

An Exploration of the Impact of Formal and Non-Formal Teaching and Learning Approaches on Piano Students' Musical Knowledge, Skills, Engagement and Motivation: A Longitudinal Action Research Study

Thesis submitted in fulfilment of the degree of
Doctor of Philosophy
to
The Department of Arts Education and Physical Education
by
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June 2022

Abstract

New Pedagogical Approaches in the One-to-One Piano Lesson: A Longitudinal Action Research Study on the Impact of Formal and Non-Formal Teaching and Learning on Students' Musical Knowledge, Skills, Engagement and Motivation

Traditional approaches to piano pedagogy tend to be dominated by Western Classical Music practices where musical literacy and technical skills take precedence over aural skills. This can lead to fragmented musical understanding and a lack of motivation and independence on the part of the learner. This research sought to investigate alternative pedagogical approaches in the one-to-one piano lesson, vis-à-vis the inclusion of formal and non-formal teaching and learning practices, and examine the potential impact on students' musical knowledge, skills, engagement, and motivation. A qualitative approach underpinned this study, employing action research methodology and semi-structured interviews with six piano students aged between 8 and 18 years old, over a three-year period, in addition to semi-structured interviews with parents. Guided by numerous significant theories, primarily within the fields of education and motivation psychology, namely Deci and Ryan's self-determination theory and Bruner's Scaffolding of Learning Theory and Discovery Learning, Green's (2014) Hear, Listen, Play! Strategy and Harris' (2015) Simultaneous Learning approach were adapted by the researcher for this study. Each strategy was analysed individually and comparatively with the traditional, formal approaches predominantly employed to teach piano.

Three cycles of action research were conducted with the six participants over three years, using a combination of non-formal and formal pedagogical approaches, which evolved throughout the study. The implementation and analysis of these approaches was an iterative process whereby the approaches and any changes in students' musical development and learning experience were documented through audio and video files, interviews, a teacher reflective journal; thus, the findings from each cycle informed the next. The development and creation of multimedia resources by the researcher complemented the pedagogical approaches that were implemented over the three-year period.

Key findings from the three cycles of action research and student and parent interviews are summarised thus: (1) formal and non-formal approaches can complement one another and enhance student's musical development, skill attainment, and independence; (2) formal and non-formal approaches can develop student motivation, engagement and autonomy; and (3) when implemented in a structured, scaffolded way, these innovative approaches can create an optimal learning environment for both piano students and teachers. The thesis offers an original contribution to the field by providing a sound evidence-base for the following recommendations for practice: the inclusion of non-formal pedagogical approaches in the one-to-one piano lesson, and structured, autonomy- and competence-supportive teaching practices that can foster independence and well-internalised motivation to learn. Moreover, the thesis demonstrates that a combination of pedagogical approaches can enable lifelong, independent learning and engagement in music-making.

Declaration of Originality

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Declaration: I declare that the work in this thesis was carried out in accordance with the Regulations of Mary Immaculate College, University of Limerick. The work is original, except, where indicated by reference in the text, and no part of the dissertation has been submitted for any other academic award. All sources that have been consulted have been identified and acknowledged in the appropriate way. Any views expressed in the dissertation are those of the author.

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Acknowledgements

First, I would like to express my deepest appreciation to my supervisor Dr Gwen Moore for her guidance, feedback, and unfailing support throughout the research process. Her expert insight and knowledge provided stimulating conversations and helped maintain my enthusiasm and love for my topic from beginning to end. I would also like to thank Mary Immaculate College (MIC) and the staff of the MIC RGSO for funding assistance and the provision of excellent research training, seminars and workshops that proved invaluable on my doctoral journey.

I wish to give a very special thanks to those who participated in this study, particularly the six student participants who generously gave me permission to implement alternative pedagogical approaches in their lessons over three years and agreed to be interviewed numerous times. Without them this research would not have been possible. I am indebted to their generosity of time and opinions on their learning experiences, and for putting their trust in me with their piano education for so many years. In addition, I thank the parents who agreed for their children to be part of this research and for being interviewed too, and the two directors of the music school who granted me permission to conduct my research with these students in their school, and for being so supportive of my research.

Finally, I would like to thank my family and friends for their infinite support. Particularly my husband Paul, for his help, and endless patience and understanding throughout my constant educational pursuits since we first met. And to my parents; my mother Carmel whose continuous support kept me going through all the ups and downs; and my father Richie for being my sounding board and for the many lengthy philosophical discussions we had as my research progressed.

Table of Contents

Abstract	i
Declaration of Originality	ii
Acknowledgements	iii
Table of Contents	iv
List of Tables	xi
List of Figures	xii
List of Abbreviations	xiv
Use and Application of Terms	xv
Chapter 1 - Introduction	1
Introduction	1
Background and Rationale	1
Issues in Piano Education	1
High Student Dropout Rates	2
The Dichotomy of Formal and Informal Learning Practices	3
Impact of Graded Examinations on Teaching Practices	4
Personal and Professional Rationale	6
A Lack of Longitudinal Research	8
Research Problem	9
Situating the Research	10
Dominant Ideologies and Western Classical Music Practices	10
The Role of the Teacher and Pedagogical Approaches	12
Teaching Philosophy	13
Aims and Objectives	15
Research Question(s)	15
Methodology & Research Design	16
Originality and Contribution to Knowledge	19
Thesis Overview	20
Chapter 2 - Literature	22
Introduction	22
Attrition/Dropping out	22
What Defines a ‘Dropout’?	23
Differences Between Those Who Stop and Those Who Continue	24
Ceasing Independent Learning and Playing	24

Motivation for Learning.....	25
Motivation - The Role of the Teacher.....	25
Increasing Motivation Through Engagement and Meeting Students’ ‘Basic Psychological Needs’	26
The Student-Teacher-Parent Relationship	27
Lifelong Learning	29
The Role of Formal Education.....	30
What Can Teachers Do to Promote Lifelong Learning?.....	31
Instrumental Teaching and Learning Strategies.....	32
Creating Autonomous and Independent Learners.....	34
The Importance of Structure and Strategy in Educational Settings	35
Practice and Self-Regulation Strategies.....	37
Formal Vs Informal Teaching and Learning Practices	43
Creating the ‘Well-Rounded’ Musician.....	45
Differences in Teaching and Learning Practices	47
The Role of Technology in Informal Learning.....	49
Lucy Green's HeLP (Hear, Listen, Play) Strategy and How It Developed.....	50
Simultaneous Learning	54
Swanwick & Tillman’s Theory of Musical Development.....	55
National and International Perspectives on Piano Pedagogy.....	58
The Irish and European Context: Insights into Irish Piano Pedagogical Practices .	58
The US Context.....	62
Resources for Teacher Training and CPD	64
The Master-Apprentice Model.....	65
Learning How to Teach through Trial and Error	67
Pedagogical Course Content	67
The Potential and Limitations of Summative Assessment.....	68
The Role of Instrumental Music Examination Boards.....	70
Possible Solutions to Assessment	71
Conclusion	72
Chapter 3 - Theoretical Framework.....	77
Introduction.....	77
Bridging Philosophy, Theory and Practice	77
Philosophy.....	77

Self-Determination Theory	78
Cognitive Evaluation Theory (CET).....	80
Organismic Integration Theory (OIT).....	84
Self-Determination Theory (SDT) – Application to Piano Pedagogy	90
Bruner’s Scaffolding of Learning and Discovery Learning Theories.....	90
Scaffolding in Music Education – Application to Piano Pedagogy.....	92
Discovery Learning in Music Education – Application to Piano Pedagogy.....	92
Summary	93
Chapter 4 - Methodology and Research Design	95
Introduction.....	95
Research Questions	96
Research Design.....	97
Action Research	97
Sampling and Reflexivity.....	101
Implementation of Action Research	102
Covid-19 Implications.....	109
Student Interviews.....	111
Parent interviews.....	111
Data Analysis	112
Framework for Analysis.....	112
Interview Data Analysis.....	112
Reflexivity.....	115
Ethical Considerations	116
Assent and Consent.....	117
Concluding Thoughts.....	117
Chapter 5 - Case 1 – Ann – Formal and Non-formal Learning	119
Introduction.....	119
Non-formal Learning Experiences.....	121
Cycle 1 – <i>Étude</i>	122
Cycle 2 – <i>Waltz</i>	124
Formal Learning Experiences	126
Cycle 1 - <i>Étude</i>	127
Cycle 2 - <i>Fantasy</i>	129
No more HeLP – Becoming an Independent Learner.....	131

Enhanced Formal Skills through Non-Formal Approaches.....	137
Conclusion	139
Chapter 6 - Case 2 – David – Creating an Optimal Learning Environment for Musical Development & Engagement.....	142
Introduction.....	142
Cycle 1 – 2018	144
<i>Allegro</i>	144
Cycle 2 – 2019	147
<i>Lullaby</i>	147
<i>Study in C</i>	150
Cycle 3 – 2020	153
<i>The Entertainer</i>	154
<i>Nuvole Bianche</i>	156
Discussion	159
Student Development.....	159
Challenges.....	160
Reflection in Action.....	161
Creating an Optimal Learning Environment.....	162
Chapter 7 - Case 3 – Rita – From Potential Dropout to Motivated Learner	166
Introduction.....	166
Initial Experiences of Piano: Motivators and Stressors	168
Parental Pressures	169
Examinations.....	171
Focus	172
Experiences of Non-Formal Approach	173
Experiences of Formal Approach	175
Development.....	177
Autonomy	177
Independence	178
Musical Competence.....	180
Motivation and Values	181
OIT Taxonomy of Motivation.....	184
Concluding Observations.....	186
Chapter 8 - Developing New Ways of Learning.....	188

Introduction.....	188
Participant Summary.....	188
The Role of Theory in the Analysis of Student Interviews.....	189
Overview of Alternative Pedagogical Approaches.....	190
The Impact of Alternative Pedagogical Approaches on Musical Skills & Knowledge.....	191
Aural Skills	191
Reading Skills	194
Making Musical Connections – Thinking Harmonically.....	197
Developing Musical Competence	199
The Impact of Alternative Pedagogical Approaches on Motivation.....	203
The Important Role of Autonomy in Creating Motivated Learners	203
The Impact of Alternative Pedagogical Approaches on Engagement	206
The Impact of Traditional Formal Approaches on Student Engagement	207
Enhanced Engagement through Musical Analysis.....	208
Optimal Challenges.....	210
The Effects of Enjoyment on Engagement	211
The Impact of Alternative Pedagogical Approaches on Independence	213
Importance of Musical Literacy for Independent Learning	213
Aural Skills, Musical Knowledge, and Understanding for Independent Learning.....	214
The impact of Optimal Challenges on Enhanced Competence and Independence.....	215
How a Combination of Approaches Increased Student Independence	216
Challenges with Independently Employing the HeLP Approach	217
Non-Musical Factors that Impacted Student Experiences and Development.....	218
The Role of the Teacher.....	218
Examinations.....	222
Practical Challenges with Technology.....	224
Summary	225
Chapter 9 - Towards a New Pedagogical Model	227
Introduction.....	227
Models of Musical Development.....	227
Theories in Cognitive Development, Education, and Motivation	231
Motivation for MuSIKE Model	232
Formal and Non-Formal Continuum.....	235
Active Listening.....	237

Discovery Learning.....	237
Scaffolding.....	238
Autonomy-Support.....	239
Competence-Support.....	240
Learning Attributes	241
Chapter 10 - Discussion and Conclusion	243
Introduction.....	243
Summary of Findings.....	244
The Development of Musical Knowledge and Skills	245
Aural Skills	245
Notation Reading Skills	246
Making Musical Connections	247
Enhanced Student Engagement and Motivation to Learn.....	248
Student Capacity for Independent Learning	249
Limitations	250
Implications & Recommendations.....	251
Implications.....	251
Recommendations for Practice	252
Teacher Education and Professional Development	253
Future research.....	255
Next Steps	256
Concluding Thoughts.....	256
Bibliography	258
Discography	272
Appendix A: Resource Sheet – David – Cycle 1 – <i>Allegro</i> – LH	273
Appendix B: Resource Sheet – David – Cycle 2 – <i>Lullaby</i> – LH	274
Appendix C: Overview of the Action Research Process.....	275
Appendix D: Student Interview Guide – Pre-intervention – Cycle 1	277
Appendix E: Parent Interview Guide – Post-intervention – Cycle 3	278
Appendix F: Interview transcript – Ann – Cycle 3 – Post-intervention	279
Appendix G: NVivo Step-by-Step Analysis Process – Initial Set-up of Interview Data	285
Appendix H: Codebook – Nodes//Phase 1 – Open Coding.....	289
Appendix I: Manual Interpretive Coding Process.....	292
Appendix J: Information Sheets and Consent Forms (Pre-Cycle 1)	295

Appendix K: Sheet Music – Ann – Cycle 1 – <i>Étude</i> by Stephen Heller	300
Appendix L: Resource Sheet – Ann – Cycle 1 – <i>Étude</i> – Accompaniment in Block Chords	302
Appendix M: Simultaneous Learning Practice Map	303
Appendix N: David – Cycle 1 – Summary of Teaching & Learning	304
Appendix O: David – Cycle 3 – <i>The Entertainer</i> (arrangement) by Scott Joplin	307
Appendix P: David – Cycle 3 – <i>Nuvole Bianche</i> (arrangement) by Ludovico Einaudi.....	309
Appendix Q: Motivation for MuSIKE Model – Logo Prototype	312

List of Tables

Table 2.1. Comparison of approaches – SL & HeLP.....	74
Table 4.1. Research design	101
Table 5.1. Student Profile - Ann	121
Table 5.2. Summary of Ann's self-directed learning - <i>Gigue</i>	133
Table 6.1. Student Profile - David	143
Table 6.2. Summary of Learning - <i>Nuvole Bianche</i>	158
Table 7.1. Student Profile - Rita	168
Table 8.1. Participant Overview	189
Table 8.2. Overview of Student Learning Preferences	202

List of Figures

Figure 2.1. The interaction of human variables within a musical context (Creech and Hallam, 2003, p. 40)	29
Figure 2.2. Swanwick and Tillman's (1986) Spiral of Musical Development.....	56
Figure 3.1. Based on the OIT taxonomy of motivation (2000a; 2000b; 2001; 2017; Deci, Koestner and Ryan, 2000)	85
Figure 3.2. OIT taxonomy of motivation applied to learning new piano repertoire.....	89
Figure 4.1. Stringer's (1999) 'look, think, act' model (Creswell 2005, p.568)	99
Figure 4.2. Framework for Action Research (Cohen, Manion and Morrison, 2018, p.451)	100
Figure 4.3. Action Research Process	107
Figure 5.1. Bar 1-15 of <i>Étude</i> illustrating Riff 1-3	124
Figure 5.2. Sample of <i>Waltz</i> by Britten annotated with riffs 1-4.....	125
Figure 5.3. Example of dense harmonic textures in <i>Waltz</i>	125
Figure 5.4. Excerpt (bar 1-12) from Block Chord Resource Sheet for <i>Étude, Op. 47 No. 15</i> by Heller.....	128
Figure 5.5. Excerpt (bar 1-12) from Original Sheet Music for <i>Étude, Op. 47 No. 15</i> by Heller.....	128
Figure 5.6. <i>Fantasy No.1 in D</i> - Analysis	130
Figure 5.7. <i>Gigue</i> - Annotated to show sections learned by Ann prior to each lesson	134
Figure 6.1. Excerpt from <i>Allegro</i> Resource Sheet	145
Figure 6.2. <i>Allegro, Op. 38 No. 3</i> by Johann Wilhelm Hassler - Annotated Sheet Music with Riffs	145
Figure 6.3. <i>Lullaby</i> by César Franck – Excerpt of Annotated Sheet Music with Riffs	148
Figure 6.4. Excerpt from <i>Lullaby</i> Resource Sheet.....	149
Figure 6.5. <i>Study in C</i> by Hermann Berens - Original sheet music	151
Figure 6.6. <i>Study in C</i> - Chord Chart Resource Sheet.....	151
Figure 6.7. Excerpt from <i>Nuvole Bianche</i> - bar 5-8 – Where David struggled to discover the Eb .	154

Figure 6.8. Excerpt of <i>The Entertainer</i> by Scott Joplin - Annotated Sheet Music	155
Figure 6.9. Excerpt from <i>The Entertainer</i> – Part of Riff 6.	156
Figure 6.10. <i>Nuvole Bianche</i> by Ludovico Einaudi - Annotated Sheet Music	157
Figure 7.1. Excerpt from <i>Allegro Assai</i> by Hassler - Riff 1.....	174
Figure 7.2. OIT taxonomy of motivation - Rita's comments on learning	185
Figure 8.1. Virtuous Circle of Learning by Ear	213
Figure 9.1. Wright's (2016) mixed polarities of real-life informal learning	228
Figure 9.2. Hewitt's (2018) interpretation.....	229
Figure 9.3. Creech, Varvarigou and Hallam's (2020) model of ‘‘manifold musical possible selves’. (Created by John Martzoukos – graphic designer)’ (p. 17)	230
Figure 9.4. Motivation for MuSIKE Model - In practice.....	233
Figure 9.5. Motivation for MuSIKE Model - Practitioners	234
Figure 9.6. Four Main Attributes of the Motivation for MuSIKE Model.....	241

List of Abbreviations

ABRSM	Associated Board of the Royal Schools of Music
AEC	European Association of Conservatoires
BA	Bachelor of Arts
BMus	Bachelor of Music
BPN	Basic Psychological Needs
CAQDAS	Computer-Assisted Qualitative Data Analysis Software
CET	Cognitive Evaluation Theory
CPD	Continuing Professional Development
CSM	Cork School of Music
DCU	Dublin City University
DfE	Department for Education
TU Dublin	Technological University Dublin
EPP	Ear Playing Project
HE	Higher Education
HeLP	Hear, Listen, Play
HS	Hands Separate
HT	Hands Together
IME	Instrumental Music Education
ISM	Incorporated Society of Musicians
LCM	London College of Music
LH	Left Hand
MIC	Mary Immaculate College
MIREC	Mary Immaculate College Research Ethics Committee
MLM	Motivation for Learning Music
MS	Microsoft
MTU	Munster Technological University
NUI	National University of Ireland
OIT	Organismic Integration Theory
PLOC	Perceived Locus of Causality
RH	Right Hand
RIAM	Royal Irish Academy of Music
SDT	Self-Determination Theory
SL	Simultaneous Learning
TCL	Trinity College London
UCC	University College Cork
UCD	University College Dublin
UL	University of Limerick
WIT	Waterford Institute of Technology

Use and Application of Terms

Term	Definition as interpreted and applied in this study
Formal learning	Structured and organised learning that has set learning objectives. Learning can be through formal activities such as reading notation and musical/score analysis, predominantly with a focus on developing Western Classical musical knowledge and understanding, and literacy and technical skills.
Informal learning	Unstructured and unintentional learning that has no set learning outcomes and takes place outside of formal settings, for example, how popular musicians typically learn through listening to and imitating recordings by ear.
Non-formal learning	Learning that often has set learning objectives and takes place in a structured environment such as the piano lesson, but where students use informal learning practices such as learning by ear to learn a section of music.
Musical analysis	A visual analysis of a written piece of music where certain elements such as form, structure, melodic lines, harmonic progressions, rhythmic patterns, dynamics, and stylistic characteristics, among others, are identified. Musical analysis typically also includes listening; however, this is not always the case in the context of this study as some students had not developed this skill until later in the study.
Pedagogical approaches	Pedagogical approaches are the methods and practices used to impart knowledge and skills in the teaching and learning process.
Traditional approaches	A teacher-led approach to teaching piano based on the master-apprentice model and Western Classical music practices; predominantly focused on developing music literacy, technical and performance skills.

CHAPTER 1 - INTRODUCTION

Introduction

General music education in schools has evolved throughout the Western world over recent decades from being teacher-directed, to holistic and student-centred (McPherson, 2005; 2006). The revision of the Irish primary school music curriculum in 1999 (DfE, 1999) is an example of this within the Irish context as it aims to encourage creativity and allow students to obtain a musical knowledge and understanding through the strands of performing, composing, and listening and responding. However, it has been argued that instrumental music education (IME) in Ireland, and internationally, has not evolved in the same way (Taaffe, 2014; Brook, Uptis and Varela, 2017; Folkestad, 2006; Green, 2008). Moreover, there have been some concerns, not only that IME does not align with classroom music education, but that it also has ‘not benefitted from the research and theory which have influenced other areas of education’ (Taaffe, 2014, p. 14).

This study investigates how pedagogy in the one-to-one piano music lesson, vis-à-vis the inclusion of formal and non-formal teaching and learning practices, impacts students’ musical knowledge, skills, and motivation to learn. In particular, the study explores the co-construction of pedagogy between teacher and student through action research methods. It aims to bridge the gap between classroom music and instrumental music education and enhance teaching and learning practices in the one-to-one piano lesson. This is achieved through the exploration of various pedagogical approaches and by identifying pragmatic, creative ways in which informal music learning practices can be incorporated into pedagogy and assessment.

Background and Rationale

Issues in Piano Education

It is unknown how many piano teachers are currently working in Ireland, but over 30,000 students partake in graded piano examinations each year, and it is estimated that approximately 40,000

students attend weekly one-to-one piano lessons across the island of Ireland (Wardrop, 2017). The educational settings where these students learn their instrument vary; with some attending a conservatory of music where they are also required to attend weekly classes in musicianship, others attending privately run schools of music or piano studios; or learning from a local piano teacher, often in their own homes. Despite the significant number of students attending lessons, piano pedagogy is an under researched area with few studies conducted within the Irish or international context. Elgersma (2012) puts this down to the ‘newness of piano pedagogy and its unusual place in academia’ (p. 410). Most of the studies within the field have been conducted within the past thirty years, and focus primarily on teacher experiences, and teacher education in undergraduate and graduate degree courses (Elgersma, 2012; Gray, 1997; Johnson, 2002; Lennon, 1996; Lennon and Reed, 2012; Schons, 2005; Shook, 1993; Slawsky, 2011).

Lennon’s (1996) doctoral study on piano teacher behaviour within the UK context provides important insights into the thinking and decision-making processes of teachers in a range of settings. However, while teachers undoubtedly play a key role in a student’s education, and it is important to research their pedagogical processes and address their educational and professional needs, no study to date, either nationally or internationally, has focused on the student voice and their experiences of learning piano. Students are key stakeholders in their own education and without their input it would be difficult, if not impossible, to discover how we, as teachers and researchers, can best meet their needs.

High Student Dropout Rates

Research has revealed that most students drop out of formal instrumental lessons between the ages of eleven and sixteen (See Ryan and Deci, 2017, pp. 354-357), arguably before they reach a level of proficiency that enables them to partake in lifelong learning (Evans, McPherson and Davidson, 2013; King, 2016; McPherson, 2005; 2006), with some studies citing a dropout rate in excess of

90% before the end of high school (See King, 2016). This indicates a critical problem in piano education that needs to be investigated and addressed.

Reasons for early dropout provided in the literature include a perceived lack of ability, and/or a lack of interest and autonomy, with many students stating they did not enjoy lessons or practicing their instrument and found learning ‘boring’ (Evans, McPherson and Davidson, 2013; Evans, 2015). These studies advocate for the inclusion of creative and interesting activities and to encourage the development of new musical and critical-thinking skills, in addition to autonomy-supportive teaching practices that allow students feel more in control of their own learning.

The Dichotomy of Formal and Informal Learning Practices

One such possible answer to early dropout is the inclusion of informal learning practices such as learning by ear. Over the last two decades many studies have highlighted the benefits of using non-formal approaches, based on informal learning practices, when teaching classroom music. These benefits include enhanced learning experience, engagement with music, creativity and enjoyment (Brook, Upitis and Varela, 2017; Davidson and Scutt, 1999; Green, 2002; 2008; 2014; Hallam *et al.*, 2009; Lines, 2005; Robinson, 2012; Varvarigou and Green, 2015), as well as students having ‘higher levels of attainment’; a ‘greater range of musical skills’ (Hallam *et al.*, 2009); and students ‘learning to be their own musicians’ (Brook, Upitis and Varela, 2017).

However, formal and informal learning practices are often seen as a dichotomy in instrumental music education (Brook, Upitis and Varela, 2017; Folkestad, 2006), with teachers and/or students placing more importance on one over the other. For example, piano pedagogy in particular tends to be dominated by formal Western classical music practices; focusing on musical literacy, technical proficiency, and the partaking of graded examinations (Evans, 2015), all of which have been found to lead to a lack of creativity in the lesson (Bridge, 2005).

Piano, more so than other instruments, is often associated with classical music and delineates femininity and privilege. The continued focus on Western classical music repertoire and

learning practices, particularly in graded examination curricula, has fed the perpetuation of this dominant ideological perspective (Bourdieu and Passeron, 1990; Green, 2005). Green (2005) noted that many students lack interest in this type of music and find it difficult to engage with it, as it does not align with their own musical values and experiences outside of the classroom. Therefore, through the inclusion of non-formal learning approaches alongside alternative and traditional formal approaches, this study aims to create a more holistic and balanced music education that better meets piano students' musical needs and interests.

Impact of Graded Examinations on Teaching Practices

Examinations, which are prevalent in piano education, have often been viewed as problematic in the literature, both in the wider educational context (Ryan, Mims and Koestner, 1983; Ryan and Deci, 2017; Deci and Ryan, 2000a), and within instrumental music contexts (Bridge, 2005; Brady, 2013; Davidson and Scutt, 1999; Evans, McPherson and Davidson, 2013; Taaffe, 2014). Research shows that educators often place great importance on grading and examinations as they believe it motivates students to learn (Deci and Ryan, 2000a). Yet, the evidence demonstrates that focusing on outcomes, such as achieving high grades, 'lead to a tendency in people to take the shortest path' (Ryan and Deci, 2017, p. 377). This includes teaching to the test and imparting knowledge onto students in an effort to speed up the learning process (Ryan and Deci, 2017).

Many scholars have shown that this tendency is prevalent in the one-to-one piano lesson context, as many piano teachers teach to the exam due to pressure from parents, and sometimes the students and teachers themselves, for students to achieve high grades (Bridge, 2005; Chawke, 2017; Davidson and Scutt, 1999; Harris, 2015; Taaffe, 2014). These studies found that teaching to the exam resulted in reactive, teacher-led approaches being employed, as opposed to the proactive, holistic, student-centred approaches encouraged in the literature (Bridge, 2005; Chawke, 2017; Davidson and Scutt, 1999; Harris, 2015; Ryan and Deci, 2017; Taaffe, 2014).

Furthermore, Brady (2013) found that there was little discovery on the part of the student when preparing for end of year assessments such as graded examinations, as the teacher often assimilated the knowledge for their students; preventing a deep understanding and knowledge of music from being obtained (p. xxiii). It is unsurprising, therefore, that students become disengaged with learning when preparing for examinations; if students are not given the opportunity to discover new knowledge for themselves it has a detrimental impact on their motivation to learn (Bruner, 1961). These findings are backed up by the writing of Fleischmann, circa sixty years prior to Brady's research, who noted, 'instead of the examination being a test of the pupil's progress, it becomes the only progress' (1952, p. 130). This highlights the slow pace at which piano education in the Western world has evolved over the decades, with little change or advances in teaching and assessment practices evidenced.

In addition to the teacher-led approaches predominantly used to prepare students for graded examinations, studies have found that, in many instrumental music classrooms, examination syllabi have become the sole curriculum and not used as part of a broader curriculum (Bridge, 2005; Brook, Upitis and Varela, 2017; Fleischmann, 1952; Taaffe, 2014). This can also be harmful to a student's musical development and motivation to learn as many instrumental music examination syllabi do not align with most students' musical tastes and interests; a problem which results in students becoming demotivated and disengaged in what they are learning (Brook, Upitis and Varela, 2017, p. 157).

Instrumental teachers and students have expressed a need for examination boards to focus more on musical skills and creating a deeper musical understanding, rather than just literacy, performance skills, and technical proficiency, and respond to the musical tastes of children and adolescent students by updating the examination syllabi (Bridge, 2005; Taaffe, 2014). However, as the research above demonstrates, much of the problem is the importance placed on the end-of-year examination and how that influences how piano teachers teach.

In a study of instrumental and vocal teacher competences, the role of the teacher and implications for curriculum development, based on the European Association of Conservatoires (AEC) 'Polifonia' project report on instrumental/vocal teacher education, Lennon and Reed (2012) found that, as the roles professional instrumental teachers may take on are expanding, and the contexts changing, teachers now need to develop a wider set of competences to be successful in their teaching and meet the diverse interests and needs of their students. These competences, outlined by the AEC (2010) report, are intended to aid curriculum development in teacher education and meet the demands of the profession. The 'Polifonia' project has made a significant contribution to the enhancement of instrumental teacher education in Europe, and this research looks to inform the advancement of this work, particularly with regards to the curriculum development of one-to-one piano teachers already in the profession, in addition to those studying to become teachers.

Personal and Professional Rationale

In addition to an examination of the research literature, the rationale for this study emerged from reflecting on my personal and professional experience, as a piano student, undergraduate music student, and piano teacher of over ten years. As a piano student, I experienced formal, traditional approaches, similar to those outlined in the literature (Chappell, 1999; Hallam, 1998; Taaffe, 2014). This included teaching and learning practices which focused primarily on reading notation, technical exercises (scales/arpeggios etc) and practising three graded piano pieces each year for an end-of-year examination. These approaches were dominated by Western classical musical values and placed little importance on developing my aural skills, playing from memory, or making musical connections between the repertoire, scales and arpeggios, and theory that I learned each year. Nonetheless, I enjoyed attending piano lessons as I had a good relationship with all my piano teachers, and I found reading notation relatively easy. However, as I reflected on these formative years as a student, I realised not only was there little discovery learning or development of a range of musical skills, but that the teacher controlled and directed almost all aspects of my learning.

This aligns with how Gordon (2009) described the traditional master-apprentice teaching model – when ‘the teacher is in complete control of the creation and dissemination of knowledge’ (Gordon, 2009, p. 45). In hindsight, I believe this led to me becoming highly dependent on notation and relying on my teacher to always tell me what and how to play, with underdeveloped aural skills, inadequate musical knowledge, and little musical understanding of the difficult repertoire I was learning. This experience resonates with the writings of Swanwick (1994; 1999) and Hallam (1998) on these issues within formal instrumental music education.

