just random notes of course, but he was enjoying and devoted to it.

55

56 13. Do you think your child enjoys the piano lessons? Why/why not?

57 Yes. I guess so.

58

59 14. How much does s/he practise at home, and how are you involved in this?

60 As I said, around 15 minutes a day. I would listen to him when he played, although I wouldn't be
61 sitting next to him.

62

63 Reflections:

64 Not too willing to admit Dan-yao's impairments

65 Busy with two other children

Date: 6th October 2019

Time: 2pm-2:30pm

Number of Individuals: 3

Venue: Macau Down Syndrome Association

Theme: Cantan’s Colourful Keys, ‘Alpha Notation’ and improvisation from Melody as choices of pedagogical interventions

Elements	Description
Space	<p>The lesson took place at the Macau DS Association in an industrial building. The place was spacious and rectangular. There were filled cupboards and glass bookcases along the lengths of the room. Coloured pictures painted by members with DS hung on the walls. There was a long table in the centre of the studio. An upright piano stood against the wall on the same side as the entrance. At the opposite end, there were desks with computers on top. The room looked cluttered but had a feeling of vibrancy. The student sat in front of the piano. The teacher sat on the chair on the right-hand side of the student, while the parent sat on the chair on the left-hand side. The observer sat behind them at the opposite end of the long table.</p>
Actor	<p>Teacher – Ms Da-fan Student – Dan-yao Parent – Dan-yao’s Mum</p>
Activity	<p>The lesson started 5 minutes late.</p> <p>Greeting loudly Dan-yao came into the Macau Down Syndrome Association with his mum. He said ‘Hello’ loudly and looked excited. Ms Da-fan and I greeted them.</p> <p>Explaining the colours on the keyboard 1. Dan-yao discovered the coloured stickers on each of the notes on the keyboard when he came to the piano. He touched and checked each sticker carefully, smiling at the same time. He would call out the colours whenever he touched on the key with the colour that he recognised, such as ‘red’ or ‘yellow’. However, he didn’t know the names of some of the other colours such as ‘purple’.</p>

2. Ms Da-fan told Dan-yao that every note had its own special colour, and she explained these to him one by one.

(Ms Da-fan created the colour scheme following Alexander Scriabin's system of colours)

C	red (intense)
C#	violet or purple
D	yellow
D#	flesh (glint of steel)
E	sky blue (moonshine or frost)
F	deep red
F#	bright blue or violet
G	orange
G#	violet or lilac
A	green
A#	rose or steel
B	blue or pearly blue

3. Dan-yao said he liked the note D because he liked yellow.

Encouraging Dan-yao to improvise with the colourful keyboard

1. Ms Da-fan asked Dan-yao if he could compose something from the colours he liked.

2. Dan-yao improvised some lively rhythms with the note D, playing loudly.

3. He laughed with satisfaction.

Explaining the 'alpha notation'

1. Ms Da-fan gave Dan-yao a colourful sheet of paper. Printed on it was the music score for 'Mary Had a Little Lamb', using an 'alpha notation'.

2. Dan-yao said that the paper was colourful.

3. Ms Da-fan explained that the colours on the keyboard were the same as the colours on the music score.

New piece of music – 'Mary Had a Little Lamb'

1. Ms Da-fan demonstrated how to play the music with her right hand while pointing at the coloured numbers with her left. She was playing the music loudly so Dan-yao would be able to hear clearly.

2. Ms Da-fan guided Dan-yao's right hand onto the piano, with his thumb on Middle C.

3. Slowly following the colours on the score and with Ms Da-fan pointing at every note on the paper, Dan-yao was able to play the first few notes on the keyboard.