Interactions with Popular Musicians

During my undergraduate degree I had the opportunity to work with some popular musicians and this opened my eyes to the skills I was so evidently lacking as I watched them play by ear and improvise with ease and confidence; a notably enjoyable experience for them, but the thought of which terrified me. I began to question my own identity and abilities as a musician, and it made me pause to question: what makes a good musician? I had spent twenty years being classically trained on my instrument at that stage, and although I was technically proficient and could play difficult repertoire, I did not feel comfortable playing popular songs based on a simple four chord progression without having the complete score in front of me. Yet, when discussing this with the popular musicians, they noted how they wished to improve their reading skills and theoretical knowledge as they felt they lacked in these areas. It became clear that we had very different experiences of instrumental learning, each having focused on either formal or informal learning practices but wishing we had experienced both. The accounts of these popular musicians resonated with Green’s (2002) research on popular musicians’ learning experiences and the accounts of the popular musicians who participated in Pitts (2012) research.

On reflection, I can see how my learning experience affected me as a musician and teacher. I feel that in some ways my learning experiences held me back, particularly as a performer, as my reliance on sheet music and underdeveloped aural skills did not match the requirements for playing

some of the styles of music that I wished to play, such as popular music, and prevented me from performing in certain musical settings. However, it was not all negative as my learning experiences influenced me to make positive changes to my piano teaching practice in recent years as I strived to ensure my students did not feel disadvantaged in the ways I did.

Trialling Non-Formal Learning

Prior to this research, and influenced by the popular musicians I discussed earlier, I observed some benefits of incorporating non-formal learning practices with piano students in the one-to-one piano lesson. This was done through the inclusion of non-formal teaching methods and encouraging students to learn by ear, play from memory, read chord charts, and improvise. As my students appeared to enjoy this experience, and increased levels of motivation to play, musical understanding and learning capacity among my students were observed, I sought to harness the potential of empirically researching these pedagogical practices to see if they could benefit my teaching practice and student learning, as well as the broader piano learning community.

To address the issues outlined above, this study focuses on the teaching and learning process and seeks to examine ways in which new pedagogical approaches can enhance students' learning experiences while still preparing for these graded examinations, if the student wishes to do so. This is achieved by developing more holistic musical knowledge and skills in students that are easily transferrable to other styles and pieces of music they wish to play, such as popular and jazz, while maintaining high standards of musical literacy and technical proficiency. For this reason, this research is both significant and timely as it addresses the gaps in the literature and moves us another step closer to creating a more holistic and beneficial music curriculum for piano students.

A Lack of Longitudinal Research

There is a paucity of longitudinal studies in music education, specifically within the instrumental piano lesson context. Previous longitudinal studies have looked at the impact of instrumental music

education on academic development and achievement (Costa-Giomi, 2004; Yang *et al.*, 2014), cognitive function (Bugos *et al.*, 2007; Roden *et al.*, 2014) and brain development (Hyde *et al.*, 2009). The only longitudinal study on the development of instrumental music pedagogy to date looked at the use of technology in small group instrumental clarinet lessons over a nine-month period (Nijs and Leman, 2014), which arguably is not a sufficient timeframe to assess real, meaningful change. There may be many reasons for such a low number of longitudinal studies in this area, such as difficulty obtaining funding for research projects that require a large timeframe, and the attrition rate of participants from such studies when carried out over several years. Despite this, if we are to develop pedagogical approaches and make a meaningful contribution to knowledge and the wider piano teaching community, more longitudinal studies such as this should be carried out.

Research Problem

The research problem can be summarised thus: 1) students' learning experiences in the one-to-one piano lesson is mostly absent from the instrumental music teaching and learning discourse; 2) research shows that students who partake in formal, graded piano examinations tend to drop out early and do not partake in lifelong learning or engagement with their instrument after they cease lessons; and 3) many piano teachers tend to be influenced, or dominated, by Western classical music practices and place weighted importance on formal pedagogical approaches which focus on literacy, performance, and technical proficiency, often to the detriment of informal skills. Furthermore, many tend not to reflect on their teaching practices, or question their teaching methods or why most students do not go on to partake in lifelong learning after piano lessons, despite hearing many anecdotal stories of people who cease playing, even after reaching an advanced level as a teenager or young adult.

Swanwick (1999) argued that many music curricula are 'musically restrictive' and 'stultifying', and have almost proscribed student musical decision-making from their own music

education (Swanwick, 1999, p. 40). Like Swanwick, advocates of action research studies argue that students need to be heard and listened to and that it is essential they become part of the decision-making process (Cohen, Manion and Morrison, 2018; Zuber-Skerritt, 1996). Boyle (2012) agrees, stating that ‘finding out what the young people need and not just telling them is vital for improving effectiveness and efficiency as it enables young people to participate in actions creating meaningful change’ (p. 11).

If we, as practitioners and researchers, want to bring about meaningful change, the inclusion of the student voice is necessary in both the research methods employed to ascertain student needs and opinions, and in everyday decision-making processes in the music classroom and instrumental lessons. Therefore, the student voice remained central to this three-year longitudinal study; the first study of its kind within the piano education context. This research is an original contribution to knowledge as it is designed to ameliorate the issues of disinterest and dropout, while concomitantly striving to meet piano students’ needs and interests and developing their formal and informal learning skills. The study seeks to improve practice so that teacher and students, can benefit from more engaging learning experiences that equip them with the skills and motivation necessary to partake in independent, lifelong learning.

Situating the Research

Dominant Ideologies and Western Classical Music Practices

Ideology helps us to ‘understand how musical values affect musical practices, and most significantly, to indicate how our musical practices can act back to affect our musical values’ (Green, 2003, p. 22). The hegemony of Western classical music practices and values is well documented in the literature in the UK (Green, 1988; 2003; 2002; 2005; 2008; Swanwick, 1999; Wright, 2008), Ireland (Moore, 2012; 2014; O’Flynn, 2009), in the US (Allsup, 2010; Campbell, 1998) and in Australia (McPherson, 2006). This tends to manifest in curriculum and practice, where the teaching of notation and music literacy, which is now embedded within the Western classical

tradition, is highly valued and takes precedence over ear playing and improvisation skills. This focus on Western classical music practices is particularly prevalent in the one-to-one piano lesson. Quoting Gibbs (1993), Chappell (1999) discussed the survey data which found that a typical piano teacher's description of their lesson content was 'scales, studies, pieces, and a bit of sight-reading' (p. 253). This is consistent with the literature on piano teaching and learning in recent decades which illustrated the hegemony of literacy and technique in piano education.

Gellrich and Parncutt (1998) investigated the evolution of piano technique in the eighteenth and nineteenth centuries, and found that, since the mid-nineteenth century, piano has 'transformed from a creative to a reproductive art' where improvisation and aural skills were replaced with a focus on technique and virtuosity, and technical exercises such as scales and arpeggios, which were once seen as a way of 'learning the common vocabulary of music' became a way of improving technical fluency and skill (Gellrich and Parncutt, 1998, p. 6). Green (2008) described informal learning practices, such as improvising and learning by ear, as 'natural' learning practices and discussed how the evolution in music education since the nineteenth century has alienated us from these practices, which we are now trying to learn again as we realise their importance for musical development and the role they play in maintaining a lifelong engagement with music (Allsup, 2010; Bridge, 2005; Brook, Upitis and Varela, 2017; Flynn and Johnston, 2016; Green, 2002, 2008; Folkestad, 2006; Hallam *et al.*, 2009; McPherson, 2006).

As studies by Green (1988; 2002; 2003; 2008) show, dominant ideologies can be detrimental to students' musical development, particularly as many students are more interested in listening to and playing popular music than classical music. Because of this paradox, teachers, and in the case of this study, piano teachers (including the researcher), often do not meet the musical needs and interests of students. Thus, this study looks to problematize and contest the dominant ideologies which have perpetuated piano education and regulated how piano is taught in Ireland, and in many Western countries, for so many years. However, while instrumental pedagogy and curricula that focuses solely on Western classical music practices is problematic, Green (2005) and

Gaunt (2016) warn that, to create a more collaborative and reflective learning environment, ‘it is essential that the proverbial baby is not thrown out with the bath water’ (Gaunt 2016, p. 270); we must maintain high standards of musical literacy and technique while still empowering students to gain ownership of their own learning. Therefore, through the lens of Green’s (1988) theory of musical meaning and ideology, I examine ways in which the imbalance between the formal and informal, between reading notation and playing by ear, in the one-to-one piano lesson could be addressed.

The Role of the Teacher and Pedagogical Approaches

Over the past two decades several studies have highlighted the benefits of using non-formal approaches when teaching general music in schools; enhancing students learning experience, engagement with music, creativity, and enjoyment (Green, 2008; Hallam *et al.*, 2009; Lines, 2005; McPherson, 2006) as well as students having ‘higher levels of attainment’; and a ‘greater range of musical skills’ (Hallam *et al.*, 2009). These non-formal approaches are influenced by the informal learning practices of popular musicians. The inclusion of such informal learning practices in instrumental tuition has been found to have similar positive effects on students; both in their musical development and motivation to participate in musical activities (Brook, Upitis and Varela, 2017; Davidson and Scutt, 1999; Flynn and Johnston, 2016; Folkestad, 2006; Green, 2002; 2014; Robinson, 2012; Varvarigou and Green, 2015); and encourages them ‘to be their own musicians’ (Brook, Upitis and Varela, 2017)

Brook, Upitis and Varela (2017) argued that teachers excluding these practices and, instead, ‘incorporating pedagogical practices that do not align with the goals of their students may limit student interest and engagement’ (p. 157). While there are distinct differences between formal and informal practices, Folkestad (2006) believes that these should not be a ‘dichotomy’, but ‘two poles of a continuum’ (p. 135). Like Folkestad (2006), Brook, Upitis and Varela (2017) noted the importance of creating a combination of ‘formal and informal learning opportunities’ to allow

students to obtain a ‘well-rounded’ music education (p. 164). Students need to learn aurally and by notation to have ‘the whole package’ (Brook, Upitis and Varela, 2017, p. 162), as they are both important skills for different purposes (Folkestad, 2006, p. 138).

Therefore, within the contexts of this study, it is not the intention to create a dichotomy between formal and informal learning practices. Rather, two pedagogical approaches; one formal and one non-formal, were chosen to be empirically researched from the perspective of learner and teacher; Green’s (2014) Hear, Listen, Play! (HeLP) Strategy and Harris’s (2004) Simultaneous Learning approach (See Chapter Two for a detailed discussion of these two approaches). These approaches were chosen because of their common aim; to create musically independent, lifelong learners. By creating independent learners, educators can ensure their students have the skills to partake in lifelong musical engagement. It is not intended that these approaches replace traditional approaches, rather complement, and enhance them. Therefore, in this study, these approaches are employed in addition to the existing, more traditional, approaches which tend to be predominantly used in the one-to-one piano lesson in Ireland.

Teaching Philosophy

Education and philosophy are interconnected and a knowledge of one’s own teaching philosophy, an understanding of students’ beliefs, and how these have been informed and shaped is essential in becoming an effective teacher. My teaching philosophy centres around pragmatic constructivism and is guided by the writings of educational philosopher John Dewey, in addition to Maxine Greene and educational psychologists such as Bruner and Piaget. In accordance with the constructivist paradigm, my epistemological view is that knowledge is created through interactions and experiences. Like key philosophers Dewey and Greene, and psychologists Bruner and Piaget, I believe that learning is more meaningful and engaging when students discover new knowledge for themselves through interacting, experiencing, and adapting to their environment (Bruner, 1961; Dewey, 2015; Dewey, 1966; Greene, 2005; Snowman and Biehler, 2003).

Dewey was a pragmatist and constructivist and, similar to his counterparts, advocated for educators to move from teachers to facilitators, and to take a student-centred approach where curricular goals are merged with students' growing interests and needs (Dewey, 2015), and where students partake in activities that stimulate critical thinking and problem-solving skills which can then be applied to real-life situations (Dewey, 1966). Dewey's famous quote, 'education is not preparation for life but life itself', illustrates his aim to empower students to continue growing and partake in lifelong learning. This resonates deeply with my overarching teaching goal and the aims of this research; to create a learning environment which prepares piano students for a lifelong engagement and participation in active music making and learning.

In my experience, learning and playing piano is often an activity students partake in between the ages of eight and eighteen years old, but frequently, once lessons cease so does the learning and playing. One of the reasons for this, in my experience, and backed up by the literature cited above, is that piano pedagogy is often dictated by examinations and, to achieve high grades, teachers then teach to the exam and the students become dependent on the expert teacher to guide them through the preparation for these exams. After years of teachers deciding and controlling how and what students learn, they lack the autonomy and skills required for independent learning as they don't know how or what to learn when they are inevitably left to fend for themselves, ultimately becoming unmotivated and abandoning their piano education. My aim as a piano teacher is to challenge and prevent this regrettable outcome by equipping my students with the musical and critical thinking skills, and motivation required for independent lifelong learning. In essence, my aim is to essentially become obsolete, so my students no longer need me to guide them through their learning.

Pragmatic constructivists challenge traditional approaches to learning and integrate action with critical thinking, analysis and reflection on the part of the student and teacher (Gordon, 2009). From the beginning of my teaching career, I have continuously sought to enhance my teaching by integrating and trialling new ideas each year and then reflected on how these impacted the students'

development. The aim of implementing new approaches and ideas is to find ways to enhance my students' musical development and learning experiences. This thesis demonstrates such challenges and developments in my teaching, albeit on a larger and more impactful scale than previous ideas, and with a greater focus on empowering students to become more motivated and independent learners.

The pragmatic constructivist 'is deeply concerned with changing current educational practice to foster active learning and genuine understanding' (Gordon, 2009, p. 55) and does so through combining educational theory and practice. Through the implementation of new ideas and, moreover, the implementation and development of the formal and non-formal pedagogical approaches discussed in this thesis, I created a dynamic, engaging, and student-centred learning environment that put the needs and interests of my students first, while simultaneously providing them with a range of skills and tools they may require for future independent learning situations.

Aims and Objectives

The research sought to a) investigate ways of enhancing teaching and learning practices in the one-to-one piano lesson, b) identify pragmatic, creative ways in which teachers can incorporate non-formal music learning practices into pedagogy and assessment practices, and c) examine how formal and non-formal approaches can impact students' musical development, motivation to learn and independence.

Research Question(s)

The following research question informed the design of the study:

How can pedagogical approaches that include both formal and non-formal learning practices enhance musical knowledge, skills, and motivation for learning in one-to-one piano education?

To answer this overarching question, the following sub-questions emerged:

1. To what extent can pedagogical approaches that include both formal and non-formal learning practices in the piano lesson enhance students' musical knowledge and skills?
2. To what extent can pedagogical approaches that include both formal and non-formal learning practices in the piano lesson influence motivation for learning piano?
3. How can the inclusion of non-formal learning practices in the piano lesson enhance students' capacity for independent learning?

Methodology & Research Design

The research questions reside within a constructivist interpretivist paradigm. Therefore, as the research looks to improve teaching and learning and gain a greater understanding of student motivation and independence, it was imperative that a practical method was employed to allow an in-depth exploration of the research questions. Action research was chosen as it allows for a deeper understanding of the subject area (Creswell, 2009) and is an approach adopted by practitioners who aim to change and enhance their own practice (Cain, 2008; Cohen, Manion and Morrison, 2018; Kemmis, 2009; Zuber-Skerritt, 1996). As is conducive to an action research approach, a diverse range of qualitative methods and data collection tools were employed including audio recordings, a reflective journal, and semi-structured interviews with student participants and their parents (Cohen, Manion and Morrison, 2018).

Regelski (1995) argued there is a gap between the research conducted by scholars and the music practitioners 'who regularly ignore and nullify such research in their teaching' (p. 65) for several reasons including a lack of time and support to interact with such writings, and the notable hierarchy perceived between researchers and teachers. Because of this, Regelski (1995) stated, practitioners often conduct their teaching 'on the basis of past practice, recipe teaching, and passing fads – none of which are seen as supported by solid research' (p. 65).

Action research is undertaken by practitioners who aim to improve their own teaching practice, usually for the benefit of their students (Cain, 2008; McNiff and Whitehead, 2010).

Therefore, by addressing the research questions outlined above through a qualitative action research approach, the gap between researcher and teacher is addressed as I assumed the role of practitioner-researcher in this study.

This action research project was carried out over three years with six student participants. Two alternative pedagogical approaches, one formal and one non-formal were implemented and developed over three cycles. Each lesson was audio recorded and subsequently analysed to ascertain the students' musical development and the effectiveness of the formal and non-formal approaches employed on their musical knowledge, skills, motivation to learn, and ultimately their propensity to partake in independent learning. In addition, semi-structured interviews were carried out with the participants pre-Cycle 1 and post-Cycles 1-3, to obtain their opinions and learning experiences.

To ensure the student participants were illustrative of 'typical' piano students, potential participants were identified under the following criteria:

1. The participants were aged between eight and eighteen years of age.
2. They were preparing to sit a formal graded examination.
3. They had predominantly been taught piano through notation.

It was important that an optimum number of students participated in the research. As the practitioner-researcher, and the heavy workload associated with that position, too many participants would have resulted in an unmanageable amount of data, yet to provide sufficient data and to ensure any dropout from the study did not negatively impact the findings (Creswell and Poth, 2018), ten students were invited to partake in the study. Following the identification of potential participants using the criteria above, these participants were identified using 'maximal variation sampling' (Creswell, 2005) to ensure they differed in age, level, ability and learning preferences, and that a gender balance representative of a typical piano studio was maintained. As is the nature of longitudinal studies, four participants dropped out of the study over the three-year period for a variety of valid reasons such as illness/injury or moving away. The research focuses on the six students that remained and their development over this time.

Three cycles were carried out over the three years which can be summarised as follows:

- Cycle 1 – 6-8 weeks with 10 participants (7 female & 3 male)
- Cycle 2 – 12-15 weeks with 8 remaining participants (6 female & 2 male)
- Cycle 3 – 15-18 weeks with 6 remaining participants (4 female & 2 male)

The data from the action research and interviews were analysed using thematic analysis, and the themes were determined using an inductive approach.

Action research is an iterative, dynamic process which moves between cycles of planning, action, evaluation and reflection (Lewin, 1946), with each cycle informing the next (Creswell, 2005). While action research was the most suitable approach for this research, it can sometimes be seen as problematic and inadequately applied. Cain (2008), after an analysis of action research studies conducted in the field of music education, found several issues with those who claimed to carry out action research. Cain observed that, ‘few action research projects are cyclical, deal with aspects of social transformation, or broad historical, political or ideological contexts, and there is little focus on reflexivity’ (p. 283).

Cain advises that, to conduct a comprehensive action research project that generates reliable findings, researchers need a thorough understanding of the approach, the literature around it and the data analytical procedures most suited to it. Building on the work of Cain (2008) this research ensures its academic rigor as it is guided by a strong theoretical framework and problematizes and contests the dominant ideologies which have come to dictate how piano is predominantly taught in Ireland. Furthermore, through the implementation and development of three cycles over a substantial three-year period and continual reflection and reflexivity over that time, in addition to the application of a thematic analysis approach to analyse the data, significant changes in my practice, which benefitted both me and my students, could be observed and substantiated in this thesis.

Originality and Contribution to Knowledge

Lennon (1996; Lennon and Reed, 2012), Bridge (2005) and Taaffe (2014) have made noteworthy contributions to piano pedagogy research in Ireland and the UK. However, students' voices have not been heard to any great extent within the Irish, or international, context to date. As students are, arguably, the most important stakeholders in their own education, their voices need to be heard. This research focuses primarily on the student voice and their opinions and experiences of one-to-one piano education, both before, during, and after pedagogical interventions were employed.

This study's contribution to the field is trifold: 1) it proffers a new pedagogical model for piano teaching that is grounded in the evidence from this study and supported by the research literature, 2) it presents new exemplars of theory and practice in action, and 3) the longitudinal methodology employed has not been conducted in the field of piano education heretofore. Furthermore, the research addresses a number of gaps in the literature. Firstly, the application of non-formal musical practices to formal one-to-one piano lessons and the impact these have on students' musical skills, knowledge, and motivation to learn has not been investigated before now. Secondly, most research has focused on the early years of learning an instrument or learning in higher education specialist music courses and conservatoires. This research focuses on the often-overlooked critical intermediate years of learning piano and puts the student voice in the centre of the study as it examines learners' experiences and opinions of the pedagogical approaches implemented. Thirdly, this is the first time self-determination theory is applied specifically within a one-to-one piano education context. Finally, this is the first qualitative longitudinal study that focuses on the same participants over three years of learning piano using an action research design.

In addition to addressing the gaps in knowledge outlined above, this study's primary contribution is through the creation of a new pedagogical model for piano teachers, teacher educators, examination boards, and policy makers. The model is informed by the findings from the action research and interview data and is supported by the work and theories of leading scholars in the fields of music education and educational psychology. In addition, it provides a strong evidence-

base for the inclusion of non-formal pedagogical practices in the one-to-one piano lesson. It is a flexible model that illustrates a range of complementary pedagogical approaches that teachers can implement and adapt to their lesson content and their student's learning needs as needed. Through the implementation of a range of these approaches, the aim of the model is to create motivated and engaged learners with the musical skills to partake in lifelong independent learning. This model is presented and discussed in detail in Chapter Nine.

Finally, this research provides three case studies which will help readers gain a deeper understanding of the approaches implemented, how they were developed and refined, and how my teaching and the students learning developed overtime because of these approaches. It is envisaged that the cases will provide student teachers, and experienced teachers looking to inform and develop their own practice, valuable, real-world, highly-contextualised accounts of both exemplary and sub-optimal teaching and learning in the one-to-one piano lesson; contributing to the enhancement of pedagogical content knowledge (Shulman, 1986).

Thesis Overview

In Chapter One the background and rationale for this research was presented. The aims and objectives, research questions, and original contribution to knowledge this research offers were identified and discussed, and my teaching philosophy was shared. Chapter Two provides a critical review of relevant literature in the field of music education which supported this study and the pedagogical approaches implemented. Chapter Three examines the theoretical framework that underpins this research, specifically Ryan and Deci's (2017) Self-Determination Theory and Bruner's (1961; 1966) Scaffolding of Learning and Discovery Learning Theories, among a number of others. These theories focus primarily on motivation, cognitive development, and musical development, and will be found throughout the data analysis, findings, and discussion chapters.

In Chapter Four the methodology and research design employed to investigate the research questions is presented. This includes a rationale for the qualitative methods employed; why action

research, semi-structured interviews with student participants and their parents, and the recording of lessons was necessary to explore and develop an answer to the research problems outlined in this chapter. In addition, the development of each cycle of action research, the data analysis process and all ethical considerations are discussed.

Three case studies are presented in Chapters Five, Six and Seven: Ann, David, and Rita, respectively. These case studies concentrate on significant teaching and learning moments and demonstrate the students' musical development and learning experiences over the three years of data collection with the support of audio recordings. Moreover, the case studies illustrate the three key findings from the data: 1) how combining formal and non-formal pedagogical approaches can positively impact independent learning, and musical knowledge and skills; 2) how an optimal learning environment may be created through structure, strategy, and a discovery learning approach; and 3) how motivation and engagement can be enhanced through autonomy- and competence-support.

The presentation of the case studies is followed by Chapter Eight which focuses on the student voice and the findings from the interview data. An overview of the six participants' piano education is provided for context, and their opinions on the approaches employed, their perceived musical development and overall learning experiences from the beginning of their piano education to the end of this study is discussed. A new pedagogical model for piano educators, which emerged from the findings from the study, and informed by the literature outlined in Chapters Two and Three, is presented in Chapter Nine. This model aims to enhance teaching and learning in the one-to-one piano lesson through the implementation of a variety of pedagogical approaches, both formal and non-formal. These approaches are found to develop students' musical knowledge and skills, engagement, and motivation to learn, and propensity to partake in independent learning.

Finally, Chapter Ten summarises and discusses the key themes and findings from the data collection and how these answer the research questions. Recommendations and implications for practitioners, limitations of the research and suggestions for future research is considered.

CHAPTER 2 - LITERATURE

Introduction

Before investigating alternative pedagogical approaches in the one-to-one piano lesson and the impact of these on students' musical knowledge, skills, engagement, and motivation, it was essential to examine relevant areas in the literature to identify where research gaps might lie or where further research could advance new knowledge in this area. Therefore, this chapter examines pertinent literature on a range of themes emerging from the research questions. In particular, the literature search process narrowed in on the following key themes: attrition/dropping out; motivation for learning; the student-teacher-parent relationship; lifelong learning; instrumental teaching and learning strategies; formal vs informal teaching and learning practices; Lucy Green's Hear, Listen, Play (HeLP) strategy; Simultaneous Learning; the potential and limitations of summative assessment; Swanwick and Tillman's theory of musical development; national and international perspectives on piano pedagogy; and the potential and limitations of summative assessment.

Attrition/Dropping out

Piano lessons tend to have a high attrition rate, particularly in the early years of attending lessons (Evans, McPherson and Davidson, 2013; Gerelus *et al.*, 2020; McPherson, 2005; 2006). While no formal studies have been conducted on dropout rates for piano students, Evans McPherson and Davidson (2013) found that, ten years after beginning a school band programme, 84% of the students in their study no longer played their instrument, although some took up a different instrument in that time. King (2016) listed high percentages stated by other authors in her study, with one statistic she found on a piano teaching blog stating that 95% of piano students drop out in the beginning stages of lessons. However, while it is certain the percentage of those who drop out of

piano lessons and cease playing is significantly high, there was no evidence to back this percentage up.

Research citing the primary reasons for students dropping out of instrumental lessons include low musical achievement and/or a perceived lack of musical ability, or competence, (Costa-Giomi, 2004; Costa-Giomi, Flowers and Sasaki, 2005; Evans, McPherson and Davidson, 2013; Hallam, 1998), lack of choice, or autonomy, in what they were learning (Evans, McPherson and Davidson, 2013), lack of practice or good practice strategies (McPherson, 2006), lack of enjoyment and reported feelings of boredom (Evans, McPherson and Davidson, 2013; Mackworth-Young, 1990), competing activities such as sports (Govel, 2004; Williams, 2002), parental support, or lack thereof (Govel, 2004) and a negative relationship with their teacher (Evans, McPherson and Davidson, 2013; Govel, 2004; Williams, 2002).

What Defines a 'Dropout'?

While most studies in this area defined a dropout as those who ceased lessons over the duration of their investigation (Costa-Giomi, Flowers and Sasaki, 2005; Evans, McPherson and Davidson, 2013; Pitts, Davidson and McPherson, 2000), and others provided a vague description such as 'reaching their full potential' (Govel, 2004, p. 12), both Gerelus *et al.* (2020) and King (2016) defined a dropout as someone who does not get to Grade 8 level in the Royal Conservatory of Music piano examinations; this appears to be the equivalent of Grade 7 piano in the Irish and UK examination boards (RIAM, ABRSM, LCM). Gerelus *et al.* (2020) stated that 'failing to reach this level means students lack the technique and interpretation necessary for playing the piano and that they would have an incomplete understanding of composers, theory, and history in the Western art music tradition' (p. 46), and equate this to the definition given for a high school dropout in Canada.

Differences Between Those Who Stop and Those Who Continue

Costa-Giomi, Flowers, and Sasaki (2005) investigated behavioural differences in children who dropped out of piano lessons and those who continued, within the first three years of lessons. They discovered that those who continued attending lessons demonstrated increased levels of musical and social independence, while those who dropped out looked for significantly more reassurance and validation from their teacher when partaking in lessons.

Evans, McPherson and Davidson (2013) looked at the same topic, but over a substantially longer, ten-year period, and with a focus on motivation and engagement. They found that the reasons given for dropping out included a feeling of lacking musical ability or choice in what they were learning; that they were not sufficiently challenged; that they were forced to play by their parents; or that a negative relationship with their teacher or instructor was the reason they dropped out. In contrast, those who remained engaged reported feelings of autonomy, competence, and relatedness throughout their learning. The findings from this study and its importance in relation to this study are discussed in more detail in Chapter Three.

Ceasing Independent Learning and Playing

These studies made an important contribution to the field of instrumental music education by providing insight into student dropout, and possible ways of keeping students engaged with formal learning for longer. However, they appear to place more importance on students staying in formal education rather than how these students can gain the necessary skills to maintain an active engagement with lifelong music making and listening.

Pitts (2012) and Pitts and Robinson (2016) looked at dropout from a different perspective and noted the impact music education has on people sustaining a lifelong engagement with music and maintaining active participation in ensembles. However, no study has looked at adults dropping out from independently playing and learning piano after they cease piano lessons. As discussed earlier, the research indicates that a low percentage of students get to a proficient level of musical

competence before dropping out. If this is the case, it is likely that the number that continue after formal lessons significantly decrease again after this milestone. There is no guarantee that those who reach a high standard, such as those in Kings (2016) research, will continue to play after they cease lessons, and may lack the skills or motivation to partake in independent learning. Therefore, it is important to investigate and determine the skills required for lifelong learning and strategies to enhance student motivation and independence from the beginning of a student's piano education in an effort to address these high dropout rates.

Motivation for Learning

Motivation - The Role of the Teacher

Hallam (1998) observed that 'learning can only be undertaken by the learner' (p. 125). As teachers cannot learn for their students, as much as they might wish to do so, there are several ways teachers can support their students and help them learn and develop as musicians. In the US, motivating students has continually been one of the primary teaching skills, both experienced and novice piano teachers, wish to learn more about and improve in their own practice (Music Teachers National Association, 1990; Schons, 2005; Slawsky, 2011).

Motivating students to learn and see value in what they are learning is an essential skill for a teacher (Hallam, 1998). Research shows that intrinsically motivated students, i.e., those who inherently enjoy learning their instrument, are more likely to sustain engagement in learning activities and achieve successful learning outcomes than those who are not (Comeau *et al.*, 2019; Hallam, 1998; Gerelus *et al.*, 2020; Ryan and Deci, 2017; 2020), and that teachers can have the greatest influence over students developing intrinsic motivation (Chirkov and Ryan, 2001; Ryan and Deci, 2017). Instrumental music teachers have an additional advantage, in comparison with classroom music teachers, as they have a more direct role in their students education, and therefore can significantly impact their musical development and motivation to learn (Pitts, 2012).

Increasing Motivation Through Engagement and Meeting Students' 'Basic Psychological Needs'

Following on from the research of Evans, McPherson and Davidson (2013), Evans (2015) provided a more comprehensive guide to assist music educators in maintaining student engagement in learning; supporting the fulfillment of their basic psychological needs, and helping students to internalise their motivation to learn. Competence-supporting behaviours, according to Evans, include a) encouraging a growth mindset, b) teaching good practice strategies, and c) praising effort and students' approaches to learning and practicing. Conversely, competence-thwarting behaviours include focusing on examination and competition outcomes, making comparisons with peers, and maintaining perfectionistic standards.

To support student autonomy, Evans (2015) highlighted the importance of providing a rationale for each activity, giving choice of repertoire and activities, and encouraging students to develop their own learning goals. Students having choice over the repertoire they learn in their instrumental lessons, and feeling that they have control over their learning has been linked to enhanced motivation and engagement in learning (Evans, McPherson and Davidson, 2013; Evans, 2015; Gerelus *et al.*, 2020; Ryan and Deci, 2017). To ensure teachers do not undermine student autonomy it is suggested not to use rewards or punishments to control behaviour, as these put pressure on students to perform, or determine what and how everything must be learned (Evans, 2015). Finally, to assist with relatedness, develop a warm, equal relationship built on understanding and trust, acknowledge the importance of peers and friends in students' learning, and take student's feelings into account during each lesson.

Other factors found in the literature to enhance student motivation are teachers using a student-centred approach to learning, teacher enthusiasm, and the provision of meaningful, positive feedback (Mackworth-Young, 1990). Mackworth-Young's (1990) action research study, which employed three different lesson styles over ten weeks, found that student-centred piano lessons were more enjoyable and motivating overall for students. However, many scholars in educational and cognitive psychology, among other fields, have been advocating for a student-centred approach

to learning for decades, so Mackworth-Young's findings were not surprising. A teacher's enthusiasm for music, or a specific piece of music or activity can have a positive impact on student motivation as enthusiasm is found to be infectious (Hallam, 1998; Pitts, 2012). Finally, feedback is also noted as being beneficial for building motivation, on condition that it is meaningful, positive, and constructive (Ryan and Deci, 2017).

The Student-Teacher-Parent Relationship

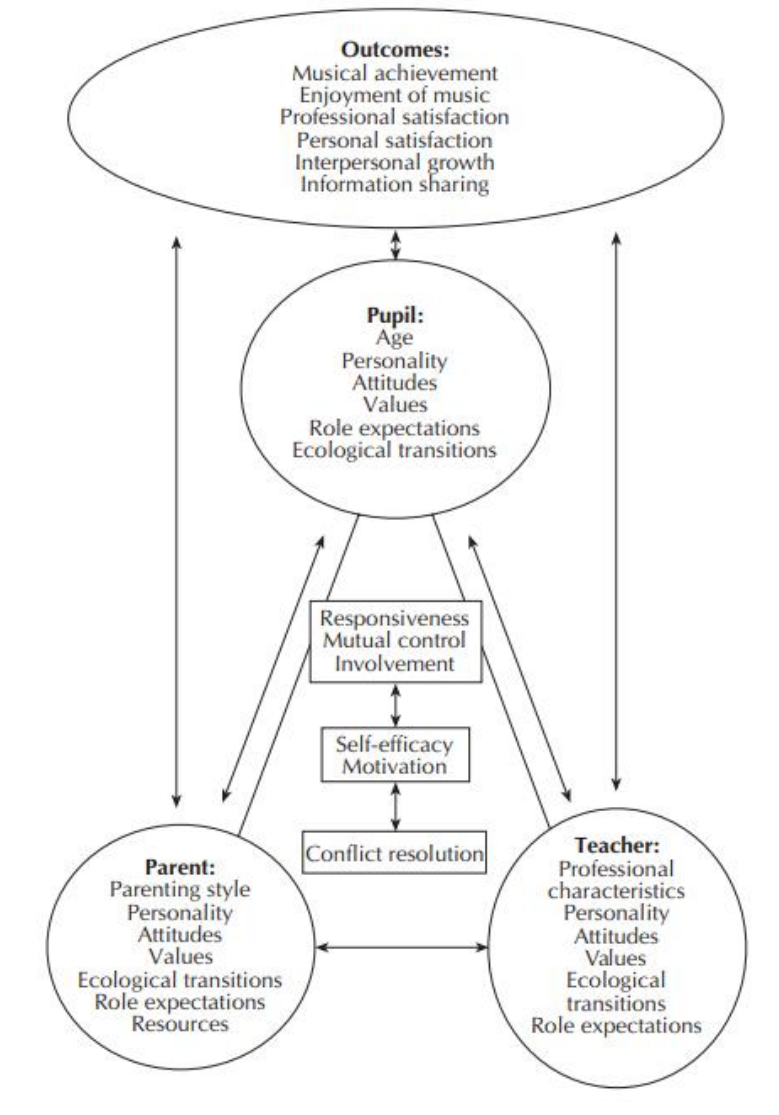
Students are key stakeholders in their own learning, and it is important that their needs and goals are acknowledged by the teacher and parent (Creech and Hallam; Pitts and Davidson, 2000; Ryan and Deci, 2017). However, the teacher and parent(s) also play vital roles in the students' development (Chirkov and Ryan, 2001; Ryan and Deci, 2017). As discussed earlier, some of the primary reasons found for student dropout is lack of parental support (Govel, 2004), being forced to play by their parents, and therefore feeling a lack of autonomy over their learning (Evans, McPherson and Davidson, 2013), and having a negative student-teacher relationship (Evans, McPherson and Davidson, 2013; Govel, 2004; Williams, 2002). These findings demonstrate the detrimental effect parent and teacher behaviour, and actions, can potentially have on students learning.

Fortunately, many studies have examined the impact teachers and parents can have on student learning outcomes and have found several behaviours that can have a positive impact on learning, motivation, and enjoyment. These behaviours include building a positive student-teacher relationship (Creech and Hallam, 2011; Evans, McPherson and Davidson, 2013; Govel, 2004; Upitis *et al.*, 2017; Williams, 2002), teachers taking a student-centred approach (Creech and Hallam, 2011; Ryan and Deci, 2017), and parental support and involvement in practice sessions (Comeau, Huta and Liu, 2015; Upitis *et al.*, 2017). Comeau, Huta and Liu (2015), who examined and compared Chinese and North American Caucasian piano students in relation to their work ethic, motivation, and parental support, made additional suggestions, specifically with the aim to enhance

student engagement and performance. These included adopting a philosophy of seeing musical success ‘as a matter of the time and effort invested’, and to create conditions, both at home and in the lesson, ‘where music is seen as an integral and enjoyable part of the child’s life’ (p. 191).

The dynamics of the parent-student-teacher relationship has a ‘powerful influence’ on students’ learning experiences (Creech and Hallam, 2011, p. 102). After conducting a literature review on student-teacher-parent interaction, Creech and Hallam (2003) developed a model (See Figure 2.1) that illustrates the student-teacher-parent ‘microsystem’ and how these three individuals interact with one another within a music learning context. This model explains how the ‘many complex variables of human behaviour and communication work together’ (Creech and Hallam, 2003, p. 40) and, more pertinently, how any changes in these variables, such as including the parent in more decision-making, or employing different teaching approaches, can positively influence student learning outcomes. In summary, they encourage parents and teachers to work together and create partnerships that support the student’s learning and develops their autonomy, motivation, and engagement in learning and playing their instrument. Moreover, this model highlights the important roles both the teacher and parents play in a child’s instrumental music education.

Figure 2.1. The interaction of human variables within a musical context (Creech and Hallam, 2003, p. 40)



Lifelong Learning

Research has proven that there are substantial benefits to a lifelong engagement with active music making and listening (Hallam, Creech *et al.*, 2012; Pitts, 2012; Pitts and Robinson, 2016; Seinfeld *et al.*, 2013). Pitts & Robinson (2016) listed some of these primary benefits, such as enhanced ‘personal wellbeing, social integration, and musical challenge and satisfaction’ (p. 327). Although most research in lifelong music learning focuses on adult participation in ensembles (For example Pitts and Robinson, 2016; Hallam, Creech *et al.*, 2012), some studies which looked at the impact of learning piano found many benefits such as increased wellbeing (Costa-Giomi, 2004) and executive

brain function, in addition to improved focus, motor skills and physical health (Seinfeld *et al.*, 2013).

Pitts and Robinson (2016) questioned, with so many benefits documented, why so few people continue to partake in such musical activities when they are adults? Reasons for children and adolescents dropping out of formal lessons is relatively well documented (Costa-Giomi, 2004; Costa-Giomi, Flowers and Sasaki, 2005; Evans, McPherson and Davidson, 2013; Govel, 2004; Hallam, 1998; King, 2016; Mackworth-Young, 1990), as discussed in detail previously. However, Pitts and Robinson's (2016) 'cultural value' project focused on adults who attempted to continue playing after formal music lessons but who were unable to sustain their participation in active music making. Like previous studies on student dropouts, Pitts and Robinson (2016) found that motivation played a significant role in a person's choice to continue playing, in addition to the negative impact of competing activities, which seem to become a bigger issue in adulthood as family and work responsibilities increase.

The Role of Formal Education

Pitts and Robinson (2016) found that music education played a crucial role in preparing students for lifelong learning in music. The participants who had ceased participation, 'expressed a sense of having acquired the 'wrong' skills for continued participation, and needing 'more skills – not this exam stuff', referring to the formal education they had experienced (Pitts and Robinson, 2016, p. 341). These insights into the reasons adults cease playing demonstrate the need for teachers to take more responsibility in preparing students for lifelong learning and engagement with music.

With regards to music education and its purpose, Froehlich (2007) questioned:

Is the purpose of school music instruction to pass on cultural norms and values of past generations for the purpose of preserving what is considered today's cultural heritage, or is the purpose to prepare tomorrow's generations for engaging in music making and listening as lifelong pursuits?

(Froehlich, 2007, p. 18)

Although Froehlich specified school music here, the same question can be asked of instrumental music education. However, the answer is not simply one or the other. Ideally instrumental music education, and school music, should encapsulate both aims to create well-rounded, competent, and independent musicians; looking to the music of past composers and learning Western classical music practices and conventions, while also engaging with the diverse musical interests and goals of twenty-first century students (Lennon and Reed, 2012). This includes formal education which provides students with the musical knowledge and skills to partake in ensembles, or learning to play classical music, where reading music is a prerequisite, while also providing them with the informal skills to partake in active music making in more informal settings, either individually at home, or socially in groups with their peers.

What Can Teachers Do to Promote Lifelong Learning?

Elliot and Silverman (2017) recommend that teachers employ ‘numerous creative teaching strategies’, and to ‘guide and empower—*not* dominate—students’ creative development toward life-long amateurism’ (p. 130). Jørgensen (2000) found that, in addition to instrumental teachers being seemingly ‘too dominating in lessons, thereby limiting the students’ opportunity to develop independence...’ (p. 73), the majority of students in higher education instrumental music courses – students who had been learning their instrument for years and had reached an advanced level, had developed limited or ineffective learning strategies, and gained little or no input or advice from their teachers on this at any stage in their learning. Jørgensen (2000) suggests that discussing and observing practice in the lesson is essential for developing students’ independence.

Like Jørgensen (2000), Mackworth-Young (1990) and Hallam (1995; 1998) noted that there appeared to be a lack of interest among instrumental teachers, in their research, to encourage independence and autonomy in students. Furthermore, they observed that teachers did not see developing intellectual musical knowledge as part of their role; this was considered the role of the classroom music teacher, while the instrumental teacher focused on performance skills. However,

Hallam (1998) noted that, although it is ‘a relatively neglected area of teaching in instrumental music’, it is essential that students are taught how to learn and that teachers need to address this (p. 239).

Mayer (2002) observed that meaningful learning is achieved through promoting ‘retention’ and ‘transfer’ in students (p. 226), i.e., teaching them how to use their learned knowledge and skills, and apply them to new learning situations and to solve new problems. The problem-solving skills developed in this way are essential for partaking in independent lifelong learning as students are equipped to adapt to new learning situations and, as they build on and make connections with previous knowledge, they discover new knowledge for themselves (Bruner, 1961; Pitman and Broomhall, 2009).

Instrumental Teaching and Learning Strategies

Cheng and Durrant (2007) noted that there is a tendency to evaluate instrumental teaching on students’ performance and graded examination results but argue that this is a limited view of teaching and that ‘we need to open our minds to look for the true value of the teaching and learning process’ (p. 193). According to Young, Burwell and Pickup (2003), who found that ‘command-style’ teaching strategies were prevalent in their Higher Education music department in the UK (p. 139), understanding the impact teaching strategies can have on teaching and learning ‘could provide a clear foundation upon which to build models for effectiveness in music teaching’ (p. 142).

What makes an effective teacher is a complex area, and no definitive framework for effective teaching strategies in instrumental lessons has been established to date. Yet, the ‘command-style’, described by Young, Burwell and Pickup (2003) as being a direct, teacher-led strategy of delivering instructions to students, and one that is related to the ‘master-apprentice’ style model of instruction, is not encouraged. In addition to discouraging the over-use of teacher-led strategies, there is a consensus in the literature that several teaching strategies have been found beneficial for students, such as excellent communication skills on the part of the teacher and the use

of student-teacher dialogue (Burwell, 2005; Cheng and Durrant, 2007; Creech and Hallam, 2003; Mackworth-Young, 1990).

Mackworth-Young (1990) stated that dialogue between teacher and student can increase engagement, motivation, and relatedness, and make learning a more enjoyable experience. Burwell (2005) noted that the use of questions can lead to genuine student-teacher dialogue and should be used as a strategy to help promote independent thinkers. She encourages teachers to ask exploratory questions, and to give students time and encouragement to answer these questions. She provided, from her lesson transcripts, some examples of excellent student-teacher dialogue, where the teacher encouraged the student to think for themselves using carefully worded questions, which, as one student described in her interview, scaffolded her learning, and enhanced her problem-solving skills. However, Burwell also found that many of the questions teachers asked, ‘are not questions at all’, but an instruction disguised as a question, ‘perhaps in order to soften the commanding impression they might otherwise give’ (p. 204). She gives examples of rhetorical questions, those that elicit an automatic response such as ‘yes’, or a performed response such as singing or playing, and exploratory questions in which the teacher ends up answering themselves – a common occurrence in her lesson observations. These examples illustrated the difference between effective and non-effective types of questioning.

Carey, Harrison and Dwyer (2017) found, in their study of first-year, third-level music students, that the use of reflective journals and ‘prompt questions’ can help promote student-teacher dialogue and collaborative learning and encourage discussions around areas such as student learning goals, which some participants felt may not have occurred otherwise. Furthermore, according to the student participants, the use of journalling and discussions with their teacher provided them with a better understanding of what was required of them at university level.

In addition to student-teacher dialogue and questioning, the inclusion of parents and students in decision-making processes (Creech and Hallam, 2003), the provision of information and support (Burwell, 2005), and scaffolding learning and structuring lessons so students are met at their own

level (Burwell, 2005; Evans, 2015) were also deemed to be important strategies for effective teaching. These are discussed in more detail in the following section.

Creating Autonomous and Independent Learners

As previously mentioned, creating autonomous and independent thinkers and learners did not seem important to some instrumental teachers cited in the literature (Hallam, 1995; 1998; Jørgensen, 2000; Mackworth-Young, 1990). However, the subject arose numerous times in studies of instrumental music teachers in third-level settings. These teachers explained how they viewed this as an important role for a teacher in their position (Burwell, 2005; Carey, Harrison and Dwyer, 2017; Carey and Grant, 2015; Gaunt, 2008; Persson, 1996).

Burwell (2005) found that the development of students into independent musicians is impacted by numerous factors, including their musical background, previous learning experiences, learning style, stage of development, and their personality. She also stated that ‘undergraduate training represents a crucial stage of development for instrumentalists, including singers, as they begin to mature as independent musicians and learners’ (p. 199), and that these students need to be guided towards taking control of their own learning.

Despite the importance many teachers placed on creating independent and autonomous students, on analysis, few scholars found instances of teaching strategies being employed that encourage this development in students. For example, one teacher participant, in Gaunt’s (2008) study, discussed teaching two students who became very successful performers, and who he taught to be independent thinkers, yet also spoke about how they still return for lessons with him, which would make one question how independent they were? Furthermore, although this teacher discussed how he encouraged students to ‘think of themselves’ (Gaunt, 2008, p. 222), Gaunt found there was little evidence of this in his descriptions of his lessons, and that the strategies discussed by most participants in her study left ‘relatively little space for the student’s own voice and ownership of the

learning process' (p. 239). This observation was confirmed by the students of these teachers, outlined in Gaunt (2009).

Similarly, in the teaching of younger instrumental students, Evans (2015) highlighted the prevalent style of teaching in the one-to-one instrumental studio that follows the Western classical music tradition, which he noted does not employ autonomy-supportive teaching practices, encourages compliance over creativity, and does not allow for students to have any ownership over their learning. In addition, Evans, McPherson and Davidson (2013) contended that 'typical studio teaching strategies often involve prescribing extensive playing of scales without a rationale, placing an overemphasis on graded examinations, and focusing on repertoire completely determined by the teacher' (p. 614), none of which supports autonomous or independent learning.

Despite the lack of observational accounts of effective teaching strategies being employed, Gaunt (2008) recorded several useful strategies reportedly used by the teachers in her study to facilitate autonomous learning (p. 224):

- Exploring alternative interpretations of musical ideas, including improvising (8 teachers)
- Not spoon-feeding students (9 teachers)
- Relating different aspects of the work; facilitating integration of learning (2 teachers)
- Engaging students in critical reflection on their work (2 teachers)
- Allowing students time to think and come up with their own solutions and ideas (2 teachers)
- Drawing parallels between teacher and student in terms of learning pathway (2 teachers)
- Encouraging students to engage in learning in contexts other than the one-to-one lesson and personal practice (7 teachers)

These strategies, if employed, have the potential to be beneficial for students' development into autonomous learners and independent thinkers.

The Importance of Structure and Strategy in Educational Settings

Numerous psychologists and scholars, as discussed in the section above on motivation, have established that autonomy is central to people's cognitive development, motivation, and well-being (Jang, Reeve and Deci, 2010; Comeau *et al.*, 2019; Ryan and Deci, 2017). Some previous studies on

student engagement and autonomy have cited structure as being antagonistic or opposite to autonomy-support (Daniels and Bizar, 1998; deCharms, 1984). However, SDT argues that this is only when structure is provided in a controlling manner and that structure, when used in autonomy-supportive ways, can further enhance student outcomes and create an optimal learning environment for engagement (Jang, Reeve and Deci, 2010; Ryan and Deci, 2017; 2020). SDT highlights the importance of providing structure in numerous settings, particularly in education; supporting students through well-managed learning environments and activities (Ryan and Deci, 2017; 2020).

According to SDT (Jang, Reeve and Deci, 2010, pp. 589-590) autonomy-supportive structure involves teachers:

- clearly communicating expectations and directions
- taking the lead during some instructional activities
- providing strong guidance during the lesson
- providing step-by-step directions when needed
- scheduling student activities
- marking the boundaries of activities
- orchestrating the transitions between them
- offering task-focused and personal control-enhancing feedback
- providing consistency in the lesson

This, according to Jang, Reeve and Deci (2010), maintains student engagement by keeping them on task, manages their behaviour and gives them a sense of control over their educational outcomes. Furthermore, teacher-provided structure and guidance scaffolds students' learning and ensures they predominantly face optimal-challenges and meet their learning goals and objectives; assisting them to master a specific topic and develop feelings of competence (Ryan and Deci, 2017). To summarise, 'teachers seeking engagement-fostering instructional strategies need not choose between providing autonomy support or structure but, instead, can focus their instructional energies on providing autonomy support and structure' (Jang, Reeve and Deci, 2010, p. 597)

Practice and Self-Regulation Strategies

The Role of Practice in Learning a Musical Instrument

Practice is an area that has been widely researched and found to be a necessary part of learning a musical instrument (Burwell and Shipton, 2013; Evans, 2015; Evans, McPherson and Davidson, 2013; Hallam, 1998; Hallam, Rinta, *et al.*, 2012; Pitts and Davidson, 2000). It has been linked to factors such as motivation and musical ability (Burwell and Shipton, 2013; Evans, 2015; Evans, McPherson and Davidson, 2013; Pitts and Davidson, 2000), and is used to develop a range of technical, cognitive, aural and performance skills (Hallam, 1998). Hallam (1998) outlined several practice activities that relate to developing these skills, as follows:

- Technical skills
 - Warming up
 - Repetitive technical work (to develop automaticity, consolidate or maintain technique)
 - Scale or exercise practice
 - Analyzing and finding solutions to technical problems
- Cognitive skills
 - Learning to read music
 - Development of sight reading skills
 - Development of analytical skills
- Aural skills
 - Development of aural and critical listening skills
 - Playing by ear
 - Improvisation
- Performance skills
 - Preparation of a previously unlearned piece
 - Revision of a previously learned piece
 - Development of interpretation
 - Memorization of a piece
 - Preparing for performance itself (p. 137)

Interestingly, it has been established, that most students, including advanced third-level music students, do not have effective practice strategies, and do not question how they practice (Burwell and Shipton, 2013). Pitts and Davidson (2000) found that ‘the majority (of students) display few self-correction techniques, and play through their pieces or exercises with little discernible self-

evaluation' (p. 46). This, Pike (2017b) explains, can result in learning and progress only occurring during lesson time, with little progress made during the week. Burwell and Shipton (2013) discovered, among their advanced instrumental students attending a third-level music course, that 'knowledge of specific practice strategies was patchy; evidence of prior knowledge of strategies tended to be limited to technical development, and this rarely included effective self-evaluation, and the knowledge of strategies for addressing issues that arose in repertoire was generally poor' (p. 342).

Strategies for Effective Practice

Hallam (1998) defines effective musical practice as 'that which achieves the desired end product, in as short a time as possible, without interfering with longer term goals' (p. 142), noting that this could mean different things for a beginner or advanced pupil. Strategies for effective practice, according to Hallam, can be categorised as either 'task oriented strategies' or 'person oriented strategies'. For beginners, listening to the sounds and music they are trying to emulate and the use of repetition to develop automaticity in their playing are most important. While repetition alone is not considered an effective practice strategy at advanced level, it is seen as an important strategy at the early stages of learning (Hallam, 1998). The teacher plays a vital role in these early stages of learning as a model for the student and demonstrating what is to be learned and practised by the student at home.

As students advance, more effective practice strategies can develop, and students can take more control of the strategies they employ. These include analysing the music and identifying difficult sections that require more attention. The student can then identify the best strategy for tackling these problems such as repetition, using a metronome, or creating exercises around the section of music they are working on, among others, which will be listed below. Person oriented strategies 'are those which support learners in their practice' (p. 149). This includes setting a regular

time for practice each day, and setting clear, manageable goals for each practice session (Hallam, 1998).

Although it was found that many students do not have effective practice strategies, Pitts and Davidson (2000) noted that the students who imitated the structure and strategies used by their teacher in their lessons were more likely to be efficient in their practice. Furthermore, Hallam, Rinta, *et al.* (2012) found that student expertise and the amount of time spent practising each day increased concurrently overtime. They noted decreasing trends, as student-expertise increased, for statements relating to

- practising pieces from beginning to end without stopping
- working things out just by looking at the music and not playing
- trying to find out what a piece sounds like before beginning to try to play it
- analyzing the structure of a piece before learning to play it
- when making a mistake going back to the beginning and starting again
- making a list of what to practise; and setting targets for each practice session

And increasing trends for

- identifying difficult sections
- practising small sections
- doing warm-up exercises
- getting recordings of a piece that is being learned
- starting practice with studies
- practising things slowly
- knowing when a mistake has been made
- when making a mistake, practising a section slowly
- when something was difficult playing it over and over again
- marking things on the part
- practising with a metronome
- starting practice with scales
- recording practice and listening to the tapes
- thinking about how to interpret the music (p. 659)

This second list, above, provides a list of effective practice strategies students can use at home.

In addition to these trends, Hallam, Rinta, *et al.* (2012), after analysing the use of practice strategies, from beginner to advanced students, discovered some other interesting results. In particular, they found that some intermediate students, around Grade 3 standard, were ‘unable or unwilling to change their approach as the content of what they are learning becomes more complex and difficult’ (p. 670); these students did not adopt new, more effective practice strategies. This further highlights the importance of teacher-support in adopting effective strategies for practice and self-regulation, at this early intermediate stage of learning, in particular.

Zimmermann’s (2000) three-phase model of self-regulation has been used by several scholars to identify and inform the strategies used by students during learning and practising (McPherson *et al.*, 2017; Pike 2017a; 2017b). The three phases are:

1. Forethought, which includes goal setting, planning, and intrinsic motivation
2. Performance or volitional control, including self-control, self-instruction, focus on the task, and self-observation
3. Self-reflection, which includes self-evaluation, attribution, and reactions (Zimmermann, 2000, p. 16).

By moving through these three phases during each new challenge faced, research has shown that students can self-regulate their own learning (Ellis, 2018; McPherson *et al.*, 2017; Zimmerman, 2000) and their practice can become more focused (McPherson *et al.*, 2017).

Another way of promoting and assessing students’ strategies for both practice and self-regulation is using practice maps and self-reflection. Ellis (2018) used practice maps with her violin students, aged 10-13 years old, to encourage ‘deliberate and self-regulated practice’, and get an insight into ‘the work strategies that pupils chose or created’ (p. 75). This form of documentation, according to Ellis, revealed the following:

- Pupils’ thoughts about practice generally
- Pupil propensity towards engaging in the weekly task of documenting their reflections on practice
- What pupils chose as focal points

- The types of strategies pupils designed and used
- Pupil analysis of practice (p. 75).

Ellis (2018) found that, by using practice maps, students ‘focused their practice on areas of control and accuracy, expressivity, and physical presentation and used a combination of both task-management and mental energy strategies’ (p. 163). Moreover, the process demonstrated that students could reflect on their work both clearly and honestly and identify areas that needed attention. Ellis noted that, through reflecting on their own practice and performances, and the performances of their peers, her students demonstrated increased confidence, autonomy, and agency over the course of her study. This was demonstrated ‘by deliberately using each other’s language, lengthening their verbal reflections, or contributing comments without my prompting or guidance’, in addition to an increased willingness ‘to voice and share their opinions’ (Ellis, 2018, p. 200).

In addition to these positive findings, Ellis discovered that some students found it difficult to identify effective strategies for approaching difficult passages in the music and needed advice and guidance from their teacher to help develop their independent thinking and problem-solving skills in this area. This finding supports the literature that highlights the importance of teachers encouraging the development of effective practice strategies (Burwell and Shipton, 2013; Hallam, 1998; Hallam, Rinta, *et al.*, 2012; Jørgensen, 2000; Pitts and Davidson, 2000) and the use of student self-reflection in the lesson (Pike, 2017a).

How To Support Effective Practice and Self-Regulation Strategies

The case studies in Pitts and Davidson’s (2000) study highlighted the ‘sheer tedium and frustration that can result when children have no clear idea of why and how they should be learning’ (p. 54) and prompted the need for teachers to systematically teach their students effective practice strategies to help prevent such negative learning experiences. The research has illustrated that many instrumental students, at all levels, are not sufficiently taught how to approach practice at home, and many stated that do not enjoy practising, but do it because they were told by teachers or parents that they must (Pitts and Davidson, 2000). The uncertainty around practice goals and the focus on

external motivators can cause many issues including decreases in intrinsic motivation and perceived ability, and students dropping out at critical stages of learning (Evans, McPherson and Davidson, 2013; Hallam, Rinta, *et al.*, 2012). Pitts and Davidson (2000) warn that ‘simply telling children to practise is not sufficient to foster the motivational resources that they will need if they are to make significant progress’ (p. 45).

Further issues in the structure of ‘typical’ instrumental lessons have also been highlighted in the literature which may be attributed to the lack of importance placed on teaching effective practice strategies. This is attributed to the responsive approach often employed in instrumental lessons which means that the use of ineffective practice strategies at home may not be apparent and ‘might not present itself as a specific problem during a lesson’ (Burwell and Shipton, 2013, p. 343). In addition, the lack of reflective communication in the lesson, often put down to time constraints, can impact the strategies students adopt in the practice room (Pike, 2017a).

While there may be many reasons for the evident lack of effective practice strategies in students, it is important now to discuss ways of addressing this issue. According to the literature, the most important way of instilling effective practice strategies in students is through modelling such strategies during lessons (Hallam, 1998; Hallam, Rinta, *et al.*, 2012; Leon-Guerrero, 2008; Pitts and Davidson, 2000), through discussion and reflection (Hallam, 1998; Pike, 2017a; Pitts and Davidson, 2000), and by ‘providing guidance as to how to identify difficult passages’ (Hallam, Rinta, *et al.*, 2012, p. 673). Essentially, showing students how to make the most efficient use of their time at home, how to self-reflect and become aware of problems and inaccuracies in their playing (Pike, 2017a) and learning how to learn (Hallam, 1998; Pitts and Davidson, 2000).

While the importance of structure was discussed in previous sections, Pitts and Davidson (2000) also note the importance of surprise, and encouraging students to vary the way they practice, to maintain interest and engagement. This can include the use of informal practices such as learning pieces by ear (Hallam, Rinta *et al.*, 2012), and improvising ‘by way of a warm-up, to experiment with dynamics and tempi, and to achieve fluency and confidence in their playing by returning to

earlier repertoire' (Pitts and Davidson, 2000, p. 54). It is advised that teachers continually assess student engagement with different learning and practice strategies. This can be achieved, for example, when learning new repertoire; the teacher can ask the student to identify difficult sections and explain how they would approach these during practice. Through student-teacher discussion and further modelling by the teacher, when necessary, the student takes a more active role in the learning process and in their lesson, and, overtime, can develop a range of effective practice and self-regulated strategies including problem recognition, strategy selection and evaluation (Leon-Guerrero, 2008).

Formal Vs Informal Teaching and Learning Practices

Music education has evolved over the centuries and, with the rise of the virtuoso musician and the importance of the composer 'through their [new-found] position of authority' (Allsup, 2010, p. 51) in the mid-nineteenth and twentieth centuries, an elitist and formal approach to instrumental teaching was adopted (Allsup, 2010; Gellrich and Parncutt, 1998). This development in music education, Green (2008) stated, has 'alienated us' from a natural practice of learning music informally, and has left us in a position where we now have to 'teach [informal music learning practices] back to ourselves' (p. 21). Allsup (2010) discussed this evolution in his contribution to *Critical Issues in Music Education*, comparing it to the student-centred approaches that are now encouraged. One particularly beneficial student-centred approach, according to current literature, is the inclusion of informal learning practices in instrumental tuition. This has been found to have a positive effect on students, both in their musical development and motivation to participate in musical activities (Allsup, 2010; Bridge, 2005; Brook, Upitis and Varela, 2017; Flynn and Johnston, 2016; Green, 2002, 2008; Folkestad, 2006; Hallam *et al.*, 2009; McPherson, 2006).