	<p>Conversation between Ms Da-fan and Dan-yao's Mum after lesson</p> <p>Ms Da-fan asked Dan-yao's Mum to practise with Dan-yao every day, so he could be more familiar with the colours on the piano. Ms Da-fan also prepared a set of coloured stickers for Dan-yao's Mum to stick on the piano keys at home. Ms Da-fan also encouraged Dan-yao to improvise more with the colourful keyboard.</p>
Object	<p>1 upright piano / 1 piano bench / 3 chairs 1 long table / 1 piece of music score / 2 sets of coloured stickers</p>
Act	<p>Ms Da-fan taught Dan-yao's Mum where to put the coloured stickers on Dan-yao's electric piano at home.</p>
Event	N/A
Time	N/A
Goal	N/A
Feeling	<p>I learned from those first Interviews that Dan-yao has a hearing problem. Consequently, he would need to speak louder.</p> <p>The way that Dan-yao checked the colours indicated that he was intrigued by them. Colours really inspired and stimulated his imagination.</p> <p>Dan-yao wasn't familiar with the colours yet, but he found the colouring of the notes interesting and he was paying attention to the lesson.</p>

Diary from Ms Da-fan, submitted on 6 November 2019

1 Date and Time: 3rd October 2019

2 Preparation:

3 Ian and I bought two sets of colourful stickers together today. We decided to follow Scriabin's
4 way of assigning colours to piano keys.

5

6 The reason why I insisted on adding Cantan's idea of colourful keys is because Dan-yao loves
7 improvising on the piano. I hope a colourful keyboard would inspire his creativity further. Ian
8 told me that there is no one-size-fits-all model, so as a teacher, I have the responsibility to decide
9 which method(s) would suit my student the best.

10

11 The score of 'Mary Had a Little Lamb' is a mixture of Cantan's idea of colourful keys and the
12 'alpha notation' from the Melody Organisation. I wanted the colour of each note on the score to
13 be the same as its corresponding key on the piano. (In Melody's sample, the right hand is all
14 green and the left hand is all red). After discussing with Ian, she made me this unique score
15 comprising both concepts.

16

17 Date and Time: 6th October 2019

18 Lesson 1. The colourful keys attracted Dan-yao a lot. He improvised, stimulated by the colours.
19 He also found his favourite note D. I taught a bit of 'Mary Had a Little Lamb' today using the
20 'alpha notation' score. Dan-yao looked happier than previous lessons. I felt good for being well-
21 prepared and for being able to bring joy to my student, making him so happy.

22

23 Date and Time: 13th October 2019

24 Lesson 2. I liked the idea of having the parent coming into the lesson because if they knew more
25 about the content covered in the lesson, they could help with the student's practice. The lesson
26 today was okay although Dan-yao was reading the notes very slowly. He needed time to match
27 the colours. Whenever he played a note, he would play it loudly so he could hear it.

28

29 Date and Time: 20th October 2019

30 Lesson 3. I brought some chocolate with me to reward Dan-yao with. Dan-yao's Mum showed
31 me a video of Dan-yao improvising on his piano at home. It was a nice one as Dan-yao was
32 playing happily, and he kept smiling at the camera and his mother.

33 Dan-yao was able to play 'Mary Had a Little Lamb' more smoothly today. I could tell, even
34 before his parent told me, that he must have practised every day.

35

36 Date and Time: 27th October 2019

37 Lesson 4. I brought a sweet for Dan-yao. I decided to start a new piece with Dan-yao along with
38 the revision of the old one. With 'Mary Had a Little Lamb', he played smoothly with me pointing
39 at the notes on the score. With 'Hide and Seek' (the new piece), we just started a few notes. He
40 told me he preferred chocolate to sweet!

41

42 Date and Time: 3rd November 2019

43 Lesson 5. Today, I brought a bar of chocolate and I intended to use it to encourage Dan-yao to
44 play 'Mary Had a Little Lamb' from memory. I'm pleased that he got the first half correct. I
45 know Dan-yao would prefer improvising rather than memorising the notes and the fingerings on
46 the piano. But I hope he could get a balance between them. We also revised 'Hide and Seek'.
47 His reaction from score reading to playing on the keyboard was faster than before.