Informal music practices are described in the literature as those used by musicians who learn popular music, predominantly playing by ear or through imitation (Green, 2002, 2008; Robinson, 2012). In informal learning, the learning 'is never organised, has no set objective in terms of

learning outcomes and is never intentional from the learner's standpoint' (Creech, Varvarigou and Hallam, 2020, p. 2). This is the opposite of formal music practices, which are always organised, intentional, and have pre-determined learning outcomes and objectives (Creech, Varvarigou and Hallam, 2020). Formal learning, in a music context, includes activities such as 'reading notation, learning technical exercises [and] performing notated pieces' (Robinson, 2012, p. 361). Although formal and informal learning are two contradictory concepts, or 'two poles of a continuum' (Folkestad, 2006, p. 135), 'non-formal learning' bridges the two.

It is difficult to find two agreeing definitions for non-formal learning, however, Creech, Varvarigou and Hallam's (2020) definition is like my interpretation of the concept and the most relevant for this study. They state that 'non-formal learning is rather organised and can have learning objectives' and 'may occur at the initiative of the individual but also happens as a by-product of more organised activities, whether or not the activities themselves have learning objectives' (p. 3). Moreover, Creech, Varvarigou and Hallam (2020) and Wright (2016) describe the role of the teacher within the non-formal learning context as that of 'facilitator', noting that, through expert facilitation,

learners are empowered through the development of their capacity for self-direction and self-regulation, the celebration of the self and others, and social competencies such as cooperation, communication and interpersonal awareness.

(Creech, Varvarigou and Hallam, 2020, p .7)

Within the context of this study specifically, I take on the role of facilitator during the lesson while students learn new repertoire by ear. Furthermore, prior to each lesson, the learning objectives for the week are set by me, the teacher, such as the student learning new repertoire by ear, and improving their aural awareness, problem-solving and critical thinking skills, independence, and overall musicality. However, the activity, namely learning by ear, is based on informal learning practices, and is not organised and is often unintentional from the learner's standpoint.

While formal methods of teaching have their notable benefits for students' musical development, such as increased musical literacy and technical skills, in the past two decades

scholars have advocated for the importance of informal learning practices outlined above, stating that it is important to formalise our teaching and learning practices (Brook, Uptis and Varela, 2017; Folkestad, 2006; Hallam, 1998; Hallam *et al.*, 2009; Robinson, 2012), with many discussing how formal teaching practices dominate instrumental music education (Burwell, 2005; Creech, Varvarigou and Hallam, 2020; Hallam, 1998), and Flynn and Johnston (2016) arguing that ‘to some, the unquestioned dominance of a classical approach is perceived as a type of cultural oppression’ (p. 38). However, Flynn and Johnston emphasise that, while this dominance of Western classical music is objectionable,

It is equally important to ensure that this classical culture is authentically and positively represented for those learning within that culture, rather than cast aside in a zeal to include what was overlooked in the past. An exclusive trad or rock approach would be equally culturally oppressive.

(Flynn & Johnston, 2016, p. 38)

Creating the ‘Well-Rounded’ Musician

Two recent large studies in the UK (Hallam *et al.*, 2009) and Ireland (Flynn and Johnston, 2016) outline, in detail, the benefits of incorporating informal music practices into group lessons with children and adolescents. Research on Ireland’s national instrumental music education programme ‘Music Generation’ (Flynn and Johnston, 2016) highlights the important role that creative, flexible approaches play in the holistic development of children and young people. In this project, Flynn and Johnston developed the spectrum of performance music education (PME) modes, which are a fluid, interconnected set of modes that learners, of any genre, move through within PME. Flynn and Johnston categorised these modes into three bands: dialogical, participatory, and presentational PME, explaining each band as follows,

- Dialogical PME: a learning interchange between musician and child/young person ‘e.g., a dynamic and engaging instrumental lesson’ (p. 42).
- Participatory PME: a focus on participatory experience in music learning, ‘e.g., an excellent community music initiative, traditional music session or celebratory event’ (p. 42).

- Presentational PME: an audience-focused intention for music learning ‘e.g., performing at a concert, gig, or sharing music online i.e., when music is presented and an audience is involved’ (p. 42).

This spectrum of PME modes provides a valuable framework for the musicians who facilitate learning within Music Generation and support the students in engaging with learning and performing, helping them ‘develop a sense of their possible selves in or through music’ (Flynn and Johnston, 2016, p. 53).

In the UK, Hallam *et al.*’s (2009) research found that students who participated in Musical Futures music lessons, where the informal learning practices of popular musicians was encouraged in classroom music settings, ‘developed a greater range of musical skills’ and demonstrated ‘higher levels of attainment’ (p. 37). They also noted that ‘previously disinterested pupils became engaged’ (p. 33) and most students ‘preferred Musical Futures music lessons to other music lessons in school’ (p. 44). Learning by ear is a strategy which is largely associated with informal learning practices; it is often discussed in one-to-one instrumental music research and compared to learning by reading notation. Green (2002) discussed this throughout *How Popular Musicians Learn*, commenting on how the learning practices of popular musicians; a practice predominantly based on an aural tradition, is ‘indeed more natural than many of those associated with formal education [mainly reading notation]’; comparing learning music by ear to ‘the way in which very young children pick up language’ (p. 100). Robinson (2012) discovered that ‘good technique may be established while learning by ear rather than notation, and while learning a variety of musical styles’ (p. 367). Folkestad (2006) also advocated the benefits of learning by ear, as he explained how this process consists of ‘listening, practising and performing’, sometimes simultaneously (p. 138).

The informal practice of learning by ear is largely associated with popular music and Irish traditional music; two styles of music that are enjoyed by many young students, particularly pop music, as mentioned previously. Brook, Uptis and Varela (2017), another promoter of informal teaching practices, argued that teachers excluding these practices and, instead, ‘incorporating

pedagogical practices that do not align with the goals of their students may limit student interest and engagement' (p. 157). While there are distinct differences between formal and informal practices, it is argued that these should not be a 'dichotomy', but 'two poles of a continuum' (Folkestad, 2006, p. 135).

Brook, Upitis and Varela (2017) investigated how one musician, named Victor, who, although a 'classically trained musician', combined formal and informal practices and modified his teaching to 'accommodate the needs and interests of his students' (p. 154); a similar finding to Green (2002). Victor's aim was to create independent and engaged musicians and for his students to learn how to be 'their own musicians' (Brook, Upitis and Varela, 2017, p. 164). As Allsup said (2010), when discussing Socrates ideas on education, 'education that fosters critical thinking aims to awaken or enliven the student' (p. 42). Interestingly, Victor relied more on informal approaches to achieve this, but stresses the importance of creating a combination of 'formal and informal learning opportunities' in order to allow students to obtain a 'well-rounded' music education (Brook, Upitis and Varela, 2017, p. 164). Students need to learn aurally and by notation to have 'the whole package' (Brook, Upitis and Varela, 2017, p. 162), as they are both important for different purposes (Folkestad, 2006).

Differences in Teaching and Learning Practices

MacIntyre and Potter (2014) compared motivation between a large sample of pianists and guitarists and observed the formal and inflexible approach to teaching piano compared to guitar. They found, most likely because of this learning environment and the culture of grading, etc, within piano education, that pianists are more extrinsically motivated, and although they practised more, they reported feeling less competent overall and less willing to play compared to guitarists. This research highlighted the impact formal and informal learning can have on students and musicians' own perceptions of their musical ability and motivations for learning due to their learning and playing environments. Guitarists appear to have more intrinsic motivation and focus more on playing their

instrument, while pianists maintain extrinsic motivation as they continually focus on learning how to play.

MacIntyre and Potter (2014) investigated two different types of musicians; pianists learning and playing in the western classical music tradition, and guitarists who learned and played popular music. In her doctoral research on bimusicality, Nugent (2018) explored the perceptions, beliefs and practices of students, aged between seventeen and twenties, who learned and performed two distinctly different styles of music – Irish traditional music and Western classical music. On analysis of her case studies, Nugent observed, like MacIntyre and Potter (2014), a fundamental difference in how Irish traditional and Western classical music are orientated, with classical music framed around ‘learning how to play’ (Folkestad, 2006, p. 142), and Irish traditional music, like popular music, more focused around playing. The reason given for this disparity was how students participated in both styles, with learning by ear being an important aspect of traditional music, and how it is ‘orientated towards expanding and playing repertoire’, while classical music teaching and learning focused towards using ‘exercises, scales and studies... to enhance and improve individual technical skill’ (Nugent, 2018, p. 228). However, what was particularly interesting about Nugent’s findings, was many of the participants in her study enjoyed the different emphasis of both styles of music; balancing between the structure and technical proficiency required to play classical music, and the more informal, ‘social-leisure focus’ of traditional music (p. 229).

Both studies resonate with Folkestad’s (2006) writing on formal and informal learning practices, which was mentioned earlier. In his research, Folkestad (2006) identified four key aspects of learning, which are,

1. the ‘situation’, or the context where the learning takes places, i.e., in an educational where ‘someone has taken on the role of ‘teacher’, and thereby defining the others as ‘students’ (Nugent, 2018, p. 30), or more social, community-based context (e.g., an Irish traditional music session)

2. the ‘learning style’, for example learning to play by ear (typically used by popular and Irish traditional musicians) or using written notation (classical music)
3. the ‘ownership’ of the learning, i.e., whether the teacher or learner makes the decisions on the ‘what, how, where and when’ of learning, or the student is in control of their learning
4. the ‘intentionality’, or whether the learning is focused towards ‘how to play’, as western classical music practices are described above, ‘or towards playing’, such as popular and Irish traditional musics tend to be (Folkestad, 2006, p. 142).

As illustrated in the examples and further explanation of each aspect, Folkestad’s four aspects help identify and define formal and informal learning.

The Role of Technology in Informal Learning

Listening to recordings is an essential part of the informal learning practice of popular musicians, and a practice that, Green (2002) suggests, formal instrumental education could benefit greatly from. The act of reproducing what is heard from a recording, as popular musicians do, significantly enhances ones aural and active listening skills. Brook, Upitis and Varela (2017) discussed some additional benefits - helping students with areas such as key, structure, tempi and phrasing, and motivate them to aim for the speed of the recording they listen to, or to dictate songs, particularly when the sheet music is not available (Brook, Upitis and Varela, 2017). Hess (2020) discussed the added benefits of using combined audio and visual resources offered by online platforms such as YouTube. She stated that these videos ‘take informal learning to the next level, as such viewing facilitates easy repetition and physical imitation in a way that previous audio technologies have not’ (Hess, 2020, p. 446)

In addition to the evident ways in which technology can be used, Folkestad (2006) noted the effect computers and technology can have on the students themselves, and how this also affects music teachers. He described how students are now much more musically educated than previous generations because of their exposure to the internet and media, and that students already bring a

knowledge of popular music into the classroom, due to their interest in it. Folkestad's question was 'how do we [as teachers] deal with it?', and, while he intended his study to be discursive, rather than providing answers, he argued that popular music is 'an essential factor of the context of music teaching' (p. 136). As he acknowledged in his concluding paragraphs; 'today the world around is present in school as an alternative arena for knowledge formation and learning' (p. 144). With many studies like this showing students' increased interest, knowledge of, and access to technology and popular music, we can utilise this information as teachers and build upon it to enhance their learning experience; connecting their interests outside of school with their lesson content in school and utilising it to enhance their critical listening skills and their learning approaches.

Lucy Green's HeLP (Hear, Listen, Play) Strategy and How It Developed

Green made a substantial contribution to the research of informal learning practices and has played a key role in informalising music teaching practices, particularly in classroom music, across the UK (Hallam *et al.*, 2009) and internationally (Hewitt, 2018; Wright, 2016). Her first book published, on musical meaning, ideology, and education, was called *Music on Deaf Ears* (Green, 1988), which stemmed from her doctoral research. She went on to write two seminal books (2002; 2008) which explore her research on how popular musicians learn, the relationship between teaching and learning, and how informal learning practices can be integrated into the classroom, and, moreover, how the informal learning practices of popular musicians can positively impact student autonomy, motivation, engagement, and musicality. Green's (2002) book, *How Popular Musicians Learn*, provided an important insight into the world of informal learning practices and, in it, suggested a hypothesis 'that young musicians who acquire their skills and knowledge more through informal learning practices than formal education may be more likely to continue playing music, alone or with others, for enjoyment in later life' (p. 56). She explored this hypothesis further in *Music, Informal Learning and the School: A New Classroom Pedagogy* (2008) where she discusses

her research with secondary school music students in the UK. In this publication, Green identified ‘five fundamental principles’ of informal learning:

1. Learning music that pupils chose for themselves
2. Learning by listening and copying a recording
3. Peer-directed learning without adult guidance
4. Learning in holistic, often haphazard ways with no planned structure of progression
5. Integration of listening, performing, improvising, and composing (Green, 2008, p. 25)

From these publications, and her influential research on informal learning in schools, Green developed the Musical Futures approach. Musical Futures aims to support classroom music teachers with incorporating informal learning into their teaching and allow students to learn the music they engage and identify with, such as popular music. This is achieved through online classroom resources. The Musical Futures approach has been extensively researched in the UK (Hallam *et al.*, 2009), and internationally (Hewitt, 2018; Wright, 2016), with all scholars reporting positive learning outcomes for students, such as increased engagement and greater musical development (Hallam *et al.*, 2009; Hewitt, 2018; Wright, 2016).

The Ear Playing Project (EPP) emerged from the ‘informal learning’ strand of Musical Futures. This involved instrumental students, aged between ten and fourteen years old, learning by ear using audio recordings and no assistance from their teacher, unless necessary (Baker and Green, 2013; Varvarigou, 2014). Green (2009) describes the EPP strategy in the following way,

The balance is towards the aural more than the informal. Students are learning to play by copying music aurally, and the teacher takes a slightly less directive role than usual, but gives guidance when needed.

(Green, 2009, p. 124).

The approach used in the EPP project, described by Green (2009), Baker and Green (2013) and Varvarigou (2014), above, was then published as a teaching resource in 2014 and named the *Hear Listen, Play!* (HeLP) approach (Green, 2014). The HeLP approach expands on Green’s years of

research on informal learning; helping music teachers put her ideas into practice with a clear and easy to follow manual and audio materials.

Green's (2014) book allows instrumental teachers to use this strategy to teach both popular and classical music by ear, and provides guidance on how to apply it to other styles of music. She outlines a clear and simple two-step approach:

1. Listen to a complete piece of music
2. Play a single line riff from the same piece, on repeat, while the student attempts to find the notes

In addition, she notes that it is important the student is given time to figure the notes out for themselves, and, therefore, the teacher's role is as facilitator, encouraging students and helping only when necessary. Furthermore, she states that it is essential the student is 'sufficiently challenged but not threatened' (Green, 2014, p. 13).

The *Hear, Listen, Play!* book is not an academic text, however, Green (2014) discussed her research on a more academic level at the end (See pp. 111-116). This includes the findings from her own research, and that of Varvarigou (2014) and Baker (Baker and Green, 2013), on the EPP. More specifically, this section outlines an aural test experiment undertaken predominantly with piano students aged ten to fourteen years old. The students were divided into an 'experimental group', who had just seven to ten lessons in which the HeLP approach was employed for ten to fifteen minutes in each weekly class, and a 'control group' who continued their weekly lessons as normal, focusing on notation. Green (2014) found that 'all the children in the group who used the HeLP strategies achieved higher marks on every criterion [pitch accuracy, contour accuracy, rhythmic accuracy, closure, tempo accuracy and overall performance]' (p. 113) than the students in the control group. In addition, Varvarigou's (2014) findings from the EPP indicated that, at the end of the project, students had,

- enhanced aural skills and ability to play back what they hear
- enhanced improvisation skills

- more confidence in their playing
- enjoyed the learning process more compared to previous approaches
- greater ability to experiment with musical sounds
- autonomy over what they learn and when they need guidance from their teacher

Moreover, she stated that these findings ‘have illustrated that ear-playing incorporates exploration, discovery-learning and problem-solving’ (Varvarigou, 2014, p. 480); three critical skills for creating motivated, autonomous and independent learners (Ryan and Deci, 2017).

While these are noteworthy benefits to the students, the HeLP approach was found to have greatly benefitted the teachers practice too, with all participating teachers noting an increased feeling of confidence in both teaching students how to play by ear, and playing by ear themselves (Varvarigou, 2014), and 84% said they felt they had ‘learnt useful teaching skills during the project’ (Green, 2014, p. 31). Green (2009) discovered that the teachers who participated in the EPP felt that it positively impacted their teaching and opened their minds to other possible ways of teaching and learning. Furthermore, Varvarigou (2014) noted that teachers started to value learning by ear and see the importance of including both informal and formal learning practices in their teaching. They began to realise that the ‘symbol-action-sound’ process of learning, which is prevalent in many instrumental music lessons, ‘restricts our ability to listen more structurally (in the EPP teachers’ words ‘to see new things’ in the music and ‘to realise that music has a lot of different layers you could listen to’) and limits our confidence to ‘keep going ... without losing the sense of the musical flow of time’ (Varvarigou, 2014, p. 480), and that, therefore, the ‘sound-action-symbol’ approach, encapsulated by the HeLP approach, is potentially more beneficial.

While these are significant findings, it is also important to note, that while Green clearly encourages the inclusion of the HeLP strategy in formal instrumental music teaching and learning settings, she believes that it should be used in addition to the existing, formal strategies and is not intended to replace them; rather complement or enhance them.

Simultaneous Learning

Harris (2015) is one of the few scholars in music education who fully supports students partaking in graded examinations. It could be argued that this is because he works for the ABRSM and has published many series of books with them. Nevertheless, he also acknowledged the potential disadvantages, like those established in the research of his contemporaries, which is discussed in detail later in this chapter. In addition, he was the only scholar who offered an alternative and more holistic approach to teaching the examination syllabi; an approach he developed called Simultaneous Learning (Harris, 2014).

Simultaneous Learning has three main principles:

1. Teach proactively
2. Everything connects
3. Teach through the piece's ingredients

Harris (2015) explained the approach in relation to a lesson:

In a Simultaneous Learning lesson we identify the relevant ingredients (in a piece or song, for example, we would identify the key, rhythmic patterns, markings, character, etc.) and then base the lesson around exploring a number of those ingredients, mixing and matching them, and then finally putting them back into the piece when fully understood. In this way we ensure that they are truly learnt, allowing pupils to apply them in any context. Thorough learning has taken place. If we teach a rhythm in one piece but the pupil can't do it when encountered in another piece, that rhythm has neither been properly thought nor learnt.

(Harris, 2015, p. 40)

Harris (2015) explained the importance of teaching proactively and helping students to continuously make musical connections through the 'ingredients' of their pieces, or as Green (2008) describes it, making 'intersonic meanings' (p. 77). Harris (2015) believes if the teacher creates 'a flow of continuously appropriate and achievable musical activities' it will 'lead to real understanding and ultimately produce independent and positive-thinking musicians' (p. 39).

The idea that everything connects is an important one, as encouraging students to see this from an early stage deepens their musical knowledge and understanding. Interestingly Green (2002)

noted this in her research as one of the main elements missing from the informal learning practice of popular musicians, with many claiming it took years before they made such connections. This is concurrent with the findings of Pitts (2012), who found that several of the popular musicians in her research spoke about their insecurities around their lacking formal skills such as reading notation. While Simultaneous Learning is a predominantly formal approach to teaching, it focuses on understanding the ‘ingredients’ of a piece such as its key, prominent rhythms and melodic patterns, structure, the techniques needed to play it, in addition to listening and internalising the music; not just reading notation as other formal approaches do. The importance placed on listening, as in informal learning, gives the student a familiarity with the piece before playing it, albeit with more of a focus on reading that is not traditionally a part of informal learning practices. The importance placed on listening in the Simultaneous Learning approach is noteworthy as it brings us closer to an approach that merges formal and informal practices together.

However, little empirical research has been carried out on the effects of the Simultaneous Learning approach on students and teachers other than that of its originator, Harris, who has written many books and articles, and given talks on the subject. With that said, the online reviews of his books and seminars on Simultaneous Learning have been predominantly positive and enthusiastic, with instrumental teachers calling his approach ‘inspiring’, ‘creative’ and ‘influential’, and many claiming that his approach has improved their teaching. Spanswick (2014), a music educator and writer, described how Harris is ‘single-handedly changing the delivery of instrumental and vocal teaching’ (para. 1) and that his approach ‘empowers students, enabling them to become confident, individual, creative musicians’ (para. 3).

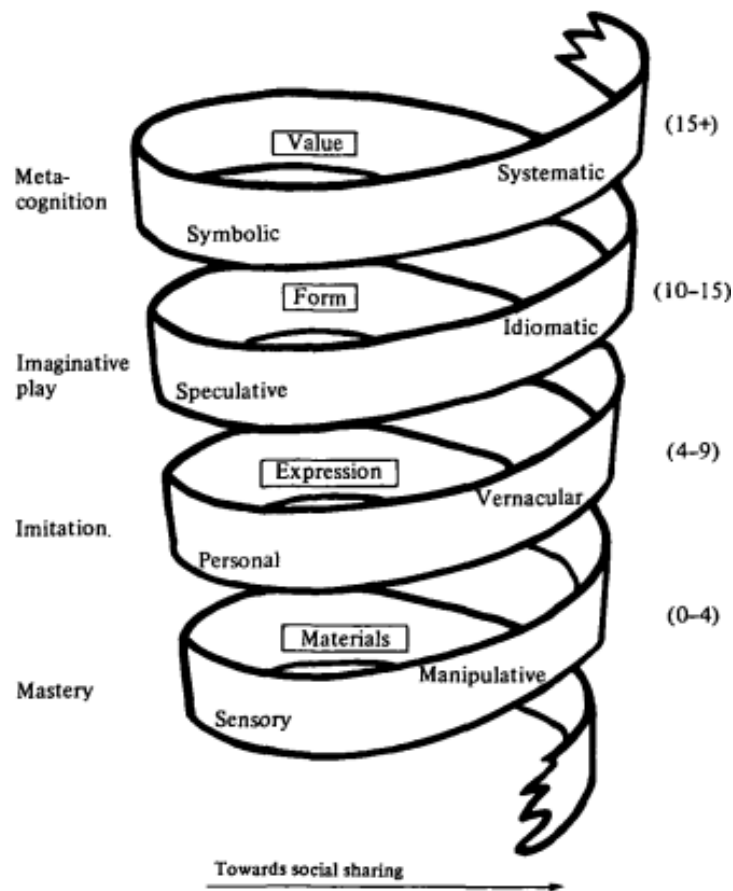
Swanwick & Tillman’s Theory of Musical Development

In addition to knowledge of a range of formal and non-formal learning approaches, such as the SL and HeLP approaches, knowledge of student developmental processes is equally important for music teachers. Influenced by the work of Bruner, Piaget, and numerous other psychologists and

educators, Swanwick and Tillman (1986) found that a sequential process of development occurs when children participate in music-making activities. They observed that children develop through interacting with their environment and that the developmental process is somewhat predictable, for example we walk before we can run (Swanwick and Tillman, 1986).

In their research, forty-eight children between the ages of three and nine years old were first given a series of musical opportunities where they composed or improvised on a variety of musical instruments. These instruments ranged in difficulty from maracas and tambours, to chime bars (consisting of three pitches), to fully chromatic xylophones. Over seven hundred compositions were collected from these participants over a four-year period and analysed. The findings from this longitudinal study gave way to Swanwick and Tillman's (1986) spiral of musical development (See Figure 2.2 **Error! Reference source not found.**).

Figure 2.2. Swanwick and Tillman's (1986) Spiral of Musical Development



Swanwick and Tillman's (1986) spiral of musical development transitions through four fundamental and cumulative levels. As illustrated in Figure 2.2, this includes four established musical phenomena (materials, expression, form, and value) and four psychological concepts (mastery, imitation, imaginative play, and meta-cognition). In addition, eight developmental modes, identified and used by Bunting (1977) to explain different forms of musical perception, are utilised by Swanwick and Tillman (1986) and arranged sequentially in their spiral of musical development, with a timeframe showing the age each stage generally occurs. These developmental modes are sensory, manipulative, personal, vernacular, speculative, idiomatic, symbolic, systematic (See Swanwick and Tillman, 1986, for a detailed description of these).

Although a complex theory, with many facets, Swanwick and Tillman's (1986) spiral of musical development allows classroom and studio teachers gain valuable insight into the processes of musical development, and it is recommended to be considered during all curriculum planning and development (Swanwick and Tillman, 1986). This, Swanwick and Tillman propose, is to ensure musical activities are designed around each stage of musical development; by acknowledging what stage each individual student may be at in their development the activities in each lesson can be designed for optimal musical development and the teacher can tailor their questions to assist students transition to the next stage of their development more swiftly.

Furthermore, this spiral can help identify students' musical development and help encourage it by guiding the design of activities that move between musical encounters (illustrated on the left of the spiral) and musical instruction (on the right of the spiral), and between musical intuition and analysis. Philpott (2022) compared this to Folkestad's (2006) continuum of formal and informal learning where the left of the spiral represents informal learning and the right the formal learning experiences (Philpott, 2022). The strategies teachers use can create rich, positive learning environments such as this one, which can enhance student's development and give them the best learning opportunities, or, conversely, a negative environment where musical development can be

impeded. Therefore, the role of the teacher is critical in a student's music education and development.

Although over thirty-five years old, this model remains the foremost theory of musical development in Western music and provides a novel insight into the sequential process of student development when participating in active music-making. However, notwithstanding its longevity and significant impact on music education since its conception, Swanwick and Tillman's (1986) spiral of musical development has been subject to criticism. Several scholars have warned of the over-generalisation of the theory as there is not enough evidence to support its application in all music learning contexts (McCullough and Finney, 2022). In addition, others have noted that there is a universalism implied by the model and warned that 'there are other ways to think about knowledge and learning' (p. 112).

Furthermore, Fautley (2015) discussed the tension between the linear progression expected by governing bodies and the school examination structures, and the spiral curriculum, as depicted by Swanwick and Tillman's (1986) model. While the spiral curriculum is widely used by teachers in all areas of education, and central to their teaching philosophies and curriculum design, Fautley argued that governing bodies and examinations focus on linear progression, which does not fit with the spiral model. He stated 'trying to fit our complex spiral curricula into linear progression is doomed to failure' (Fautley, 2015), however that is more a criticism of the education system, than of Swanwick and Tillman's (1986) spiral of musical development.

National and International Perspectives on Piano Pedagogy

The Irish and European Context: Insights into Irish Piano Pedagogical Practices

Few studies have been conducted on piano pedagogy in Ireland to date. However, despite the paucity of literature, three Irish scholars (Bridge, 2005; Lennon, 1996; Taaffe, 2014) have provided important insights into piano education and pedagogical practice, with Lennon (1996) being the first scholar to investigate the area, albeit within a UK context. Lennon (1996) investigated teacher

behaviour and its significance in the context it occurs. While this study is now over twenty-five years old, it seems as relevant today as it was when it was written; allowing music researchers and educators to gain a valuable insight into piano teaching practices and teacher behaviour.

Much research has been conducted by scholars observing teachers teaching, but Lennon took an innovative approach to this form of research. While she initially watched videos of these teachers teaching, she then used the teachers' own reflections and explanations for their behaviour (after seeing excerpts of these videos) and used this information to inform her study. This research provided us with a greater insight into teachers' decision-making and thought processes, and reasons for their behaviour, than previous pedagogical observations. While Lennon's aim of her study was to be 'suggestive rather than prescriptive' (p. 223), she made some interesting discoveries, such as the participants' emphasises on teaching students 'how to learn' (p. 241) and how this informed much of their teaching decisions.

Key Signature Pedagogy: An Exploration of Instrumental Music Teaching and Learning in Ireland - 'fascinating Laboratory' or 'deviant Tradition'? (Taaffe, 2014) had a significant impact on this study. This in-depth work of research predominantly focused on the area of assessment and how it has shaped instrumental teaching practices in Ireland, relating her findings to the pedagogical models of Bernstein and Shulman. This was achieved through a mixed methods approach which investigated Irish instrumental music examination boards, and the opinions of the teachers, parents and, albeit to a lesser extent, the students who participated in the study.

Taaffe (2014) found that instrumental teaching practices and music examination boards in Ireland tend to share the dominant values of Western Classical music and place great importance on written notation. This dominant ideological perspective, which lines up with the findings on instrumental and classroom music teaching practices discussed previously, has affected how piano is predominantly taught in Ireland, particularly the importance, or lack of importance, placed on informal learning practices, such as learning by ear; the aural tradition of learning by ear is highly

valued in the playing and learning of Irish traditional music and popular music but is often overlooked in the formal one-to-one piano lesson.

Like Taaffe, Bridge (2005) also looked at examination syllabi and investigated the area of creativity within examination syllabi and the piano lesson. These will both be discussed in greater detail in the final section on summative assessment. It is important to note, however, that while Taaffe's work is possibly the most relevant study of the three with regards to this research, it is the only study that did not focus solely on instrumental piano tuition, instead looking at a wide range of musical instruments taught in formal music education settings. Furthermore, while all three scholars have made noteworthy contributions to piano pedagogy research, students' voices have not been heard to any great extent in any of these studies, and as students are, arguably, the most important stakeholders in their own education their voices need to be heard.

The Provision of Instrumental Music Teacher Education in Ireland

Instrumental music teacher education in Ireland is provided in the form of third level BMus and BA music degrees in Higher Education Institutes (DCU, NUI, UCC, UCD, UL, WIT) or in music Conservatories (MTU Cork School of Music; TU Dublin Conservatoire). Alternatively, the Royal Irish Academy of Music (RIAM) provide a one-year, full-time instrumental teaching diploma course. Teaching diplomas from a variety of exam boards (e.g., RIAM, LCM, ABRSM, TCL) can also be prepared for on a part-time basis with private music teachers or in local schools of music and sat at an allocated examination centre around the country.

The Conservatoire Model and the Focus on Performance Skills

Lennon and Reed (2012) commented on music conservatories, which are the primary providers of instrumental teacher education in Europe, and their tendency to focus predominantly on the training of musical performers. These courses, while striving to create musically competent and skilled musicians, and are very successful in this endeavour, vary in the importance placed on creating

skilled teachers. Many courses are designed around building content knowledge and analytical skills, both of which are important attributes of an instrumental music teacher. However, there seems to be little, and sometimes no importance placed on pedagogical content knowledge, or the teaching process (Shulman, 1986; 1987). This is even more compounded in the teaching diploma syllabi. It is questionable whether those who qualify from these courses have formal knowledge of a wide variety of teaching and learning strategies and theories when they leave their studies and transition into the teaching profession.

With the need to design courses around building conceptions of ‘process and content’ (Shulman 1986, p. 13), and the lack of cohesiveness in higher music education courses throughout Europe with regards to teacher training, the European Association of Conservatoires (AEC, 2009) addressed this issue through the development of a framework. This framework organises a set of competences required by instrumental teachers and illustrates the six key roles which European based instrumental/vocal teachers take on in a wide range of musical contexts. These are:

1. Teacher as Performer and Artistic Role Model
2. Teacher as Planner and Organiser
3. Teacher as Communicator and Pedagogue
4. Teacher as Facilitator
5. Teacher as Reflective Practitioner
6. Teacher as Advocate, Networker and Collaborator

This framework was intended to promote discussion within Higher Music Education courses and among individual music educators. It was proposed that the framework be adapted to teachers’ own teaching and learning contexts and inform curriculum development. These are interconnected roles which, as Lennon and Reed (2012) explain ‘come together in the art of teaching’ (p. 300). Shulman’s (1986) ‘pedagogical content knowledge’, which he described as ‘the ways of representing and formulating the subject that make it comprehensible to others’ underpins these competences.

There is an evident need for institutions and conservatoires to acknowledge the changing landscape, the needs of the instrumental and vocal teaching profession, and the needs of piano students in Ireland in the twenty-first Century; their need for non-formal and formal skills which will set them on a pathway to becoming well-rounded, independent musicians. Teachers need to be trained in both formal and non-formal approaches and equipped with a range of competences and a toolkit of approaches and strategies to employ in their future classrooms to meet their students' needs and interests. The AEC (2010) framework is a significant stepping-stone towards this goal.

Lennon and Reed (2012) suggest that, through the competence domains outlined in the framework, 'higher music education institutions have both opportunities and responsibilities in relation to developing programmes that will equip instrumental/vocal teacher education graduates with the competences necessary to undertake... new employment opportunities' (p. 301). This framework, if adopted and implemented by Higher Music Education Institutes to inform their curricula, will be beneficial to future student teachers and their own students. However, the problem remains with those who are currently in the teaching profession who have missed out on such opportunities in their training. Therefore, this highlights the importance of professional development for these teachers and having access to such training.

The US Context

Several studies have been conducted on piano pedagogy within the US context. However, most research in this area focuses on teacher attitudes and needs, teacher training, and pedagogical course content in Higher Education (HE) music courses. Schons (2005), following on from the MTNA (1990) report, conducted a survey with almost six hundred piano teachers across the US who taught in a variety of settings. The data from this provided valuable information on these teachers' educational experiences and needs, their attitudes towards pedagogy course content, and their own teaching careers, all of which is useful for informing curriculum development in HE music courses.

Some of the most interesting findings from Schons' (2005) survey was the importance teachers placed on 'basic skills' such as reading and technique. While this was not a surprising finding, per se, there was a notable difference in response from the younger teachers who placed more importance on 'functional and creative skills' such as playing by ear, than the older participants did. At this time, research on the benefits of informal learning practices was emerging so it is possible that this, and the learning experiences and interests of the younger teachers, had an impact on these findings. However, despite the importance placed on the 'basic skills', Schons suggested that,

Piano pedagogy programs should include a strong emphasis on not only teaching students basic skills, but also functional and creative skills, such as accompanying, harmonization, transposition, improvisation, score reading, composition, and playing by ear. It is especially important for teachers who did not have instruction in these areas in their own studies to become comfortable teaching their students these skills, so that their students may become well-rounded musicians'

(Schons, 2005, p. 112)

The study found that most piano teachers taught privately at home (86%) with most students aged between seven and eighteen years old. These participants reported a range of ways in which they learned to teach piano, such as:

- Attending workshops, clinics, and conferences on teaching (85.8%)
- Studying piano method books and materials (80.4%)
- Emulating their own teacher(s) (79.4%)
- Experience/trial and error (78.8%)
- Studying available materials on teaching (such as texts, articles, videos) (76.6%)
- Talking with other teachers (71.6%)
- Taking one or more piano pedagogy courses at the college/university level (68.9%)
- Observing another teacher (54.8%)

Schons (2005) also found that the younger respondents were more likely to have studied pedagogy at university than older teachers. However, looking at the above statistics, it is interesting to see how important teacher CPD and method books are in providing teacher training, regardless of whether they studied pedagogy at university.

Resources for Teacher Training and CPD

A number of excellent books have been published on piano pedagogy over the decades by internationally renowned pianists and teachers from the US (Taylor, 1981; Uzler, Gordon and McBride Smith, 2000), UK (Harris, 2014; 2015; Matthay, 1903; 1910; 1913; Taylor, 1981; Williams, 2017), mainland Europe (Leimer and Giesecking, 1972; Neuhaus, 1993; Sandor, 1981) and Ireland (Fleischmann and Fleischmann, 2014), among others. As with many HE performance music courses, these publications provide teachers, students, and performers with advice and strategies on how to approach various techniques necessary for playing piano, from beginner to advanced levels, in addition to how to prepare for performances and interpret pieces from a range of eras. These publications are often used as part of pedagogy courses in HE and have proved helpful to those who studied them, with many teachers using them as a continuous source of reference throughout their teaching careers.

The writing in these publications is often very detailed and focused on key areas of technique such as rhythm, fingering, phrasing, rubato, pedalling, style, and tone production. Although these publications emphasise musical content over pedagogical content knowledge (Shulman, 1986; 1987), there is a lot to be learned from these experts which is useful for pedagogy, and of relevance for this study, particularly the writings of Taylor (1981) and Matthay (1903; 1910; 1913).

Taylor (1981) highlighted the importance of musical analysis, and how essential it is for students and musicians. He described in-depth analysis as ‘a reversal of the creative art (and science) of musical composition’ that ‘can help the performer to grasp the inner logic and architecture of a composition’ (p. 118). This provides an interesting perspective on musical analysis and how it is much more than simply understanding the key and structure of the piece, but can assist in interpreting the music and gaining insight into the intention of the composer.

Matthay (1903; 1910; 1913) was famed for his teaching and writing on how to produce and effortless and beautiful singing, or cantabile, tone on the piano, and this was often noted in his own

performances and the performances of his students. However, he also emphasised, throughout his writings, the importance of listening at all stages of learning; from before a beginner even touches the piano, to advanced performers, and believed that no key should be played without musical intention. Although developing aural skills in musicians is discussed in some of the piano literature (for example Harris, 2014; 2015) and the importance of listening to other recordings and performers (Neuhaus, 1993), Matthay (1913) provides a unique view of ‘ear training’, associating it with ‘mind training’. He describes mind training as ‘training ourselves to observe and notice aural impressions’, and ‘to make use of the impressions received through our ear-apparatus’ (p. 8). Matthay eloquently compared the act of not purposely and attentively listening to what we are playing, to an artist not looking at what they are drawing or writing:

‘No one is quite so foolish as to try to write or draw without at least taking the trouble to look at the paper he is engaged upon. Nevertheless, most music-students fail to realise that it is just as idiotic to try to play any musical instrument without at least taking the trouble accurately to listen to it — all the time’

(Matthay, 1913, p. 7)

In other words, we should not passively listen to sounds, or music, but actively engage our brain and analyse what we are hearing. However, as Matthay alluded to, most students do not actively listen to what they are playing or learning. This is an important issue to address in instrumental pedagogy, and in particular, the one-to-one piano lesson, where listening is often not a priority. According to Matthay, listening is essential for our musicality, and our ‘ultimate aim’, should always be ‘the achievement of the Beautiful in Music’ (1908, p. I).

The Master-Apprentice Model

The impact of past teachers on one’s own development as a teacher was noted in several studies (Elgersma, 2012; Hallam, 1998; Schons, 2005; Slawsky, 2011). This reflects the master-apprentice model that has been so entrenched in piano education for centuries.

While many music educators engage in teacher training programs, the standard mode of transmission for learning to teach applied music, and particularly the piano, often occurs within the master-apprentice model of pedagogy.

(Slawsky, 2011, p. 1)

Slawsky does not agree fully with the master-apprentice model as a method of learning how to teach, as pedagogical knowledge is obtained tacitly through this approach; it ‘only addresses how pianists learn to *play* the piano and not teach’ (Slawsky, 2011, p. 13). This aligns with the writings of Lennon (1996) and Shulman (1986; 1987) who found that *content knowledge* constitutes most of what teachers learn under this model.

While the importance placed on developing technical and performance skills is evident from the beginning stages of piano education, this carries through into HE music degrees, particularly undergraduate music degrees where most modules are performance driven. Many of the participants in Slawsky’s (2011) study who completed HE music degrees noted that, in contrast to all of their performance modules, they may have had only one piano pedagogy class a week, and felt that, because of this imbalance and the importance placed on performance, they were not prepared adequately for their teaching careers; they expressed a need for more structured, and guided, hands-on teaching experience in their undergraduate training. In addition, three of the participants discussed the importance of remaining ‘relevant with the culture’ and suggested that ‘the piano curriculum should move beyond the traditional “Classical” repertoire’ to better meet students’ interests and needs (Slawsky, 2011, p. 197).

Despite the criticisms of the master-apprentice model, and the emphasis it places on performance in all aspects of piano education, this model provides students with technical, pianistic and musicianship skills necessary for becoming excellent teachers, in addition to providing experience of a range of repertoire and teaching traits of past teachers in which teachers can emulate or diverge from. Furthermore, some teachers noted that the development of their own pianistic performance skills enhanced their teaching skills (Slawsky, 2011).

With the evident benefits and pitfalls of this model in mind, it is important to consider the impact teachers have on future teachers through this model. It further highlights the importance of

providing student teachers with excellent teaching strategies and pedagogical content knowledge which will not only enhance their teaching but will also impact the teaching practices of future generations who may begin their piano education with them.

Learning How to Teach through Trial and Error

Research has shown that, no matter what route a teacher takes in learning how to teach, experiential learning, i.e., learning to teach ‘on the job’ through trial and error, factored as prominently, if not more so, than the master-apprentice model (Elgersma, 2012; Schons, 2005; Slawsky, 2011). Slawsky noted that, regardless of the lack of pedagogical training and the quality of one’s own learning experiences under the master-apprentice model, it was evident that people still manage to become teachers. However, learning solely through this method is a route neither Schons, Slawsky or Slawsky’s teacher participants recommend.

Pedagogical Course Content

Slawsky’s research suggests that many piano teachers begin teaching before attending formal piano pedagogy training and learn primarily in the same ways as outlined in Schon’s (2005) research, above. Therefore, ‘piano pedagogy coursework may be considered professional development in the context of piano teacher training, as opposed to piano teacher preparation’ (Slawsky, 2005, p. 230). Although, no amount of theoretical learning can prepare you for real-life teaching (Elgersma, 2012), it is important to gain some grounding in pedagogy and learning theory before and/or during your teaching career.

Whether pedagogical courses are part of a teacher’s CPD or a student teacher’s preparation to begin teaching, the content of such courses have been investigated in detail. Recommended content includes supervised teaching and observation of good teaching, the sequencing, knowledge and presentation of materials, method books, teaching strategies and educational theory, student motivation and behaviour, meeting the needs of 21st century students, and how to teach technique,

in addition to business skills such as managing taxes, advertising, fees, etc. Although research in this area focused on HE music pedagogy course content, the findings should be taken into consideration in the creation of high-quality CPD courses and workshops for both novice and experienced teachers, as these courses have the greatest impact on how teachers develop their pedagogical skills and learn how to teach (Schons, 2005).

The Potential and Limitations of Summative Assessment

A substantial body of research has been completed internationally on assessment in music education. Fautley's (2010) comprehensive book looks at the theory and practice of assessment in music education and emphasises that the main objective of examinations should be to enhance students' musical skills and understanding. Fautley argues that assessment should be *for* learning (i.e., formative assessment which evaluates where students are in their learning and where they need to go), not *of* learning (i.e., summative assessment which summarises the learner's achievement), which is often the role of graded examinations.

Harris (2004; 2014; 2015) has made a significant contribution to instrumental music education and has influenced current trends and movements within this area. In his writings he discusses the use of examinations in instrumental teaching in detail and, unlike Fautley, states that they are beneficial. However, he believes that summative, graded examinations should only be used to complement an already well-structured curriculum designed by a teacher who employs a creative and student-centred approach to teaching. As Davidson and Scutt state, in their 1999, study 'it is how the teacher works with the examination that is vitally important' (p. 82).

Little research has been done internationally on pedagogical approaches and assessment in piano education, but the studies carried out in this area have shown that many piano teachers 'teach to the exam' due to pressures from parents, and sometimes the students and teachers themselves, for students to achieve high grades (Davidson & Scutt, 1999; Harris, 2015). Consequently, these studies show that teachers predominantly use reactive, teacher-led approaches in instrumental

teaching. Research within the Irish context concurs with these dilemmas and advocate for proactive, holistic, student-centred approaches to instrumental education to be employed (Bridge, 2005; Chawke, 2017; Taaffe, 2014). Bridge (2005). Taaffe (2014) asserted that such perceptions have led to a lack of creativity in the piano lesson which can be harmful to a student's musical development and motivation to learn.

Brady (2013), like Fautley (2010), has made noteworthy developments in the area of music assessment and advocates the replacement of end-of-year examinations with continuous assessment and evaluation; a move already implemented by second and third level institutions throughout Ireland, and to great success. While it is important to note that researchers and educators do find examinations to be positive for piano students, as they are motivational and 'give students a sense of direction' (Chawke, 2017, p. 29), Brady looked at examinations from a different perspective. He questioned if 'any form of discovery' takes place on the part of the student when preparing for a single, end-of-year assessment? Unfortunately, Brady found that there was little discovery on the part of the student, as the teacher often assimilated the knowledge for their students. In addition, Fleischmann (1952) found that examinations can often become the sole focus of a student's piano education.

Several music scholars have raised similar issues to Brady, Fautley, and Fleishman, but more specifically in terms of learning a musical instrument. The question has been raised as to whether learning an instrument, and completing examinations, result in students learning just that instrument, or do they obtain a greater knowledge and understanding of music through their instrument (Bridge, 2005; Lennon, 1996; Swanwick, 1992)? More specifically, should learning an instrument be a way of obtaining this musical understanding? Bridge (2005) agrees, stating that 'music should be taught through the instrument – not just the instrument' (p. 34). Swanwick (1992) also agrees with this and believes that instrumental students are taught musical skills beyond their musical understanding, an outcome he disapproves of (p. 21). However, Lennon (1996) challenged Swanwick's belief in her research, noting how piano teachers are often criticised for 'teaching the

piano rather than teaching music' (p. 9). Interestingly, Lennon found the teachers in her study do ensure their students gain a musical understanding, as well as the technical skills required to play piano. With that said, it is important to note that the level of the students' musical understanding and musical skills are not measured comparatively in Lennon's study, therefore not fully disproving Swanwick's assertion.

The Role of Instrumental Music Examination Boards

The Associated Board of the Royal Schools of Music (ABRSM) examination board appears to agree with the idea that music should be taught through the instrument, as they state on their website that 'we believe in the importance of all-round musicianship, and this forms the basis of our exams' (ABRSM, 2017). The ABRSM is one of the leading instrumental examination boards in the UK and Ireland but, interestingly, Bridge (2005) and Taaffe (2014) examined the formal type of assessment used by examination boards such as the ABRSM in Ireland, investigating its effect on students' musical development and engagement. Bridge (2005), in her findings, highlighted the lack of creativity in these formal instrumental examinations (2005, p. 68). She called the examination syllabi 'uninspiring' (p. 26) and quoted the Incorporated Society of Musicians (ISM), who cites the main disadvantages of examinations as a 'lack of proper preparation, hasty progress' and a 'narrow choice of repertoire' (p. 56). Furthermore, Bridge discussed the examination syllabi's focus on technique and notation, which she explained is not very musical, and how they neglect, arguably more beneficial skills for student development, such as composition, improvisation, and critical listening skills. We can determine from this that she does not agree with the ABRSM's previous statement.

Taaffe (2014) discussed these same instrumental music examination boards, in addition to music conservatories, and how they have influenced instrumental pedagogy in Ireland. She explained how they 'regulate' instrumental pedagogy and maintains that 'the inherited cultural social values, traditions and rituals of Western art music', advocated by these examination boards

and music conservatories, have dominated music teaching in Ireland (p. 180). Like Bridge (2005), Taaffe also discusses graded examinations and their effect on students, explaining how students are often pressurised by both parents and teachers to partake in them. Both scholars show in their findings that examinations have become one of the primary focuses of instrumental teaching in Ireland and have become too competitive, as parents' expectations for their child to attain high results increase. Because of this, teachers believe exam content now occupies 'the most part of the year' (Bridge, 2005, p. 98), and allows little time or freedom to deviate from the syllabi or use class time to explore other creative areas the student may enjoy, such as improvisation, composition or learning a variety of styles.

Despite these negative findings of summative assessment, namely graded examinations in instrumental music education, much research has proven the benefits of examinations for student motivation and development, as it 'gives feedback, structure and a sense of achievement' to the student (Davidson and Scutt, 1999, p. 84). However, from the previous examples given, it is evident that examinations have become too competitive to gain the benefits initially intended by them. Indeed, much debate surrounds formal music teaching and assessment approaches in limiting creativity (Brady, 2013; Bridge, 2005; Philpot and Spruce, 2012; Taaffe, 2014) and the propensity for music students to 'drop out' of music learning because of these examinations (Robinson and Pitts, 2016).

Possible Solutions to Assessment

While more modern and contemporary works have been included in the formal examination syllabi in recent years to address some of the above issues, it is evident from the literature that there is a desire for the examination syllabi to be reviewed and updated further to better meet the musical interests of today's students. Bridge (2005) and Brady (2013) highlighted the need for teachers to move away from the current examination structure, towards one that creates a 'complete musician who is equally musically literate and creatively involved' (Bridge, 2005, p. 115). The introduction

of examinations in popular and jazz music have given students more choice in recent years and may address their needs, but there is a danger that this will result in students having to choose one style of music over the other; creating a hierarchy, which is not an ideal solution.

A more flexible syllabus, which allows students and teachers more freedom and choice in their learning and teaching, respectively, and allows for the inclusion of a variety of musical styles and learning practices in one formal assessment may offer a better solution to meeting students and teachers' interests. Alternatively, the pedagogy used when preparing for such formal graded examinations may be an alternative and more viable solution to better meeting students and teachers' needs, allow for more creativity and the development of informal skills in tandem with formal skills, and therefore, potentially, reduce student dropout and provide them with a greater range of musical skills, i.e., create a more 'well-rounded' musician.

Conclusion

Examinations are a widely researched area in instrumental and classroom music education and, as outlined in the literature, have both positive and negative attributes. While examinations can be a source of motivation and help create structure in a student's musical education, the literature highlights some issues. The restrictive nature of examinations appears to be one of the most common criticisms; creating an education that lacks creativity and does not encourage independent learning, problem-solving, critical thinking or students learning to be their own musician. It is evident that formal instrumental music examinations could benefit from the developments made in other areas of music education; moving it from 'outside of mainstream education' (Taaffe 2014, p. 14), to the centre of it, but it is also likely that reassessing how we teach piano and prepare students for these examinations.

Over the past century many influential pianists have written books on the formal practices of piano teaching and learning focusing on areas of technique, performance, and interpretation (Fleischmann and Fleischmann, 2014; Harris, 2014; 2015; Leimer and Giesecking, 1972; Matthay,

1903; 1910; 1913; Neuhaus, 1993; Sandor, 1981; Taylor, 1981; Uzler, Gordon and McBride Smith, 2000; Williams, 2017). While these books have greatly influenced piano pedagogues, researchers and students for many decades, there is now a notable shift in music education research, with a new emphasis on informal learning practices, and how these may be incorporated into formal music education.

Folkestad (2006) gives the Hegelian definition of ‘thesis-antithesis-synthesis’ when describing beneficial, student-centred teaching practices; the ‘thesis’ symbolising the ‘formal’ or traditional school education; ‘antithesis’ being the ‘informal’ or outside of school education; and ‘synthesis’ representing the ‘new ways of musical learning’ which combines the ‘features and qualities of both [formal and informal] learning styles’ (p. 14). As demonstrated in the literature, the introduction of non-formal pedagogical approaches in instrumental music lessons is a viable and evidence-based way of addressing the issues of early dropout, lacking motivation and engagement in students, and of meeting their musical needs and interests. In addition, the research shows the potential benefit these approaches can have on students’ musical development, motivation to learn and capacity for independent, lifelong learning.

Harris's Simultaneous Learning and Green’s HeLP strategy, while predominantly formal and non-formal, respectively, have provided substantial evidence that they are both valuable approaches to teaching students new repertoire and for creating more engaged and motivated musicians. While the HeLP and Simultaneous Learning approaches have similarities, particularly in their aims, as discussed previously, we can see that they complement each other in the areas in which they differ also. It is felt that by implementing both approaches educators can enhance their students’ formal and informal music skills simultaneously, creating a more complete musician. See Table 2.1 for summary of similarities and differences between approaches. (*Note: Similarities are highlighted in grey*).

Table 2.1. Comparison of approaches – SL & HeLP

Simultaneous Learning (SL)	Hear, Listen, Play! (HeLP)
Formal	Non-formal
Student centered & holistic	Student centered & holistic
Teacher is proactive – planning the best way to make connections, often creating additional material to use before introducing the score	Teacher is proactive – records each individual phrase/riff of chosen piece prior to lesson
Student guided by teacher throughout the learning process, but student encouraged to discover the music for themselves	Student guided by teacher only when necessary – strong emphasis on student figuring out the notes themselves
Focus on student making connections between different musical elements such as scales, rhythmic patterns, theory, technique, etc.	Does not focus on making musical connections (based on the informal practice of how popular musicians learn)
Teacher usually works on technique before notes are learnt, or sometimes during note learning	Teacher works on technique during/after notes are learnt
Notation is important	Does not use notation
Some emphasis on developing aural skills	Focus is on developing aural skills
Suitable for all pieces, particularly those with block/broken chords and rich harmonic structures	Suitable for pieces with a single melody and/or single harmony line Not suitable for pieces with a dense texture
Developed for instrumental music tuition	Developed for group music initially & then adapted for instrumental music tuition
Develops students’ musical literacy, problem-solving and critical thinking skills	Develops students’ aural, critical listening and problem-solving skills
Aims to create independent learners	Aims to create independent learners
No previous research done on integrating approach into piano tuition specifically	No previous research done on integrating approach into piano tuition specifically

Although the teacher is proactive in both approaches, particularly in the creation of resources, it is important to note the teacher’s role of facilitator when implementing the HeLP and SL approaches, particularly SL as the teacher guides the student in making musical connections throughout each lesson. In addition to the musical literacy and aural skills students develop through these approaches, the development of critical thinking, listening and problem-solving skills are just as crucial in the pursuit of creating independent, engaged, and motivated musicians with the skills necessary to partake in lifelong learning.

This research addresses several gaps in the literature above. Firstly, the application of non-formal pedagogical approaches in the one-to-one piano lesson, and the impact this has on students’ musical skills, knowledge, and motivation to learn has not been investigated heretofore. Secondly, most research discussed in this chapter has focused on the early years of learning an instrument or

teaching and learning in HE specialist music courses, with few looking at the critical intermediate years of learning piano. This research addresses this oversight by focusing on piano students aged between eight and eighteen years of age. Furthermore, this study puts the student voice at the centre, as it examines learners' experiences and opinions of the pedagogical approaches; the student voice is notably absent from most of the current literature, which is evident in this chapter. Finally, with the paucity of longitudinal studies in instrumental music education research, this study addressed this gap by being the first qualitative longitudinal study that focuses on the same participants over three years of learning piano using an action research design.

As discussed in this chapter, the teaching and learning strategies predominantly used in a 'typical studio', according to Evans, McPherson and Davidson (2013), have been found to frustrate students' and have a negative impact on their motivation and engagement in learning. Furthermore, effective learning and practice strategies and the use of student-teacher dialogue, have been linked to the development of autonomous and independent learners who are more likely to partake in lifelong, active music-making (Burwell, 2005). Although the research states that this last claim warrants further investigation, the findings are concurrent with other research on SDT in the workplace (Baard, Deci and Ryan, 2004), in sport (Frederick and Ryan, 1995), and in other educational settings (Ryan and Deci, 2017). Therefore, this study, influenced by the research outlined above, strived to create a learning environment which focuses on the approach to learning rather than the examination, provides rationales for why activities are important, and provides choice in repertoire and examination type, and eventually choice in the approach taken to learn each piece (as seen in Cycle 3 of the action research project).

In addition, building on the teaching strategies outlined by Jang, Reeve and Deci (2010), discussed in this chapter, this research sought to explore the role of facilitation in my teaching, while also being proactive, with each lesson carefully planned and structured, in addition to the creation of new learning resources constructed to help create engaging activities for students. These resources assisted students in making meaningful musical connections and provided them with

opportunities to learn their repertoire by ear, enhancing both reading and aural skills in students, both of which have been found to have a positive impact on the success of learning a musical instrument and prolonged engagement (McPherson, 2005).

Finally, although Swanwick and Tillman's (1986) spiral of musical development had a limited contribution to the conceptualisation and analysis of this study, it was important to discuss it here and for me to be aware of the different stages of development throughout this research. This helped inform my decision-making process and the design of resources and lesson plans, in addition to the design of a new pedagogical model for practitioners. However, as Fautley (2015), McCullough and Finney (2022) and Thorpe and McPhail (2022) outlined, the spiral is not without its faults, and as this research is a significantly different context to the one it was designed for, I ensured that I did not rely too heavily on it in the analysis of data. While it is the foremost theory of musical development in Western music, SDT and Bruner's Scaffolding of Learning and Discovery Learning Theories were more relevant for this research, therefore they are the focus of the following chapter which outlines the theoretical framework for this study.

CHAPTER 3 - THEORETICAL FRAMEWORK

Introduction

This research is situated within a constructivist interpretivist paradigm; guided by educational and motivational psychology, with philosophical and sociological underpinnings. To understand and interpret the development and perspectives of students, it was essential to be aware that students may see and experience the world differently to me, and to one another. Schwandt (1994, p. 64) uses the German word, '*Verstehen*', meaning 'understanding', to explain the 'means or process of sociological interpretation, by which the constructivist or interpretivist inquirer interprets human actions' (p. 120). In accordance with the constructivist paradigm, my epistemological view is that knowledge is created through interactions and experiences, or, as educational psychologists Snowman & Biehler (2003) describe, that 'meaningful learning occurs when people actively try to make sense of the world' (p. 301).

Bridging Philosophy, Theory and Practice

Philosophy

Through the learning theories of philosophers John Dewey (Dewey, 1966; 2015; Hickman, Neubert and Reich, 2009) and Maxine Greene (2005) I began to reflect on my own piano teaching philosophy and the broader context of piano pedagogy in greater detail. As mentioned in Chapter One, my teaching philosophy draws inspiration from Dewey who believed that educators should 'integrate the educational subject matter with the talents and interests of the learner' (Hickman, Neubert and Reich, 2009, p. 10) and aim to empower students to continue growing and learning throughout their lives. Maxine Greene's (2005) assertion of 'the significance of making meaning and of doing so, not through cognition alone, but through exercise of perception and imagination and an opening to the possibilities in the world' (p. 129) also inspired this study and the qualitative approach employed to investigate the research questions.

As discussed earlier, piano teachers following Western Classical Music practices tend to rely on traditional pedagogies in their teaching which focus on reading skills and technical development (Swanwick, 1999). In my experience as a student and teacher, traditional pedagogical approaches can be hierarchical, with the teacher controlling each element within the lesson and within the master-apprentice model, imparting all information to the student. However, as Greene (2005) argues, such approaches are not conducive to meaningful interactions in the arts and inhibit the possibilities for students to construct their own knowledge (Bruner, 1960).

My teaching philosophy is underpinned by the belief that pedagogy should be a dialogical, student-centred process; predominantly led by the student and their inherent propensity to learn through exploration and play, while guided by their expert teacher. It became even more apparent to me that choice and autonomy-support for students could be pivotal in motivating and engaging students. Moreover, the need to create optimal musical challenges for students to enhance their musical potential and musical competence also became clear. For these reasons, a multi-pronged theoretical framework drawn from Deci and Ryan (2017) self-determination theory, and Bruner's scaffolding of learning and discover learning theories informed the study.

Self-Determination Theory

Don't ask how you can motivate other people. That's the wrong way to think about it. Instead ask, how can you create the conditions within which other people will motivate themselves? And the answer, quite simply, is autonomy support.

Edward Deci

Self-determination theory (SDT) is a 'living' meta-theory, created by Richard Ryan and Edward Deci, which examines the roles of intrinsic and extrinsic motivation in cognitive and social development, and well-being, and is continually developing and advancing as new studies are conducted. SDT believes that people are born with an inherent growth-mindset and are naturally interested in learning and understanding the world around them (Ryan and Deci, 2017). It centres around the idea that humans not only have basic physiological needs (e.g., food, water, shelter), but also have three basic psychological needs: the need for autonomy, competence, and relatedness.

Deci and Ryan describe these needs as ‘innate psychological nutriments that are essential for ongoing psychological growth, integrity, and well-being’ (2000c, p. 229).

The concepts of autonomy, competence and relatedness are the building blocks of SDT, and as this study will demonstrate, they are intertwined throughout the findings. SDT defines autonomy as the act of being volitional and endorsing one’s own actions, and of being in control of one’s life, while also willingly seeking guidance from others when required. Deci and Ryan (2000c; 2017) stress the difference between autonomy and being independent, which implies not needing assistance or guidance at any time, as they can often mistakenly be considered interchangeable terms. According to Ryan & Deci (2017), competence is related to personal growth and development, building our achievements, knowledge, and skills, and feeling effective in our environment, while relatedness refers to making connections with others, feeling safe and having a sense of belonging within our environment, and that our opinions matter. SDT claims that, when a person experiences conditions that support their autonomy, competence and relatedness it promotes motivated and engaged actions, while conditions that thwart these three basic psychological needs result in degradation of functioning and a lack of motivation (Ryan and Deci, 2017; 2020; Deci and Ryan, 2000b; 2000c).

Under the umbrella of SDT there are six mini-theories which have undergone extensive empirical research through inductive and deductive research methods. While each mini-theory is significant, I wish to consider Cognitive Evaluation Theory (CET) and Organismic Integration Theory (OIT) because of their relevance to this study. CET is concerned with environmental factors that stimulate or undermine intrinsic motivation, while OIT gives a perspective on externally and internally regulated forms of extrinsic motivation and looks at how to encourage the internalisation and integration of an activity’s value. In the next sections, I discuss both theories by applying the SDT framework to a hypothetical piano pedagogy context and discuss the importance of learning strategies; giving insights into practices which are need-supportive and need-thwarting.

Cognitive Evaluation Theory (CET)

The first formal SDT mini-theory that supports this research, Cognitive Evaluation Theory (CET), concentrates on intrinsic motivation, specifically how one's environment affects them; either stimulating, enhancing, and maintaining intrinsic motivation, or undermining and diminishing it. Numerous studies have found that intrinsic motivation enhances engagement, performance, and learning, and is connected to increased functioning, problem solving and creativity (Deci and Ryan, 2000b; Ryan and Deci, 2017). Ryan and Deci (2017) explicate:

When intrinsically motivated, individuals move autonomously toward new challenges, wider frames of experience, and increased coherence in understanding. They enact behaviors that interest them, seek stimulation, test limits, and openly assimilate what is novel.

(Ryan and Deci, 2017, p. 179)

While intrinsic motivation is not the only type of motivation needed for students to be successful in piano, I would argue that being intrinsically motivated is certainly beneficial for students' enjoyment of piano lessons and practice, as well as increasing the likelihood of a lifelong engagement in self-directed learning and playing piano. Therefore, CET, and a knowledge of what and how intrinsic motivation is affected, both positively and negatively, is invaluable to this study which looks to enhance students' learning experience and motivation.

Motivation – History and Developments

In 1949, psychologist Harry Harlow first coined the term 'intrinsic motivation' after conducting an experiment with monkeys where he noticed that they solved puzzles simply for the enjoyment of it – not for any reward or physiological need. American behavioural psychologist, Robert White (1959), went on to discuss our 'intrinsic need to deal with the environment' as a competence building activity (p. 318), but from the 1970's onwards it was Edward Deci and Richard Ryan, among many other scholars, who dedicated much of their work to this area; empirically researching how intrinsic motivation is affected by external motivators, such as monetary rewards, evaluations, and feedback. This was achieved through a series of experiments, often with reward and control

groups. Interestingly, these experiments found that those in the reward group, while initially showing motivation for the given activity, quickly revealed diminished intrinsic motivation once the reward was removed. It was found that the reward group viewed the activity as being something they did contingent on a reward, which resulted in lower intrinsic motivation than those in the control group for whom no reward was given; the control group consistently had fuller engagement in the activity because, like Harlow's monkeys, they found it inherently interesting and enjoyable.

It is important to note here that, while SDT does not reject the use of all rewards, it found that, within the context of naturally intrinsically interesting activities, many external, tangible rewards, when introduced at the beginning of the activity and that has a controlling function of some kind, results in people becoming detached and disengaged from the activity, and their values and interests decrease as well as their performance and levels of creativity (Deci and Ryan, 2000b; Ryan and Deci, 2017). In other words, the provision of a reward, or anything which controls behaviour, undermines a person's perceived autonomy, even when seen as a positive incentive.

The Role of Feedback and Reward

Positive feedback, on the other hand, which in the context of a piano lesson might include, for example, "you played that section with nice tone", is found to enhance subsequent intrinsic motivation as the informational aspect of this feedback heightens a person's feeling of competence without being controlling or affecting autonomy, as found with tangible rewards. Numerous studies (Deci, Koestner and Ryan, 2001; Ryan, Mims and Koestner, 1983), however, observed that some forms of feedback, such as an expected evaluation on an activity, even if a positive outcome is expected, can have a negative effect on people. Expected evaluations were found to reduce a feeling of autonomy due to them being seen as controlling, which, in turn, undermines intrinsic motivation and negatively impacts the quality of learning.

From the findings of their studies on CET, Ryan and Deci (2000b; 2017) discovered that events which support a person's basic psychological needs, in particular autonomy and competence,

enhances intrinsic motivation, while events that frustrate those needs will diminish intrinsic motivation. Similar to Csikszentmihalyi's (2002) Flow Theory, CET emphasises the importance of experiencing 'optimal challenge', along with feelings of 'self-efficacy' (See Bandura, 1989) which relate to increased feelings of competence. Autonomy can be enhanced through choice and having opportunities for self-directed learning (Deci and Ryan, 2000b), such as, in a context relevant to this study, how a student approaches learning a new piece of music.

Within social contexts, such as the one-to-one piano lesson, the third of the three basic psychological needs, relatedness, also becomes important. Here, intrinsic motivation can be enhanced by a feeling of belonging and security, and having your feelings and interests acknowledged. This has been found conducive to feelings of autonomy and relatedness, and therefore more positive learning outcomes (Deci and Ryan, 2000c; Ryan and Deci, 2017).

Ryan and Deci have investigated and discussed the variety of reward categories that effect intrinsic motivation, both positively and negatively (Deci, Koestner and Ryan, 2001; Ryan, Mims and Koestner, 1983; Ryan and Deci, 2017). The aforementioned research has spanned over two decades and attests to more than one-hundred experiments carried out over this time. The most salient subcategory of rewards, and often present in the one-to-one piano lesson, are *performance-contingent rewards*. A performance-contingent reward is one that is 'given for reaching a specific performance standard' (Ryan and Deci, 2017, p. 132), for example a graded piano examination which associates a person's reward with the level of their performance. Interestingly this was found to be the most harmful to people's intrinsic motivation of all reward categories as, when there is a performance-contingent reward presented 'people tend to take the shortest path to the rewarded outcome... they choose those behaviors that are easiest to do and/or are most likely to yield the requisite outcome' (Ryan and Deci, 2017, p. 142). This behaviour in the one-to-one piano lesson can, and often does, lead to significant shortcomings in musical knowledge and understanding, as well as technical ability and creativity, as students learn for the exam; exclusively focusing on the

prescribed examination requirements and frequently learning just three examination pieces each year (Evans, McPherson and Davidson, 2013; Taaffe, 2014).

Engagement-contingent and *completion-contingent rewards* are also prevalent in the one-to-one piano lesson. Here, teachers or parents give rewards to students, such as stickers or a treat, if they practise for a set amount of time, stay focused or well-behaved during class, or complete, for example, a set number of scales by a certain date. While these may result in more favourable outcomes in the short term, such as increased practice time, this only lasts while the reward is offered and seen as worthwhile to the student. These types of rewards have been consistently proven to have a significant undermining effect on intrinsic motivation over time for all ages, particularly for children and adolescents (Ryan and Deci, 2017; Ryan, Mims and Koestner, 1983). This behaviour is not conducive to having a lifelong, self-directed engagement in playing piano.

Intrinsic Motivation in the Context of Piano Education

This study sought to harness student's intrinsic motivation without the use of such engagement-contingent rewards. However, this can prove to be a more difficult issue to address with regards to performance-contingent rewards in the one-to-one piano lesson. As discussed in the previous chapter, dominant Western ideologies have led to graded piano examinations having a strong and important hold on piano education and pedagogy in Ireland, and in international contexts, with many teachers, parents and students alike advocating for them (Bridge, 2005; Taaffe, 2014). With a knowledge of the proposed negative consequences of structured examinations, such as a reduction in intrinsic motivation (Ryan and Deci, 2017; Ryan, Mims and Koestner, 1983), and a lack of creativity and musical range due to their regulatory and prescriptive nature (Bridge, 2005; Taaffe, 2014), this study drew from these theories to explore alternative pedagogical approaches to prepare for such examinations with the aim of reducing such negative outcomes associated with examinations and increase intrinsic motivation in students. Therefore, process-focused pedagogy and autonomy- and competence-supportive teaching guided the action research approach, while

simultaneously providing conditions for ‘optimal challenges’ for musical growth and development (Csikszentmihalyi, 2002; Deci, Koestner and Ryan, 2001; Ryan and Deci, 2017).

It is important to note here that, in keeping with the principles of SDT, the participants were given a choice in the type of graded examination they wished to prepare for (i.e., one with an emphasis on classical music or popular music). The details around the methodology are discussed at length in Chapter Four. However, it is important to note at this juncture that while choice of examination-type was built into the dialogical decision-making process, participants were also informed that they were not obliged to take formal examinations and could stop at any time if they wished. As the findings go on to show, all participants chose to participate in graded examinations and most chose to alternate between classical and popular music examinations.

Organismic Integration Theory (OIT)

People not only vary in the amount of motivation they have for a given activity, but also in the type of motivation they have for it, i.e., *why* they perform the activity (Deci and Ryan, 2000b). Organismic Integration Theory (OIT) is concerned with these different types of motivation, specifically the distinct types of extrinsic motivation where people are motivated to participate in activities or behaviours which are not inherently interesting or engaging, but perform them to accomplish a particular outcome (Ryan and Deci, 2017). The four types of extrinsic motivation, according to SDT, are external regulation, introjection, identification, and integration; these differ in their Perceived Locus of Causality (PLOC). For example, people may have an internal PLOC to perform an activity because they see the value of the outcome; the activity is therefore self-endorsed and performed with a sense of volition. Conversely, one can have an external PLOC because they are expected or influenced by others to perform, often because of social or cultural demands. It has been found that the more internalised the motivation is for an activity the more autonomous the person feels while undertaking it, while more externally regulated activities are carried out with a sense of reluctance and apathy (Ryan and Deci, 2017; Deci and Ryan, 2000b).

To explain and differentiate between the different types of motivation, and particularly extrinsic motivation, Deci and Ryan (2000c; 2001; Deci and Ryan, 2000b; Deci, Koestner and Ryan, 2000; Ryan and Deci, 2017) developed the OIT taxonomy of motivation (See Figure 3.1). This illustrates the continuum of autonomy, or non-self-determined to self-determined behaviour, moving from amotivation, through the various types of extrinsic motivation; external, introjected, identified, and integrated regulation, to intrinsic motivation.

Figure 3.1. Based on the OIT taxonomy of motivation (2000a; 2000b; 2001; 2017; Deci, Koestner and Ryan, 2000)

<i>Behaviour</i>	<i>Non-self-determined</i>					<i>Self-determined</i>
Type of Motivation	Amotivation	Extrinsic Motivation				Intrinsic Motivation
Type of Regulation	Non-regulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
Associated processes or characteristics	No value Non-relevant Non-intentional No sense of control Lack of competence	Salience of external rewards or punishments Compliance	Ego-involvement Focus on approval from self or others	Personal importance Conscious valuing of activity Self-endorsed goals	Synthesis of goals/ identifications Congruence Self-aware	Interest/Enjoyment Inherent satisfaction
Perceived Locus of Causality (PLOC)	Impersonal	External	Somewhat External	Somewhat Internal	Internal	Internal

Intrinsic motivation, on the far right of the OIT continuum, is seen as the ultimate form of self-determined, internal motivation (see Cognitive Evaluation Theory above for discussion on intrinsic motivation). On the opposite side of the continuum is amotivation, where a person has no autonomy and is not motivated or driven to engage in an activity. However, extrinsic motivation is more complex and therefore is divided into four sub-categories or levels: external, introjected, identified, and integrated regulation. External regulation is the closest to amotivation; it has an external perceived locus of causality (PLOC) which is contingent on rewards, punishments and/or compliance, but once the reward or threat of punishment is removed, so is the motivation to partake in the activity. Introjected regulation, which is somewhat externally driven, also has low motivational quality. This form of motivation is driven by ego-involvement and approval from oneself or from others; here, an individual's behaviour is influenced by the goal of attaining a certain reputation or status among others.

We then move towards two higher forms of motivational quality: identified and integrated regulation. While still categorised as forms of extrinsic motivation they have an internal PLOC and

are consequently more autonomous and self-determined forms of motivation. Identified regulation occurs when there is a conscious valuing of the activity, it is of personal importance and/or is, either wholly or partially, a self-endorsed goal. Finally, integrated regulation is when there is harmony between one's own goals and values, and those of the activity. In addition, the person perceives performing the activity as their own choice. Deci and Ryan (2000c) noted that 'cultural values, extrinsic motivations, and emotional regulations can become part of the self through the integrative process' (p. 248) and that when someone has internalised the motivation for an activity it becomes a part of their own identity (Ryan and Deci, 2020). For positive learning experiences and outcomes, students should be at this more autonomous, self-determined side of the continuum of motivation when performing non-intrinsically motivating activities.

It is important for educators to have knowledge of the factors that encourage and undermine intrinsic motivation, as outlined in CET. However, an understanding of the four forms of extrinsic motivation (external, introjected, identified, and integrated regulation), are arguably more relevant for educators, where many of the activities we ask students to perform are not inherently interesting, or entertaining, but are beneficial for their cognitive and musical development. For teaching to be successful in these situations, promoting active, self-determined and volitional learning is essential. Deci & Ryan (2000c; 2000b; 2000; 2017) suggest that, while competence and relatedness are significant factors in this, autonomy support is most important for integrated regulation and the internalisation of ideas and values:

To fully internalize a regulation, and thus to become autonomous with respect to it, people must inwardly grasp its meaning and worth. It is these meanings that become internalized and integrated in environments that provide supports for the needs for competence, relatedness, and autonomy.

(Deci and Ryan, 2000b, p. 64)

In addition to the educational benefits outlined above, Ryan and Connell (1989) found in their study on introjection and identification in school children, that there were important differences in well-being between these two regulatory forms. They discovered that introjected regulation was linked to anxiety and a struggle to cope with failures in school, while identified regulation was linked with

enjoyment and positively coping with failures. Ryan and Deci (2017) expanded on this research and observed that, while students who are relatively controlled may appear to have the same levels of motivation for activities as those that are autonomous, students with introjected motivation have reduced performance levels and diminished well-being in comparison to those with more autonomy. While my study is not specifically looking at student well-being, I feel it is an important factor that should be considered in all pedagogical decisions made by educators, and circles back to the importance of relatedness in a student's learning experience; being considerate of one's general enjoyment while learning and ensuring they feel secure and heard within the lesson, which I hope is reflected in the audio recordings of each lesson carried out with the participants of this study.

An Application of OIT to Piano Pedagogy

Within piano education, particularly where graded examinations are prevalent, as they are in Ireland, practising scales is an external demand expected of piano students; an activity many attest to being inherently 'boring' or 'mundane', yet they still, for various reasons, practise them (Comeau *et al.*, 2019). When learning scales, a person who already sees learning piano as a worthwhile endeavour may have fully internalised and assimilated why practising and learning scales is a valuable activity, such as helping with recognising key signatures and improving finger dexterity and speed. These students practise scales by their own choice and remain autonomous in their decision to practise. In contrast, they may practise scales for more external, controlling reasons, such as a teacher or parent implementing a punishment if they do not practise, or for ego-involved reasons such as gaining approval from their teacher or peers; these are less autonomous learners.

Drawing from an application of Ryan and Deci's (2017; 2020) theory of OIT to piano education (see Figure 3.2), I argue that the role of the teacher and the degree to which they support the student's three basic psychological needs (autonomy, competence, and relatedness) is important in all aspects of learning piano. As the process of learning new repertoire takes up the largest portion of lesson and practice time, it is arguably the most vital aspect of practice. It has been found

that some teachers use controlling language and behaviours to get the results they desire; telling the student that they ‘must’ or ‘have to’ learn the piece for their examination or to gain the approval of others (Ryan & Deci, 2017). However, Ryan and Deci (2017; 2020) suggest that this will result in external regulation and a reluctance for students to learn, as illustrated in Figure 3.2. Furthermore, they propose that this will result in negative outcomes in the long-term such as decreased motivation, poorer quality performance and understanding, and an increased likelihood of dropping out, as the literature has demonstrated (Ryan and Deci, 2017; 2020).

As illustrated in Figure 3.2, a student may also be naturally eager to learn a piece of music which they value and enjoy, but if they are not intrinsically motivated to learn in this way, which is often the situation, SDT advises that a teacher should guide the student to internalise, or at least partially adopt, the importance and value of learning new repertoire. This can be done through autonomy and competence-supportive comments and questions, as shown, by providing students with choices in repertoire and in approaches to learning, such as learning by ear or reading notation, and by giving students a rationale for what, how and why they are learning a particular piece or musical element. If a more dialogical approach to teaching and learning is fostered, students may begin to internalise the value of their learning.

As seen from my explication of the research, gaining a deep understanding of OIT, and the four forms of extrinsic motivation it encapsulates, appears to be of immense value to piano teachers, or indeed, to any educator. Many activities in the piano lesson, or undertaken during practice time at home, are performed for a particular outcome, and are not inherently enjoyable. The empirical research indicates that both intrinsic and well-internalised extrinsic motivation is associated with increased student well-being, performance, creativity, and self-determined learning (Deci and Ryan, 2000c; Ryan and Deci, 2017). It would seem then, that it would benefit piano educators to use OIT; aiming to help those students with an external PLOC for engaging in an activity towards an internal PLOC by way of facilitating the internalisation and integration of extrinsic motivation, through relatedness, and autonomy and competence support.

Figure 3.2. OIT taxonomy of motivation applied to learning new piano repertoire

<i>Behaviour</i>	<i>Non-self-determined</i>					<i>Self-determined</i>
<i>Type of Motivation</i>	Amotivation	Extrinsic Motivation				Intrinsic Motivation
<i>Type of Regulation</i>	Non-regulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
<i>Associated processes or characteristics</i>	No value Non-relevant Non-intentional No sense of control Lack of competence	Salience of external rewards or punishments Compliance	Ego-involvement Focus on approval from self or others	Personal importance Conscious valuing of activity Self-endorsed goals	Synthesis of goals/ identifications Congruence Self-aware	Interest/Enjoyment Inherent satisfaction
<i>Reasons for practising</i>	Does not practice	Will get in trouble if they do not practise Must play it for an upcoming exam Their teacher or parent told them they must learn it Will get a treat/ money if they play	Wants to play it for others and impress them with their skills Teacher or parent wants them to learn the piece Will feel bad if they do not learn to play it well	Does not necessarily enjoy practising this piece but would like to be able to play it and sees that learning it will improve their skills	Wants to be a professional musician and knows learning new repertoire is important for this goal. Picked the piece themselves as it was one of their favourites out of the repertoire list	Student's favourite piece Wants to play it for themselves Loves the sound of the piece Enjoys playing the piece
<i>Example of educator's regulation-endorsing behaviour</i>		"I will give you a sticker/sweet for every section you practise" "You must learn this for your exam" "You will get detention if you do not know this by next week"	"I/everyone will think you are great when you can play this piece" "Wouldn't you feel bad if you made lots of mistakes during your concert?"	"What piece would you like to learn?" "This piece is great for practising how to play trills" "This is a little more challenging than your last piece, but you have the skills you need to learn it" "I really liked how you used your arm weight to play that section, you got a very nice legato tone. Now let's work on softening the left hand so the right hand can really sing out, you can do so by dropping your wrist like so..."		
<i>Perceived Locus of Causality (PLOC)</i>	Impersonal	External	Somewhat External	Somewhat Internal	Internal	Internal

Self-Determination Theory (SDT) – Application to Piano Pedagogy

Regardless of whether musical abilities are innate and immutable, it is beliefs about whether they are innate or immutable that seem to matter. Those who believe that their ability is fixed are likely to avoid challenging situations and will not pursue learning, particularly if their ability is low, while those who believe their ability can be improved through effort (a so-called “mastery orientation”) are more likely to pursue challenges, attribute failures to effort rather than fixed ability, and persist in the face of difficulty’

(Evans, 2015, p. 68)

Both parents and teachers play an important role in a student’s motivation and development in school but studies show that autonomy-supportive teachers have the greatest influence over students developing intrinsic or well internalised extrinsic motivation for learning (Chirkov and Ryan, 2001; Ryan and Deci, 2017). Therefore, it is vital that music teachers understand motivation, both as a psychological construct and what motivates each individual student, such as why they are learning piano and attending lessons, and what their musical interests and values are. This knowledge can support educators in creating a high-quality learning environment that fosters enjoyment, good learning strategies, and persistence through challenging stages of learning, which in turn will lead to sustained engagement in learning and help prevent early dropout (Comeau *et al.*, 2019; Evans, McPherson and Davidson, 2013; Evans, 2015; McPherson, 2006; Pitts, Davidson and McPherson, 2000). As there are many variables in what motivates a person to learn an instrument, the SDT framework can shed some light on how motivation can be enhanced. In sum, it can explain a wide range of behaviours and actions and can guide educators on how best to employ autonomy and competence-supportive teaching practices.

Bruner’s Scaffolding of Learning and Discovery Learning Theories

Our aim as teachers is to give our student as firm a grasp of a subject as we can, and to make him as autonomous and self-propelled a thinker as we can – one who will go along on his own after formal schooling has ended.

(Bruner, 1961, p. 22)

Jerome Bruner was a social constructivist and a prominent cognitive, developmental, and educational psychologist who had a substantial output of work and a career that spanned over six decades. Social constructivism's central belief is that knowledge is constructed by the learner and developed through physical and social interactions and experiences (Gage and Berliner, 1998). Bruner was concerned with creating autonomous learners who learn how to learn, not just what they should learn according to their external environment, and for educators to facilitate learning, not just impart knowledge onto students (Bruner 1961). He was largely influenced by the work of psychologists Jean Piaget and, moreover, Lev Vygotsky and his Zone of Proximal Development. Bruner developed his Scaffolding of Learning theory by assimilating his ideas and teaching experiences with the work of others.

Like scaffolding used in the construction of a building, within an educational context, scaffolding is a temporary structured support system where the teacher and student work together to construct new knowledge and develop skills. This is accomplished through tasks that would typically be too difficult for students to achieve on their own. The teacher breaks these tasks down into more manageable, basic concepts or tasks, with an aim to meet and activate prior knowledge, before moving on to more advanced ideas; constantly striving to facilitate student achievement at every level. As the student's knowledge and skills increase, and they become more independent, the teacher's assistance and guidance decrease accordingly (Bruner, 1960; 1966).

The teacher's role, in addition to creating such optimal learning tasks, is to build upon basic ideas by reinforcing information each time it is revisited until the student has a full understanding of the idea as a whole, and to work together with the student, determining when scaffolding is required and when to gradually remove their support; when to offer guidance or partial solutions to problems, and when to step back and not make learning too easy for students (Gage and Berliner, 1998). This brings back to mind the importance of creating optimal-learning opportunities for students (Csikszentmihalyi, 2002; Ryan and Deci, 2017; Valenzuela, Codina and Pestana, 2018).

Scaffolding in Music Education – Application to Piano Pedagogy

Teaching new musical concepts and repertoire that may otherwise be beyond student's current skill level through scaffolded activities was an important part of this research. During each cycle of action research, new repertoire were analysed and broken down by me into more manageable sections and a series of activities, designed around building on students own prior knowledge, were created prior to the student learning the piece. This was done to ensure the activities were optimally challenging and engaging, to bridge the gap between the student's current knowledge and skill levels, and their intended outcome at the end of the year/semester, and to work towards becoming more independent and self-sufficient learners.

Discovery Learning in Music Education – Application to Piano Pedagogy

This study was also heavily influenced by Bruner's concept of 'discovery learning'. Discovery learning motivates and engages students to become their 'own discoverer' (Bruner, 1961, p. 22) through discussions with their teacher, problem-solving and inquiry (Bruner, 1960; Gage and Berliner, 1998). Bruner explains the more one practises various strategies of problem-solving, the more likely they are to be able to apply these strategies to other similar tasks and situations independently.

It is recommended that discovery learning and scaffolding are not employed separately, but simultaneously as complementary approaches – 'the scaffold, like the planks in a ladder, are the helpful statements of the teacher that guide and support the next steps in a discovery learning activity' (Gage and Berliner, 1998, p. 275). Participants of this study were encouraged throughout to discover things for themselves; to analyse a new piece of music and find its 'ingredients' such as the harmonic structures, rhythmic and melodic patterns, and expression markings, etc., or to listen to a section of the piece and try to figure it out by ear, i.e., 'discover' the notes for themselves. Preparing students for analysis was scaffolded too, for example, relevant arpeggios previously

known to the student were revised prior to analysing the harmonies in a new piece; this facilitated connections or discoveries being made by the student in a scaffolded way.

As Bruner said, discovery ‘favors the well-prepared mind’ (1961, p. 22) and, as will be discussed in the findings and analysis chapters, this ‘preparation of the mind’ proved valuable. This level of preparation also carried through to the learning by ear approach where I pre-recorded each piece in small manageable sections that I knew would not go beyond their current skill level, yet still remained sufficiently challenging. These are just two examples of how I simultaneously incorporated scaffolding and discovery learning within my pedagogical approaches.

Summary

As discussed in this chapter, and Chapters One and Two, an overemphasis on formal piano pedagogy that places an importance on Western Classical Music values, such as reading notation, can come at the expense of other valuable music practices, for example learning by ear (Green, 1988; 2002; 2003; 2008; McPherson, 2005; Taaffe, 2014). This study aimed to empirically investigate and create alternative pedagogical approaches which may serve as models for change; approaches which aimed to place equal value on formal and non-formal learning; enhance student’s musical knowledge, skills, and motivation for learning; better meet students’ basic psychological and musical needs; in addition to giving students the tools, both psychologically and musically, required for lifelong, independent learning and engagement in music making. To do this, theory and practice were brought together; drawing on numerous significant theories within the fields of cognitive development, motivation, and education to create and implement these new alternative approaches for teaching and learning.

This chapter discussed how these theories can be applied within educational contexts (Evans, McPherson and Davidson, 2013; Evans, 2015), and in relation to the need to provide structure and by communicating expectations clearly (Jang, Reeve and Deci, 2010; Ryan and Deci, 2017), by creating opportunities for students to become more autonomous by giving them choice

(Comeau *et al.*, 2019; Ryan and Deci, 2017). Moreover, these opportunities can happen optimally when students make discoveries for themselves through scaffolded learning (Bruner, 1961; 1966). Additionally, the benefits for student musical development when teachers understand the eight developmental modes, as outlined by Swanwick and Tillman (1986), can be used to enhance and progress students more quickly through each stage of development.

The role of the teacher is frequently discussed in the literature; the importance of teachers knowing when to step back and allow the student to make their own choices and discover musical connections for themselves, and when to step in to ensure learning is scaffolded, structured, engaging and optimally challenging (Bruner, 1966; Jang, Reeve and Deci, 2010; Ryan and Deci, 2017; Swanwick and Tillman, 1986). As well as providing autonomy- and competence-support and creating an environment which allows the student to feel cared for, important and that their opinion matters to ensure their basic psychological needs are met (Comeau *et al.*, 2019; Evans, McPherson and Davidson, 2013; Evans, 2015; Ryan and Deci, 2017). While the theories discussed in this chapter demand a significant amount of time and effort on the part of teachers, the findings to follow argue that the long-term potential benefits for students' knowledge and skill development and motivation for learning, in addition to their overall enjoyment and well-being, can be infinite.

CHAPTER 4 - METHODOLOGY AND RESEARCH DESIGN

Introduction

In this chapter, I detail the rationale for the choice of methodology to investigate my research questions and the data gathering tools employed. As outlined in Chapter One, the research aimed to, a) investigate ways of enhancing teaching and learning practices in the one-to-one piano lesson, b) identify pragmatic, creative ways in which teachers can incorporate non-formal music learning practices into pedagogy and assessment practices, and c) examine how formal and non-formal approaches can impact students' musical development, motivation to learn and independence. This chapter draws from the literature and theoretical framework, discussed in Chapters Two and Three, and the methodology chosen to address the research problem. After a re-examination of the research questions, I outline the qualitative research design employed to address these questions. Next, I discuss the data analysis framework and process, and discuss the role of reflexivity in this research and the analysis process. I then outline the ethical considerations. Finally, I conclude by providing a brief overview of the chapter and the following findings and analysis chapters.

Throughout the following chapters, the terms formal and non-formal are used to describe the type of learning carried out in the lessons. Drawing from the work of Green (2002; 2008), Folkestad (2006) and others, formal learning is interpreted to mean, in the context of this study, learning through reading notation and musical analysis, predominantly with a focus on developing musical knowledge and understanding, and literacy and technical skills. Informal learning is unstructured learning that takes place outside of formal settings, for example, how popular musicians typically learn through listening to and imitating recordings by ear. Non-formal learning is learning that takes place in a structured environment such as the piano lesson, but where students use informal learning practices such as learning by ear to learn a section of music.

Research Questions

How can pedagogical approaches that include both formal and non-formal learning practices enhance musical knowledge, skills, and motivation for learning in one-to-one piano education?

To answer this overarching research question, the following sub-questions informed the study:

1. To what extent can pedagogical approaches that include both formal and non-formal learning practices in the piano lesson enhance students' musical knowledge and skills?
2. To what extent can pedagogical approaches that include both formal and non-formal learning practices in the piano lesson influence motivation for learning piano?
3. How can the inclusion of non-formal learning practices in the piano lesson enhance students' capacity for independent learning?

The research questions above reside within a constructivist, interpretivist paradigm as researcher and participant are 'interlocked in an interactive process' (Mertens, 2015, p. 19) throughout three years of data collection. Interpretive inquirers 'watch, listen, ask, record, and examine' (Schwandt, 1994, p. 119) and, as it is essential that participant's views are not restricted (Creswell, 2005; 2009), the research design was qualitative. To answer the research questions, a diverse range of qualitative methods and data collection tools were employed to ensure complementarity and academic rigour. To effect change in my practice and in the students' learning experiences, musical development, and motivation to learn, an action research design was employed with students' voices at the centre of this study. Action research was chosen as the primary method of data collection, as this allowed me to use my understanding of the theories outlined in Chapter Three and investigate how these could enhance teaching and learning in the one-to-one piano lesson.

Research Design

As this research is interdisciplinary; connecting the disciplines of both education and music, a qualitative approach was chosen that was applicable to both. To that end, music-specific orientated methods and semi-structured interviews were employed.

Qualitative research has been subjected to criticisms for being ‘too subjective’ or ‘too much based on feelings and personal responses’ (Atkins and Wallace, 2012, p. 20). This, some critics believe, does not produce reliable data in the same way as quantitative methods do. However, Flick (2014) states:

Unlike quantitative research, qualitative methods take the researcher’s communication with the field and its members as an explicit part of knowledge instead of deeming it an intervening variable. The subjectivity of the researcher and of those being studied becomes part of the research process.

(Flick, 2014, p. 17)

While I had to take into consideration my own personal biases to ensure this research is as rigorous as possible, reflection and reflexivity is a critical part of action research (Cain, 2008; Cohen, Manion and Morrison, 2018; Noffke and Somekh, 2010). Cohen, Manion and Morrison (2018) explained that this ‘can be descriptive (personal, looking back at what has happened), perceptive (e.g., emotional), receptive (relating views of others to one’s own views), interactive (linking the past and present to future action) and critical (interrogating the context in which the teacher operates)’ (p. 451). The role of reflexivity within the context of this study is discussed in more detail later in this chapter.

Action Research

Action research is a practical method of exploring and developing an answer to a problem. It is used by teachers ‘to gather information about, and subsequently improve, the ways their particular education setting operates, their teaching, and their student learning’ (Creswell 2005, p. 550). Ultimately its primary aim is to change and enhance teachers’ practice (Cohen, Manion and

Morrison, 2018; Kemmis, 2009; Zuber-Skerritt, 1996) and it, therefore, contributes to the professional development of teachers (Cohen, Manion and Morrison, 2018). This is achieved through a generally small-scale, yet systematic examination of, and intervention on, a 'real world' problem. This is done by monitoring and reviewing the effects of such an intervention; uniting action and reflection, it 'embraces both problem posing and problem solving' (Cohen, Manion and Morrison, 2018, p. 440).

Winter (1996) referred to action research as:

[The] ways of investigating professional experience which link practice and the analysis of practice into a single productive and continuously developing sequence, and which link researchers and research participants into a single community of interested colleagues. It is about the nature of the learning process, about the link between practice and reflection, about the process of attempting to have new thoughts about familiar experiences, and about the relationship between particular experiences and general ideas.

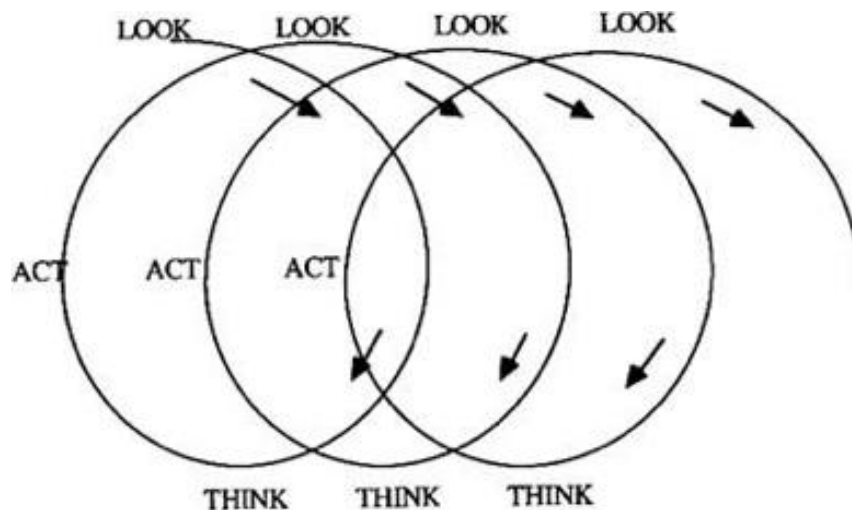
(Winter, 1996, pp. 9-10)

She outlined 'six principles that are central to the action research process':

1. *reflexive critique*, which is the process of becoming aware of our own perceptual biases
2. *dialectic critique*, which is a way of understanding the relationships between the elements that make up various phenomena in our context
3. *collaboration*, which is intended to mean that everyone's view is taken as a contribution to understanding the situation
4. *risking disturbance*, which is an understanding of our own taken-for-granted processes and willingness to submit them to critique
5. *creating plural structures*, which involves developing various accounts and critiques, rather than a single authoritative interpretation
6. *theory and practice internalised*, which is seeing theory and practice as two interdependent yet complementary phases of the change process

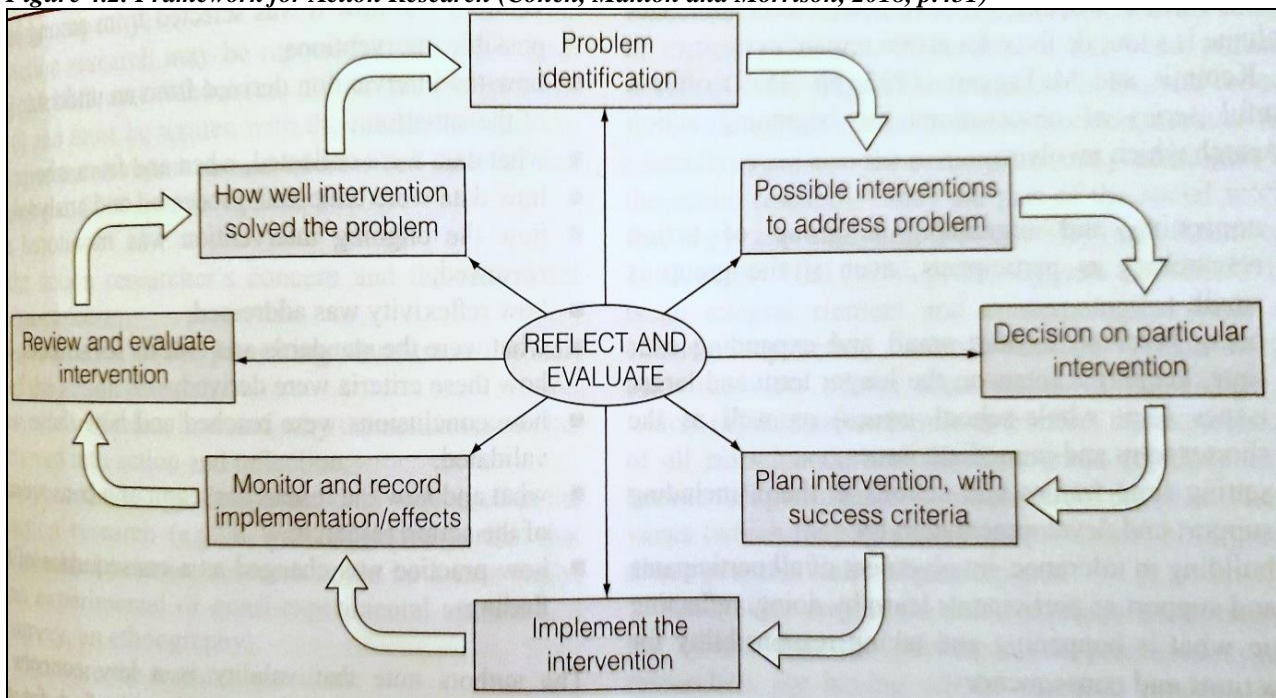
While theory and practice are often viewed as being separate entities, Winter (1996) believes that in action research they need each other and are best realised together as two ‘interdependent and complementary phases of the change process’ (p. 19). Here, in a cyclical progression, theory questions the practice, and the practice questions the theory. Creswell (2005) discussed similar key characteristics of action research, describing them as ‘having a practical focus’ and used ‘to solve an immediate, applied problem’, employed in ‘the educator-researcher’s own practice’, being a ‘collaboration’, often between teachers, students and/or parents, and ‘a dynamic process which “spirals” back and forth between reflection about a problem, data collection, and action’ (pp. 560-561). He compared this process to Stringer’s (1999) ‘look, think, act’ model (p. 568), seen in Figure 4.1.

Figure 4.1. Stringer’s (1999) ‘look, think, act’ model (Creswell 2005, p.568)



Cohen, Manion and Morrison (2018) discussed and analysed several key scholars in action research, such as Lewin (1946), Zuber-Skerritt (1996) and McAteer (2013), in addition to those mentioned above, and combined their ideas, creating an eight-step framework for action research (See Figure 4.2).

Figure 4.2. Framework for Action Research (Cohen, Manion and Morrison, 2018, p.451)



Cohen, Manion and Morrison (2018) described this framework as ‘basic’ and stated that these steps are often recursive and therefore do not necessarily follow a linear pattern as the illustration in Figure 4.2 may suggest. However, as discussed earlier in this chapter, reflection is a central component of action research, and this framework illustrates the importance of reflection, and evaluation, at each stage of the process; a sentiment also echoed by the scholars in this section. Although there are different ‘schools’ of action research, what bonds the different conceptions is ‘the desire for improvement to practice, based on a rigorous evidential trail of data and research’ (Cohen, Manion and Morrison, 2018, p. 441), in addition to the importance of the practitioner being situated in the study, and the aim of empowering individuals and social groups.

Guided by the writings of these scholars, among others, I used these frameworks and key principles to ensure my action research design was systematic and rigorous. This was achieved through, firstly, identifying the problem and researching possible interventions, then implementing, evaluating, and reviewing these interventions during three cycles. At every stage of this process, I continually reflected on my own practice and my students’ development and responses to the approaches employed in their lessons in a reflective diary. Furthermore, I collaborated with my

student participants and designed each cycle, and the interventions used in each subsequent cycle, around their opinions and experiences, in addition to sharing their insights, both positive and negative, over the course of the data collection in the finding's chapters. In Cycle 3 this collaboration was taken a step further as the students were given autonomy over the approaches, they employed to learn their repertoire while I assumed the role of facilitator.

A qualitative approach (Creswell, 2009) employing action research, interview data and audio music files was chosen to obtain the necessary data needed to answer my research questions.

Table 4.1 outlines the stages and steps in this process:

Table 4.1. Research design

Timeline	Cycle	Details
Mar 2018	Cycle 1	Pre-intervention semi-structured interviews with 10 student participants aged between 8-18 years old
Mar-May 2018 (6-8 weeks)	Cycle 1	Action research with same students – 2 pedagogical approaches (Based on HeLP strategy and Simultaneous Learning) were employed with same participants to learn a section of 1 piece
May/Jun 2018	Cycle 1	Post-intervention semi-structured interviews with 10 student participants aged between 8-18 years old
Jan-May 2018 (12-15 weeks)	Cycle 2	Action research with same students – 2 pedagogical approaches (based on HeLP strategy and Simultaneous Learning) were employed with same participants to learn 2 pieces
May/Jun 2019	Cycle 2	Post-intervention semi-structured interviews with 8 student participants aged between 9-18 years old
Jan-Jun 2020 (15-18 weeks)	Cycle 3	Action research with same students – 2 pedagogical approaches (based on HeLP strategy and Simultaneous Learning) were employed with same participants to learn 2 pieces
Jun/Jul 2020	Cycle 3	Post-intervention semi-structured interviews with 10 student participants aged between 10-17 years old
Jun/Jul 2020	Cycle 3	Post-intervention semi-structured interviews with the parents of the 6 student participants.

Sampling and Reflexivity

As the study sought to investigate student learning through an action research approach, piano students from the cohort allocated to me at the School of Music were purposively sampled and invited to participate. Whilst I could have invited other teachers to explore new pedagogies in their

teaching, it was essential that I pilot new approaches first. In that regard, reflexivity was a crucial part of this study. Because of the relationship built with many of my students and my knowledge of their learning histories and backgrounds, purposive sampling was possible. Nonetheless, it was of absolute importance that the students did not feel obliged to participate and were thus volunteers for the study. Therefore, I did my utmost to ensure that they or their parents did not feel forced into participating because of our teaching relationship. To ensure the sample was a purposive sample of ‘typical’ piano students, the following criteria were devised to aid in the selection process:

1. The participants were aged between eight and eighteen years of age.
2. They were preparing to sit a formal graded examination.
3. They had predominantly been taught piano through notation.

Implementation of Action Research

The action research component of this study was implemented during individual student participants’ classes each week. In practical terms, this meant a heavy workload for the researcher as teacher, preparing for each lesson; making recordings (HeLP approach), creating additional preparatory material (SL approach); and keeping notes and analysing audio recordings after each lesson. In prioritising depth over breadth, the number of participants needed to be limited as there would not have been enough time each week to prepare for each student’s lesson, undertake the research and analyse data. Equally, without an adequate sample of participants to compare, it would have been impossible to thoroughly investigate the effect of the teaching approaches as one or two individual cases would not have provided sufficient data (Creswell and Poth, 2018). In this regard, I decided that ten students would be the optimum number as this would ensure a sufficient, varied sample and the study would not be compromised by minor attrition.

Once several suitable students were identified, following the criteria above, the final ten were invited through ‘maximal variation sampling’; ‘a purposeful sampling strategy in which the researcher samples cases or individuals that differ on some characteristic or trait’ (Creswell, 2005,

p. 204). It was important that I selected a sample that differed in age, level, ability and learning preferences, and who were willing, with their parents, to be interviewed and open to exploring new learning approaches in their piano lesson. Once the final ten were identified, they were invited to participate in the study. As expected, several participants dropped out of the study over the three-year period for a variety of reasons, but six remained for the full duration. Therefore, this study focuses on these six students and their progression over this time.

Choice of Approaches

To answer the Research Questions, it was essential to investigate an alternative formal and non-formal approach, both individually and comparatively. The HeLP strategy was chosen for the non-formal approach as studies have shown that the informal learning practices of popular musicians' increase student engagement (Green 2002, 2014) but this has not been investigated exclusively within the context of piano tuition, either in Ireland or internationally. While the HeLP strategy is based on the informal practice of learning by ear it teaches students in a more structured, non-formal way than how most popular musicians typically learn.

The Simultaneous Learning approach was chosen as there is little research conducted internationally on the approach, yet it has gained much praise from the instrumental teachers who have implemented it in their teaching. Simultaneous Learning was also chosen as the formal approach as it focuses on encouraging students to make musical connections in the pieces they are learning between the different elements of music such as scales, rhythmic patterns, theory, technique, etc (Harris, 2014; Harris and Crozier, 2000); one of the main areas which the informal learning practice of learning by ear is predominantly lacking (Green 2002).

However, as the SL approach is all encompassing, and designed as an approach for teaching an entire lesson, the approach was modified for the purposes of this study which focused on teaching repertoire only. Therefore, an 'analytical approach', as it will be referred to throughout the thesis, was adopted. While this analytical approach was guided by the principles of the SL

approach, we did not explore the compositional and improvisatory elements, or approach sight-reading and scales, in the way that SL encourages. These extra elements were beyond the remit of this study. This analytical approach, in the context of this study, focused on learning repertoire. This included the student analysing a piece of music by looking at the notation, identifying the key of the piece, harmonic structure, form, and rhythmic patterns, and making musical connections between the piece's 'ingredients'. Through this analysis, in addition to gaining a deeper knowledge and understanding of the piece, it allowed students to identify difficult passages, and encouraged them to identify and implement effective strategies to address these potential problem areas. As the research progressed, the analytical approach developed and also included gaining an aural awareness of these elements as the students' aural skills developed.

Overview of Action Research Process

This study comprised of three cycles of action research, with each cycle consisting of a planning phase, an action, and a reflective phase. In the planning phase the approaches to be implemented were researched and chosen, the musical repertoire was analysed by me to assess what approach would best suit each piece, or section of a piece, and I then designed and created multimedia resources around this.

For example, if a piece was going to be learned by ear, I divided the piece into manageable and appropriately sized 'riffs' for the student and I made recordings of each of these riffs in advance of our lessons. I labelled and burnt these recordings onto a CD (Cycle 1) and, later (Cycle 2 & 3), uploaded online for participants to access at home. As the pieces being learned by the students were chosen in preparation for a specific examination, it was essential I created recordings for these specific pieces, and therefore could not use any of the audio material provided by Green (2014) in her HeLP publication. I analysed each piece both harmonically and structurally and designed the best approach to support the student in making musical connections in the piece while analysing it. This included revising relevant arpeggios and scales that feature in the piece prior to introducing the

piece to the student and creating resource sheets that further assisted in the student making connections, such as realising the form of the piece, or patterns in the music, that may not be obvious in the original sheet music. The resource sheets I created were designed to act as supports for harmonic analysis (See Appendix A and B for examples of these resource sheets).

During each stage, the new pedagogical approaches, and the resources created in the planning stage, were employed to learn a section of a piece or, in some cases, a complete piece. The structure of each lesson, with each individual student, varied from week to week. This depended on what our goal was for that lesson, how the student was feeling on the day, and other factors such as upcoming performances or examinations at school. Sometimes we may work on scales and arpeggios related to what we were learning, and other days we would start straight into repertoire, especially when the student was happy with their practice that week and was eager to share their progress. Other times the students would ask to start a new section; this was usually a dialogical process between student and teacher to decide the structure of our lesson. However, I tried to ensure both formal and non-formal learning approaches were employed in each class. This was to ensure variety to help keep lessons interesting for the student, and that different pieces, or sections of pieces developed simultaneously.

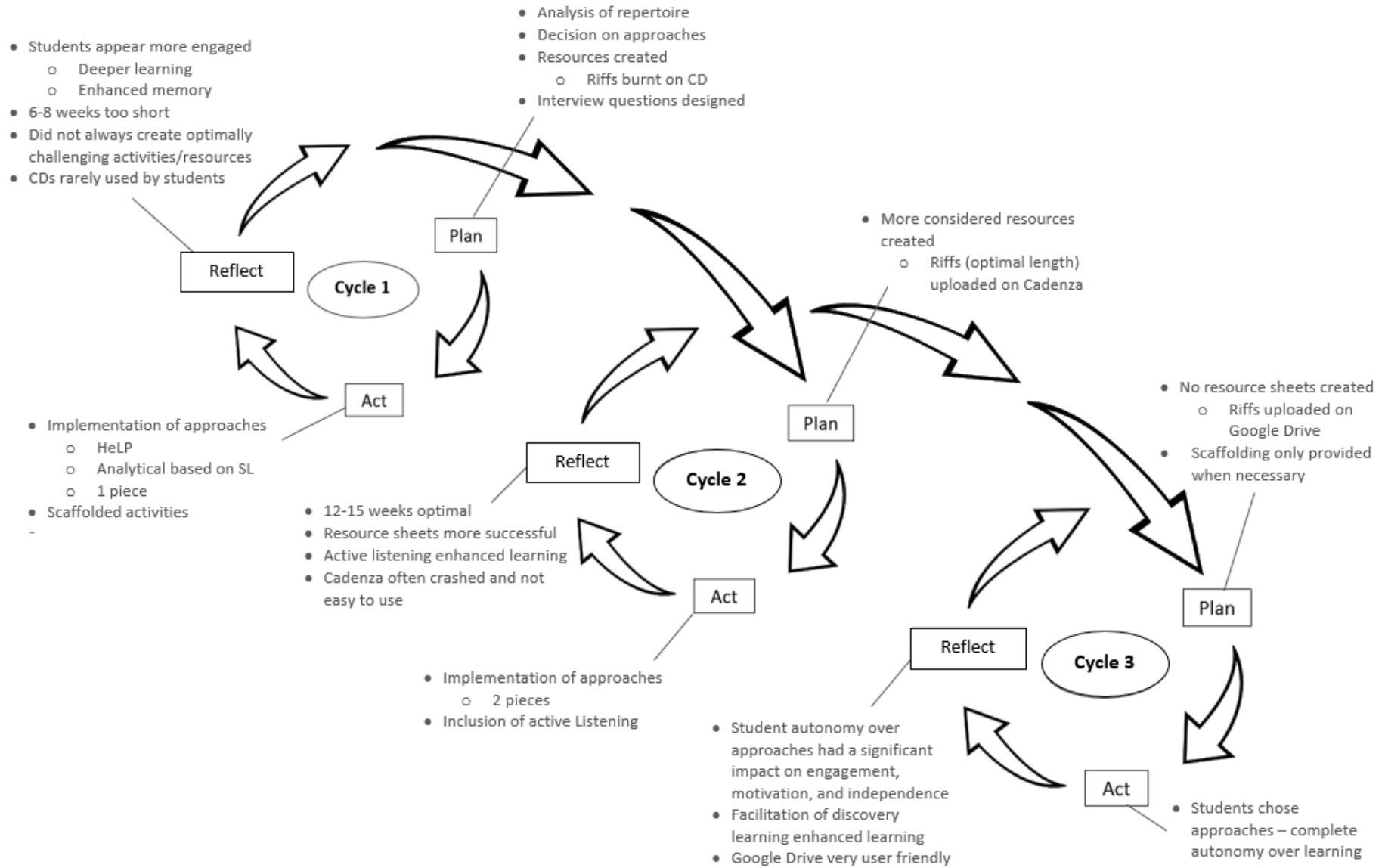
At the end of each lesson, I wrote short notes in my journal on any noteworthy observations or important developments that occurred during the lesson. As I often had another student immediately after the student participants in this study, I did not have time to write lengthy notes. During the days following the participants' lessons, I sat down and listened back to each lesson that week and reviewed the notes I had written at the end of the lessons. I then wrote more detailed journal entries on MS Word; having my notes digitised made analysis easier as I could input these notes into NVivo and quickly search key words and phrases.

All student lessons were audio recorded throughout the research timeframe. This was necessary as music is a temporal art which passes in time, and it would otherwise be impossible to capture each student's musical development and learning over time. This allowed me to track the

students' progress and examine how they approached learning and how their skills developed over each cycle, in addition to any developments in my teaching or areas that needed to be addressed. It also allowed me to transcribe, when necessary, any musical examples of their performance of note. Keeping a journal in this way, and listening back to each lesson, was an interesting exercise, as I made important observations about my teaching approaches, through listening to and reflecting, that I otherwise may have never noticed.

My journal entries helped guide the teaching and learning process throughout this action research project, and the analysis of the data at the end of each cycle. Reflection was an ongoing part of each stage of the process, but at the end of each cycle the data gathered from the lessons and my reflective journal were analysed and triangulated with the findings from the pre- and post-intervention interviews with the student participants. Triangulating the data was necessary to validate the accuracy of my findings (Creswell, 2005, p. 252). These findings informed the subsequent cycle, and the process repeated for Cycle 3 with the findings from Cycle 2. Furthermore, as I was writing up the case studies the journal entries were continually used as a source of reference to ensure my accounts were accurate. The observations made on my teaching, through journalling, and the impact these had on student learning are discussed in David's case study in Chapter Six in particular. An overview of the action research process and key moments from each cycle are illustrated in Figure 4.3. and outlined and discussed in more detail in Appendix C (Key changes in each Cycle are highlighted in yellow).

Figure 4.3. Action Research Process



Action Research – Cycle 1 – March-May 2018

The preparation for Cycle 1 was significant as I thoroughly researched a range of pedagogical approaches and decided on the two most applicable approaches that resonated with the epistemological rationale for the study. For me as teacher, I needed to learn how to employ these approaches and to consider which multimedia resources might enhance learning according to the ages and stages of each student's learning. While there was a positive response from the students to both HeLP and SL approaches – particularly learning by ear – I quickly learned that the timeframe I had allocated to explore both approaches was evidently too short. In practice, this meant that I was under pressure to get content covered in lessons and therefore resulted in me hastily trying to make progress and rarely facilitating any discovery learning for the students. In addition, students struggled to put pieces hands together as they did not have a sufficient aural memory of the complete piece. On much reflection, I realised that for the next cycle, I would need to spend more time on aural skills and active listening, which takes patience and time.

Action Research – Cycle 2 – January-May 2019

The findings from Cycle 1 informed the second cycle of action research which was altered slightly in the hope of enhancing the learning experience further; most significantly the timeframe allocated to the action research process was increased from six-eight weeks to twelve-fifteen weeks. This allowed more time to be spent on listening to chosen repertoire before both approaches were implemented, enhancing students' familiarity with the pieces. All students reported this being helpful in their learning. Furthermore, the extra time was particularly helpful for the analytical approach, as it was now possible to spend more time making connections between the repertoire being learnt and other areas such as scales and arpeggios. In addition, this helped me improve my facilitation skills, particularly with regards to discovery learning. Making these changes allowed more time for the students to obtain a deeper musical understanding and knowledge of their pieces.

As the second cycle progressed, I observed how well both approaches worked together so these were employed simultaneously at times to help students learn their chosen pieces. Moreover, I noted that the students' enthusiasm for the new approaches, particularly the analytical approach, increased, therefore suggesting that novelty did not have a significant impact on the findings in Cycle 1.

Action Research – Cycle 3 – January-June 2020

As the students became more comfortable with the approaches, I decided to give them complete autonomy over their learning in Cycle 3. In addition to choosing the pieces, they determined how they would learn each piece and the approaches they could employ to do so. I still prepared for this cycle by analysing the pieces myself and recording riffs to accompany each piece, in addition to a complete recording of the pieces, so the students could use them if they wanted. Because the students' independent ability to analyse a piece of music had increased, I did not need to create any resource sheets. Interestingly, each participant continued to use active listening in their learning and employed a range of approaches to learn their pieces. Furthermore, I observed, when students gained more autonomy over their learning, it appeared to have a significant impact on their engagement, motivation, and independence. In terms of my role as teacher, I assumed the role of facilitator from the beginning of Cycle 3. This meant that I only intervened in the teaching and learning process when necessary.

Covid-19 Implications

The Covid-19 pandemic hit in the middle of data collection in Cycle 3. Due to severe lockdowns I had to quickly adapt so I researched the best approach to online instrumental music teaching and did trial lessons with other students using various platforms such as Skype, ZOOM and WhatsApp before deciding the best for my use. ZOOM worked best overall and had a useful feature of being able to share my screen and annotate the document in real-time. The studies of Kreuse *et al.* (2013),

Orman and Whitaker (2010) and Dammers (2009), among others, provided excellent practical support and guidance when trialling these platforms and ensuring little impact was made on my teaching approaches and the students' learning. For example, the need to email any new sheet music to students well in advance of each lesson to give them a chance to print it. This ensured both student and teacher had materials needed in advance of the class (Orman and Whitaker, 2010). Dammers (2009) provided useful technical tips such as asking students to wear headphones to prevent an echo due to latency¹ issues.

Accompaniment was also not an option because of latency but, as Dammers (2009) suggested, to get around this, I used pre-recorded audio files which the student played along to. Fortunately, I had already pre-recorded all the students' pieces which they then had on their digital devices so this was relatively easy to implement.

While all participants felt that online lessons were not as good as face-to-face lessons, the change had little impact on their learning overall, with some saying they learned just as much as they would have normally. Fortunately, the participants had gained significant independence and autonomy over their learning prior to moving online, so this stood them in good stead. Interestingly, Dumlavwalla (2017) noted in her findings on transitioning to online piano lessons, that students who are more independent find online lessons easier than those who are teacher dependent. Therefore, it is likely that online lessons did not have as big an impact as they would have if implemented during Cycle 1 or 2 when the participants in this study were less independent.

¹ Latency is the speed in which audio and/or video moves from one point to another. For example, high latency means it takes longer for my data to travel to my student's device, resulting in a number of seconds between the time I speak or play, and my student hearing and seeing it.

Student Interviews

The focus of this research was to explore the impact of alternative pedagogical approaches on students' musical development, motivation, and engagement to learn. Therefore, students' voices needed to remain at the centre of the study. It was imperative that students could 'talk openly about their experiences' (Creswell, 2005, p. 47) and give in-depth, personalised answers to the interview questions that were not influenced by predefined answers. Semi-structured interviews were chosen to facilitate these requirements and were carried out with student participants prior to initiating the action research phase of the study and post-intervention, after each cycle. Pre-intervention interviews were chosen to provide an understanding of each participant's musical background, musical interests and learning preferences before new teaching approaches were employed (See Appendix D for interview guide). From the post-intervention data, the effect, if any, of the action research could then be analysed and compared to the findings from the previous interview(s). This would identify any changes in perceived learning experience, motivation, and skill attainment prior to and after the action research interventions.

Parent interviews

After the three cycles of action research were completed, I included the third key stakeholder in a student's instrumental education, and a key player in reproducing ideology: the parent. It was important for this study to elicit parental opinions on piano education and any assumptions of instrumental learning. Furthermore, parents were able to provide a valuable insight into their child's learning at home over the duration of this study and to discuss any developments they noticed, be they musical or otherwise. Therefore, semi-structured interviews were conducted with the parents separately to their child's interview. Both parents were given the choice to be interviewed, but in all cases, it was the mother who volunteered (See Appendix E for interview guide).

Data Analysis

Framework for Analysis

The qualitative data produced from the interviews and action research were analysed using an inductive approach through thematic analysis; ‘going from the particular’ by reading through the detailed data in the transcriptions and making observations on these, before moving ‘to the general’ and establishing ‘codes and themes’ (Creswell, 2005, p. 231). The data from the student participant interviews and individual cases in the first cycle of the action research project were transcribed and a preliminary analysis was carried out individually first to get a general sense of the data. The data were analysed by numbering each statement in relation to the question or topic mentioned and then coded; this allowed for easy retrieval of the data. A cross-case analysis was done of all the data collectively, as recommended by Creswell and Poth (2018, p. 100).

This was an iterative process, so, as discussed previously, these findings informed the second cycle of action research and second round of post-intervention interviews. This data was analysed in the same inductive way as the previous data. The major ideas and findings from all data produced over the course of the research were then combined to form a small number of important themes which emerged to answer the Research Questions. These findings are discussed in detail in the following chapters.

Interview Data Analysis

All interviews were transcribed verbatim. The data collected from Cycle 1 & 2 were first analysed manually using Microsoft (MS) Word and Excel, and mind mapping, and then, along with Cycle 3, through the Computer-Assisted Qualitative Data Analysis Software (CAQDAS) package NVivo. While this is a more time-consuming approach than only using NVivo, it allowed me to get closer to the data and ensure a more thorough analysis was carried out. NVivo was the CAQDAS package of choice as it appeared to be the most popular and extensively written about software package, and

Mary Immaculate College had a license for this programme. NVivo training was also provided by Mary Immaculate College during this research project; I attended both the introductory and advanced training days. By Cycle 3 I was proficient in NVivo and therefore only employed it at this point of the study. Fortunately, manually analysing the data gathered in Cycle 1 and 2 was a manageable task.

NVivo Coding

Prior to inputting data into NVivo I prepared the interview transcripts with heading styles in MS Word so it would be ready for use with the auto-coding function on NVivo (See Appendix F for Sample interview transcript colour-coded for further ease of analysis in NVivo). I then imported the data into relevant folders and assigned each participant with individual case nodes before setting up and assigning attributes to them. Finally, I auto-coded the interviews. This form of structural coding allowed me to examine and compare multiple participants responses to the same question with ease. Using this feature allowed me to efficiently manage this routine form of coding leaving me more time to focus on analysing the participants responses to the interview questions (Bazeley, 2021). (See Appendix G for a detailed step-by-step guide on this initial set-up process).

Once the initial set-up phase was complete, I started the manual interpretive coding process. As is conventional with a thematic analysis approach, I created three folders in NVivo for my three phases of analysis:

- Phase 1 – Open Coding
- Phase 2 – Developing Categories
- Phase 3 – Developing Themes

I first created ‘a priori’ or ‘deductive’ nodes (Saldaña, 2013). These were created from the literature on formal and non-formal learning, as well as my own experience of teaching. These included codes such as ‘autonomy’, ‘independence’, ‘dominant ideologies’, ‘learning by ear’, learning by

notation', etc. Each node was given a description of what content qualified to be assigned to this node and to give 'guidance regarding its application' (Mihas, 2019, p. 3). A codebook was then created to keep track of each node and its description to aid in the coding process (See Appendix H for codebook from Phase 1 – Open Coding).

I then systematically went through each interview with each participant, beginning with Ann's pre-intervention interview from Cycle 1, and began coding into the 'Phase 1- Open Coding' folder – creating nodes, naming them, and providing a 'description' of each node. I chose open coding or 'initial coding' (Saldana, 2013) for my first phase of analysis, which included simultaneous and in vivo coding. Initial coding allowed me to inductively analyse and reflect on what the participants said without being too influenced by the literature. It also allowed me to code and recode freely as analysis progressed. As this study has several areas of interest and the participants occasionally 'illustrated points related to more than one of those areas', simultaneous coding, applying 'two or more different codes to a single qualitative datum, or the overlapped occurrence of two or more codes applied to sequential units of qualitative data' (Saldaña, 2013, pp. 80-82), was sometimes required.

As students' voices are central to this study, in vivo coding was also necessary to ensure their voices remained throughout all stages of analysis. This form of coding was used when appropriate. For example, 'finish it off' was said numerous times with regards to completing graded examinations and getting to Grade 8, and 'hear it in my head' was mentioned by several participants when they performed a piece they learned by ear. In vivo codes are characterised in the codebook (Appendix I) using inverted commas. However, while in vivo codes were important, they were not chosen as the primary method of analysis as the researcher-teacher's voice and interpretations was also essential. Furthermore, it is important that the researcher remains flexible and open to other subtleties in the data (Bazeley, 2009). Saldaña (2013) warned that overdependence on in vivo coding 'can limit your ability to transcend to more conceptual and theoretical levels of analysis and insight' and therefore is often best used in conjunction with other strategies (p. 95).

Throughout the coding process I used analytical memos in NVivo to keep track of key points made in the interviews and continuously wrote reflective notes on ideas which were stimulated from the data. Once I analysed each case individually, I looked at the responses to each interview question. This helped verify my coding (see Appendix I for a detailed account of the analysis process and the steps taken) and seek potential common themes across the cases. In addition to keeping memos, I used mind maps to help link the different codes into potential categories in phase two of the coding, and categories into two main themes during phase three.

Once the themes were identified I reviewed these to ensure they formed a coherent pattern before reviewing the entire data set again. This was done ‘to ascertain whether the themes ‘work’ in relation to the data set’ and ‘to code any additional data within themes that has been missed in earlier coding stages’ (Braun and Clarke, 2006, p. 91). Finally, these themes and the data within them were organised, analysed, and formed into a coherent and detailed account which addressed the research questions. These findings and themes are discussed in the forthcoming chapters.

Reflexivity

Reflection is an essential part of action research and occurs throughout the process (Cain, 2008; Cohen, Manion and Morrison, 2018; Noffke and Somekh, 2010). However, Atkins and Wallace (2012) and Cohen, Manion and Morrison (2018) suggest that conducting action research goes beyond reflectivity and calls for reflexiveness, as understanding the practitioner-researcher role within the research process, and the effect the researchers own personal and professional experiences has on the research, is an essential part of action research.

Reflexivity demands that the researcher reflects on and evaluates not only their own impact on the research, but also how such things as personal values, past experiences, attitudes and assumptions might impact on the research.

(Atkins and Wallace, 2012, p. 127)

Creswell (2014) furthered this and suggested that the importance of reflexivity and the researcher's role in a qualitative study, and how reflecting on past experiences, particularly with the research problem in question, is 'more than merely advancing biases and values... but how the background of the researchers actually shape the direction of the study' (p. 186). To address this, my teaching philosophy is provided in this chapter to provide readers with an insight into how my own experiences as a teacher and student have shaped my epistemological and ontological viewpoint, which undoubtedly had an impact on the specific research that was carried out (the what, the why and the how). In addition, my reflections on the research process and how my teaching and pedagogical decisions impacted the participants and the decisions made in subsequent cycles, are intertwined with the data and the discussion of the findings in Chapters Five-Eight.

Through discussion, reflexivity, collaborative inquiry with the student participants, and analysis of the data collected over the three years of action research, evidence of teaching and learning practices through the implementation and development of alternative pedagogical approaches will be provided in the Chapters Five-Nine (Cohen, Manion and Morrison, 2018).

Ethical Considerations

Before commencing my study, ethical approval was granted by the Mary Immaculate College Research Ethics Committee (MIREC). This process involved; being vetted by the National Vetting Bureau, which occurred on 23rd August 2017; signing a MIC Child Protection Form; and completing a comprehensive MIREC application in which all aspects of my research methods were thoroughly explained and accompanied, where necessary, by supporting documents. Great care and consideration were taken when preparing this application and MIREC approval (A18-009) was granted on 23rd February 2018. In Autumn 2019 it was felt that further data was required to answer the research questions in the form of video recordings and semi-structured parent interviews. Therefore, a second MIREC application was submitted on 4th October 2019 and further ethical approval was granted for this final phase of the research on 10th October 2019 (A18-009 - Phase 2).

Assent and Consent

This study was predominantly undertaken in a private School of Music in the West of Ireland. Before requesting access from the gatekeepers (the directors) to the research site, I met with them to explain their role in the research, the details of the student participants' involvement in the study and to request permission to undertake my research there.

Assent was obtained from the participants of this study, and consent from their parent(s). This was achieved by firstly discussing the study with them verbally, ensuring they understood the research process, and following up with information sheets and consent forms (See Appendix J). The participants were then given a week to read these documents and those wishing to volunteer in the study returned the signed consent forms within this timeframe. Every effort was made to ensure the information sheets and consent forms for the young participants were aligned with their expected reading ability.

The study commenced when the consent forms were received. However, I continued to ask verbally, at every stage of the study, if the students were happy to continue participating. I ensured that the students knew participation was voluntary and that there would be no repercussions if they opted out of the study at any stage. This allowed the participants to feel comfortable with opting out of the study if they wished to do so.

Concluding Thoughts

This chapter discussed the research design, the action research process, data analysis procedures, and ethical considerations employed to address the research problems outlined in Chapter One. The research was carried out over three years and a diverse range of qualitative data collection methods were employed including three cycles of action research which included audio recordings of lessons and a reflective journal, in addition to pre- and post-intervention interviews with student participants, and a final post-intervention interview with their parents.

In the following chapters the findings from the action research project and interviews are presented and discussed. Three case studies are presented in Chapters Five, Six, and Seven: Ann, David, and Rita, respectively. The learning development and experiences of these three student participants are discussed to demonstrate the key findings from this research. These three cases represented differing, yet typical piano students at the beginning of this research. To illustrate their musical development and changes in their motivation and engagement over time, I focused on key learning and teaching moments that I identified throughout the three cycles of action research. Audio and visual examples, and interview excerpts are shared in each case to further illustrate these findings. These case studies are followed by Chapter Eight which focuses on the student voice and provides the aggregated findings from all the interview data.

CHAPTER 5 - CASE 1 – ANN – FORMAL AND NON-FORMAL LEARNING

Introduction

I tend to go away and look at the patterns more than normal now. Like, you know, before you'd just go away and play it but like now I'd kind of be analysing it more like with the patterns and what's happening like if there's octave jumps or whatever, and by listening to it as well, I tend to listen to a piece first before I'd play it, you know?...I feel more confident reading sheet music now because if you listen to it before then you just know like, you know what I mean?

(Ann – Cycle 3 – Post-intervention interview)

This chapter illustrates Ann's experiences of the alternative formal and non-formal approaches, implemented throughout the three cycles of action research, and demonstrates how these approaches were implemented in practice with an intermediate-advanced student. The interview excerpt above demonstrates Ann's growing confidence in her reading and musical analysis skills at the end of Cycle 3; her reference to 'analysing it more' indicates a development in her musical understanding, knowledge, and skills, and, moreover, her reading skills. As expressed in this quote, formal and non-formal approaches played an equally important role in Ann's musical development, and her success as a learner and musician. In this chapter I provide a detailed account of the impact non-formal learning had on her musical development and how this impacted her formal learning skills, particularly her reading skills. Furthermore, this chapter provides an insight into how formal and non-formal approaches can work together and how the combination of both approaches led to Ann independently learning a Grade 7 piece.

Before discussing the significant development in Ann's musical skills, independent learning, and motivation to learn, I examine Ann's musical development and learning experiences over the previous two cycles that preceded this moment. Firstly, her experiences of the non-formal HeLP approach (learning by ear) in Cycle 1 and Cycle 2 are discussed. This is followed by a discussion of Ann's experiences of the alternative formal, analytical approach, which was adapted from Paul Harris's (2014) Simultaneous Learning approach, as discussed in more detail in Chapter Four.

Through this approach we conducted a musical analysis of a chosen piece during each cycle. These sections detail Ann's learning experiences and track the impact of these alternative pedagogical approaches on her musical development. Furthermore, Ann's development demonstrates how her learning experiences equipped her with the tools necessary to partake in independent learning. A detailed insight into Ann's independent learning process, and a discussion on the impact of non-formal pedagogical approaches on her musical development, is provided at the end. Interview, visual and audio excerpts from Cycles 1-3 are provided and examined throughout to illustrate these findings.

Table 5.1 provides an overview of the pieces Ann learned as part of this project, and in preparation for her graded examinations, most of which will be discussed in this chapter. In addition, this table provides some relevant information on her musical background, and her ages throughout the duration of this study to provide further context for the reader.

Table 5.1. Student Profile - Ann

Student Name	Ann
Age at start	13
Age at end	15
School class at start of project	1 st year, secondary school
Cycle 1 - 2018	RIAM Grade 5 Piece: <i>Etude Op. 47, No. 15</i> by Stephen Heller
Cycle 2 - 2019	RIAM Grade 6 Piece 1: <i>Waltz in E minor</i> by Benjamin Britten Piece 2: <i>Fantasy No. 1 in D</i> by Georg Philipp Telemann
Cycle 3 - 2020	RIAM Grade 7 (& Jnr Cert music) Piece 1: <i>Sonata in F minor, Op. 2, No.1, 3rd mvt.</i> by Ludwig van Beethoven Piece 2: <i>Gigue</i> from <i>Suite in D minor HWV436</i> by George Frederic Handel
Years of tuition (end of project)	11 years
Years with me (end of project)	9 years
Background	Ann began learning piano at a young age and participated in RIAM graded examinations from the beginning. She has strong aural ability and memory skills. She has a keen interest in playing popular music but enjoys playing most exam pieces also. For many years, Ann exhibited nervousness at examination, but this appeared to reduce significantly from 2019 (Cycle 2) onwards. Neither parent plays an instrument now, but her mother played up to Grade 2 piano as a child. Both parents feel exams are important.
Other instrument(s)	Sings but no formal training. Did group classes in guitar for 1 year.

Non-formal Learning Experiences

Prior to the study, Ann was not accustomed to learning pieces by ear in our lessons. However, the following excerpt from the initial interview demonstrates Ann’s willingness and enthusiasm to learn in new ways:

Aoife: We are going to do a lot of learning by ear now, how do you feel about it?

Ann: Very, very happy!

(Ann – Cycle 1 – Pre-intervention interview)

Ann's enthusiasm for learning by ear continued throughout the course of this study. In an excerpt from her Cycle 3 post-intervention interview, below, she explained how she found learning by ear more engaging and motivating compared to reading notation, and that she was more likely to set goals for herself, and exceed them, when using this approach:

Aoife: Can you tell me how you feel about learning piano by ear now?

Ann: Oh well I definitely think it's very, like it's enjoyable. It's not, you know, like, long or slow or anything, you know? You kind of, like, it gives yourself little goals to hit by the end of the day, by listening to this part today or, you know, another part tomorrow, because, yeah, I just felt it motivated me a lot more than just reading the sheet music.

Aoife: So, would you set yourself goals with reading in the same way or, before, we'll say?

Ann: No. No, I definitely just do more goals with listening [laugh].

Aoife: Yeah, and why do you think that is?

Ann: Because I get bored very easily so looking at a sheet of music wouldn't be as entertaining as listening to it [laugh].

(Ann – Cycle 3 – Post-intervention interview)

The following subsections give an insight into how Ann learned pieces by ear during Cycle 1 and Cycle 2 and how, although it took her several weeks to adapt to this new approach to learning, her aural skills and approach to learning by ear developed significantly over these two cycles.

Cycle 1 – Étude

While Ann was enthusiastic about learning by ear, it took her some time to adjust to using the HeLP approach. [Ann - Audio Excerpt 1.1](#) illustrates Ann's first attempt at learning 'Riff 1' of *Étude*, shown in Figure 5.1. The only information given before starting was that it was played with left hand (LH). It is evident that she listened at first and quickly figured out the starting note. However, while she focused on getting the correct pitches, her rhythm was inaccurate. As you can hear Ann was inclined to play on her own and appeared to not fully listen to the recording; instead playing what she thought she heard. On reflection of Ann's first encounters with this approach, I realised that gaining familiarity with the piece as a whole, prior to learning, may have helped avoid these inaccuracies. Despite this, the ear playing approach was successful and, even after a week of not

practising, Ann remembered what we covered the previous week after listening to the recording once. This type of recollection did not occur for Ann when learning through notation.

Ann continued learning the following two riffs up to bar 16 in the same way (See Appendix K for complete sheet music) and in lesson three Ann was asked to play the complete melody line from bar 1-16 at the beginning of the lesson (Listen here to [Ann - Audio Excerpt 1.2](#)). Excluding one repeated G which Ann failed to play in bar 14, this was an accurate performance.

Ann explained that she did not listen to the recordings at home for the first few weeks, instead relying on her memory, but after lesson six she began to use them and demonstrated her potential to partake in independent learning, as she learned bar 17-28 by ear at home using these recordings. Her performance of this was much better and she only needed guidance with fingering as there was a range of two octaves in this short passage; this made it difficult for her to determine suitable fingering. In her Cycle 1 post-intervention interview, she informed me that playing by ear was her favourite way of learning up to this point.

Figure 5.1. Bar 1-15 of Étude illustrating Riff 1-3

The image shows a musical score for the first 15 bars of an Étude. The score is written for piano and includes the following details:

- Tempo and Expression:** Adagio e molto espressivo, pp (pianissimo).
- Key Signature:** G major (one sharp).
- Time Signature:** 3/4.
- Bar 1:** Features a trill in the right hand and a bass line starting with a triplet. A red bracket labeled "Riff 1." spans the first two bars.
- Bar 4:** Continues the trill in the right hand. A red bracket labeled "Riff 1." spans the first two bars.
- Bar 7:** Continues the trill in the right hand. A red bracket labeled "Riff 2." spans the last two bars.
- Bar 10:** Features a trill in the right hand. A red bracket labeled "Riff 2." spans the last two bars.
- Bar 13:** Features a trill in the right hand. A red bracket labeled "Riff 3." spans the first two bars.
- Other Markings:** p (piano), cantabile, and various trills and triplets throughout the score.

Cycle 2 – Waltz

Ann began to listen to the recordings more closely in Cycle 2; this resulted in accurate imitation. As you can hear in her first attempt at learning *Waltz* ([Ann - Audio Excerpt 2.1](#)), she easily found the pitches of bar 1-4 right hand (RH) after intently listening to two repetitions of Riff 1 (See Figure 5.2 for an excerpt of the sheet music). This ease at picking sections up by ear continued throughout Ann's learning of this long piece. It is important to note, however, that we used a combination of learning by ear and musical analysis to learn it as there were some dense harmonic textures in

sections, for example in the Coda shown in Figure 5.3, that would have been difficult to pick up by ear.

Figure 5.2. Sample of Waltz by Britten annotated with riffs 1-4.

The image shows a musical score for a waltz by Britten, annotated with four riffs. The score is in 3/4 time, key of D major, and consists of three systems of music. Riff 1 is marked in red and spans measures 1-4. Riff 2 is marked in red and spans measures 5-6. Riff 3 is marked in red and spans measures 7-8. Riff 4 is marked in red and spans measures 9-10. The score includes dynamics such as *p*, *dim.*, and *pp*. The bass line includes fingerings (1, 4, 5, 3, 4, 5, 4, 5, 4) and pedaling instructions.

Figure 5.3. Example of dense harmonic textures in Waltz

The image shows the Coda section of a waltz, starting at measure 88. The score is in 3/4 time, key of D major, and consists of three systems of music. The first system (measures 88-93) is marked *sfz* and includes the instruction "with Ped.". The second system (measures 94-99) is marked *fz* and *mf*. The third system (measures 100-105) is marked *p*, *pp*, and *ppp*, and includes the instruction "no Ped." and "Ped.". The score includes dynamics such as *sfz*, *fz*, *mf*, *p*, *pp*, and *ppp*. The bass line includes fingerings (5, 3, 2, 1, 3, 2, 1) and pedaling instructions.

Formal Learning Experiences

Ann was reluctant to read notation from the beginning; she preferred to rely on her ear or rote learning, and found reading unengaging and tedious, as we can see in her Cycle 1 post-intervention interview:

Aoife: Which way of learning did you like best; reading notes, playing by ear, or reading chords?

Ann: Playing by ear.

Aoife: Is there one way that you don't like?

Ann: Reading the notes.

Aoife: What don't you like about it?

Ann: It takes too long.

(Ann – Cycle 1 – Post-intervention interview)

In addition, she later explained how she was inclined to get 'bored with reading' (Cycle 3 post-intervention interview). Despite her negativity towards reading, Ann still wanted to improve her reading skills; in her Cycle 1 pre-intervention interview saying she wanted 'to learn the notes a lot better... and the timing of it, the time signatures and rhythms and stuff'.

Interestingly, in her Cycle 2 post-intervention interview, the formal, analytical approach, which involved reading notation, while after listening to the piece and gaining some aural familiarity with it, became her favourite approach to learning repertoire, surpassing learning by ear. In this same interview Ann mentioned how learning by ear can be challenging at first but then easy. After she said this, I asked her about her experiences of the analytical approach:

Aoife: What about learning chords and patterns and reading it that way?

Ann: Eh, it took longer but like once you get it then you wouldn't forget them.

Aoife: Okay, so you thought it took longer than...

Ann: Yeah, than listening (learning by ear)

Aoife: Than listening, and what about reading notes?

Ann: That's fine just once the notes are close together.

Aoife: So which way of learning do you like best; reading notes, playing by ear, or analysing the chords and patterns?

Ann: Probably the chords and patterns

(Ann – Cycle 2 – Post-intervention interview)

Ann found that learning through musical analysis and thinking in ‘chords and patterns’, while it took longer to learn and required more thinking in the initial stages, resulted in a deeper knowledge of the piece and a stronger memory. Through this analytical approach she could recall each chord and think of it as one unit, as opposed to thinking about each individual note, as she did previously through reading alone. As she explained, ‘it was kind of like notes in a group so it would be easier to remember than just reading it straight from the page, I suppose, you know?’ (Ann – Cycle 2 – post-intervention interview). The following two sections illustrate, in detail, how Ann’s learning developed during Cycles 1 and 2 using these formal approaches, particularly through musical analysis.

Cycle 1 - Étude

Using MuseScore, a music notating software package, I created a resource sheet of the harmony line, and presented it as block chords to make it easier for Ann to analyse the chords. This helped her identify the similarities and differences between each chord, clearly illustrating which voice moved and which notes repeated, etc. Figure 5.4 shows a sample taken from this resource sheet (See Appendix L for full resource sheet). We spent some time analysing each chord and writing the chord symbol over each one, while also relating them to chords seen in popular music, for example B/F#, as this is one of Ann’s favourite styles to play. Ann enjoyed this approach and interestingly was more likely to read the notation when presented to her in this form. In lesson three after playing this with broken chords while reading the sheet music for the first time, she said, with surprise in her voice, ‘it’s way easier doing it with the block chords first’ (Ann – Cycle 1 – Lesson 3).

Although there were still some issues with fingering for the more difficult chords, I observed that there were far fewer fingering issues when Ann finally played them as broken chords than there would have been if we learned it the traditional way of reading the score. Ann found following fingering instructions challenging when reading notation. By reconfiguring the chords in this way, it taught Ann the correct hand positions for each chord, and therefore made her fingering

The analytical approach seemed to work well for Ann, and she gained a strong understanding of the piece through the harmonic analysis and the inclusion of theory throughout each lesson. This led to the confident performance we can hear in [Ann - Audio Excerpt 1.4](#), where she played bar 1-16 HT at the beginning of lesson seven from memory. While this was a good performance, we can hear some fluctuation at times in the audio clip above. On review of the audio recorded lessons and interview transcripts, and reflection on my teaching practice, I realised that further listening of the complete piece first, particularly before putting sections hands together, would have helped Ann feel more secure with this step and enhance the learning process. Following this newly gained perspective, the practice of actively listening to repertoire was incorporated into the subsequent cycles when learning formally through notation and analysis.

Cycle 2 - Fantasy

Listening to a piece prior to learning it became a central step in the learning process from Cycle 2 onwards, and Ann stated in lesson three that ‘listening to that [full recording] helped me to get it a lot quicker’. It was evident throughout the learning process that Ann gained confidence in her learning and reading ability due to listening, and she often commented on this during our lessons. While the inclusion of listening clearly had an impact on Ann’s learning of *Fantasy*, she discussed how her enjoyment of learning this piece was due to the analytical approach implemented, and how she built up an intellectual knowledge of the piece through connecting her knowledge of harmony and scales with each section. I observed, during her lessons, that she memorised this difficult piece with ease, and it was evident that this was due to the intellectual knowledge she suggested in her post-intervention interview:

- Aoife: So, if you were to play a concert now today what piece would you pick from your exam to play?
Ann: *Fantasy*
Aoife: Okay, why that one?
Ann: Because it was just like the funnest to learn, you know, yeah.
Aoife: What made it the most fun to learn?

Ann: Because it was different. You know the way at the start when there was like the part where there was the scales and then it was in a different key; it made it way easier to learn it.

(Ann – Cycle 2 – Post-intervention interview)

We analysed *Fantasy* together and Ann wrote each chord name over its relevant bar, like we did in Cycle 1 when learning *Etude*, as well as looked at the patterns in the music. The piece, when broken down, predominantly consisted of scales and broken chords, often consisting of just the first, third and fifth notes of the scale, or variations of this (See Figure 5.6). However, despite the relatively easy harmonic structure, *Fantasy* was a difficult piece to learn, but this approach made it far more accessible. It was an ideal piece for implementing the analytical approach, particularly as Ann was relatively new to chords and musical analysis at that point.

Figure 5.6. *Fantasy No.1 in D - Analysis*

The image shows a musical score for 'Fantasy No.1 in D' by Georg Philipp Telemann. The score is in D major, 3/8 time, and marked 'Allegro'. The title 'Fantasy No.1 in D' is centered at the top. The composer's name 'Georg Philipp Telemann' is written in the upper right. The score consists of two staves: a treble clef staff and a bass clef staff. Above the treble staff, several chords are identified in red boxes: 'D' (bar 1), 'D/F#' (bar 3), 'D' (bar 4), 'A7/C#' (bar 5), 'D' (bar 6), and 'A7/C#' (bar 7). In the bass staff, three notes are highlighted with blue boxes and labeled '1st', '3rd', and '5th' with arrows pointing to them, indicating the first, third, and fifth notes of the scale.

Ann did not seem to recognise that this was a difficult piece and that other students who learned it solely through sight-reading struggled with it, but she, herself, seemed to acknowledge in the interview excerpt above how having an intellectual understanding of it made it an easier process to learn and, more importantly, remember. This is a clear example of how the approach chosen can have a positive impact on the student's enjoyment of learning a piece. This also highlights the positive impact that teacher knowledge and expertise can have on a student's learning, particularly in the early stages of implementing a variety of approaches to learning. How a piece is approached

can make it either an enjoyable and engaging learning experience for the student, as it did in Ann's case, or a strained and unpleasant experience if an unsuitable approach is implemented.

No more HeLP – Becoming an Independent Learner

Ann showed a desire for learning independently at the beginning of this study, sometimes figuring out the melody line of the verse, or chorus, of a simple pop song by ear. However, she never independently learned the LH of such a piece, or tried to learn a complete piece HT. While Ann never explicitly said why this was, as researcher, and with my observations on her development, this indicated that Ann was limited in her approaches and skillset, and possibly motivation to complete the self-directed task in the beginning.

In Cycle 1 Ann learned the first verse and chorus (melody line only) of *A Day in the Life* by The Beatles (Lennon and McCartney, 1967), and during Cycle 2 learned the complete melody line of *Grace* by Lewis Capaldi (Capaldi, Atkinson and Holloway, 2018), but it was not until Cycle 3 when she truly flourished and developed into an independent and competent learner. As Ryan and Deci (2017) stated, competence is linked with our achievements, increased knowledge and skills, and feelings of self-efficacy, and this was all demonstrated in November 2019 when Ann was asked to play piano at her friend's funeral. When talking about Ann's development in the parental interview with Ann's mother, she recalled:

The school asked her to play for the memorial service or something they were having, and they just gave her the piece the day before. She came home, practised it, and played it. She never would have done that before in front of a crowd.

(Ann's parent – Cycle 3 – Post-intervention interview)

As Ann's mother said, Ann did not have the confidence to perform like this before, and she would not have learned an entire piece on her own the day before performing it, but after this Ann went from strength to strength. Although losing a friend at sixteen years old was hard for Ann, her difficulties continued from March-June 2020; between the Covid-19 pandemic, the constant changing and uncertainty of her junior certificate exams caused by the pandemic, the move to

online learning and ZOOM classes, her dad getting seriously ill and being hospitalised for some time, and Ann injuring her foot. Most students would be excused for not being able to focus on their piano studies during these life-altering events, but instead Ann continued to independently learn complete pop pieces HT, such as *Imagine* by John Lennon (1971), using a combination of reading, chords and by ear as she was already familiar with the piece; it was one of her favourites.

Ann then succeeded in learning a Grade 7 piece, *Gigue* from *Suite in D minor HWV 436* by Handel, from beginning to completion in just nine weeks. She began learning this piece independently and autonomously in April 2020; I did not ask her to do this. Here, [Ann - Audio of performance of Gigue](#), we can hear the end result of Ann's hard work as she recorded herself performing *Gigue* at home after lesson nine in June 2020. Learning this Grade 7 piece independently to such a high standard and in a short timeframe exemplifies Ann's significant musical development and growth in self-confidence over the course of this research.

Table 5.2 provides a summary of the learning approaches independently employed by Ann for each section of *Gigue*, in addition to the content covered in our lessons and any additional/interesting information. The annotated sheet music in Figure 5.7 shows the sections Ann learned independently each week. The colours used correlate to those used in Table 5.2; the highlighted notation shows content learned hands separately by Ann, while the sections of music surrounded by a bold solid line illustrates what she learned hands together. Text summarising what was learned each week was inserted in the same colour on the Figure 5.7 sheet music for further clarity.

Table 5.2. Summary of Ann's self-directed learning - Gigue

Lesson	Date	Self-directed learning prior to lesson	Approach taken by Ann/her experience of learning this	Work covered in lesson together	Additional notes	Lesson time
1	23/04/2020	All RH & bar 1-5 LH	Learned over the Easter holidays using a combination of reading and ear - Ann explained she listened to the midi recording of RH in full 5 times before using the sheet music to read it, and then alternated between learning a line and listening to it; learning approx. 1 line a day.	RH - I guided Ann to work out best fingering for bar 29 as she stumbled over the C# in the descending scalic passage. Discussed shaping and bringing out different voices (e.g. bar 26). LH - listened to Ann play bar 1-5	Ann did not have the recordings of each riff prior to this lesson. I asked if she wanted to use them to learn the rest of the LH, she said she did, so I recorded them for her this week. She seemed less confident about learning the LH independently.	13:30
2	30/04/2020	Bar 1-4 HT & bar 1-9 LH	Ann explained how she put bar 1-4 HT: ' <i>I played the right hand with the hands together recording, then I played the left hand with the hands together recording, so then I kinda knew, like, what it's supposed to sound like</i> '.	We discussed the key of piece and modulation in bar 5 (building Ann's intellectual understanding of <i>Gigue</i>). I pointed out the appoggiatura in bar 4 and demonstrated how it fit with the LH to prevent any possible difficulties with this.	Ann played bar 1-4 accurately HT and although she thought she had her LH fingering wrong in bar 1-9 this was also accurate. It transpired that she learned LH more by reading and RH more by ear. As observed throughout this research, although the important finger numbers are provided in the sheet music, students feel more secure with fingering when a piece is learned by ear (visually able to see the patterns/shapes in the music more clearly).	12:05
3	07/05/2020	Bar 5-9 HT	Ann approached putting bar 5-9 HT in a similar way to last week learned HS from memory, then played along with recording HS first, then put HT using notation.	We discussed potential articulation and dynamics for the piece, and general stylistic features of Baroque music (detaching longer notes). Also analysed the modulations up to bar 16.	I did not need to guide Ann on pitch or rhythm for this section as these were secure. Ann noted the imitation in bar 10 onwards and felt she could continue learning LH independently during the week.	10:28
4	14/05/2020	Bar 10-15 LH	Learned by reading & used memory of hearing it previously	Bar 12-13 - rhythm was unsteady here and some pitches unsure so we worked on this through listening and reading the notes causing issues.	Ann was tired during this class and it affected her overall performance; she had a busy week at school. It was impressive that she still progressed despite this.	09:33
5	21/05/2020	Bar 10-15 HT	Reading and listening to midi recordings	I suggested some good recordings for Ann to listen to on YouTube because she found it difficult to source any and we discussed the different performances. I asked her to try to play bar 16-19 LH so could see her learning process - she asked me to play it first and then she sight read it.	Ann said she was having difficulty with the LH fingering. She explained ' <i>at the start (bar 11), the left hand, you know the way you go 1 on F and then 1 on C? It just catches me every time</i> '. This was the first time Ann identified exactly where she was going wrong and it is evident that she was actively reading and thinking about what she should be playing, not just thoughtlessly using random fingering as she did in the past. This marked a significant development in Ann's learning.	13:52
6	28/05/2020	No additional work done this week - (in-school) junior cert exams finished today	Ann focused on improving bar 10-15 HT during the week.	In class we went over everything from last week, focusing on bar 16-17 LH.	Bar 16-17 LH is particularly difficult so I felt I needed to help her with this to make her workload seem less daunting - Ann is less confident with learning LH and starting here may be off putting when learning at home.	07:06
7	08/06/2020	Bar 16-30 LH	Listened to recording of LH several times before alternating between reading and listening	Ann asked me to help her with putting bar 16-17 HT which I did by sharing the music on screen and asking her how it fit together. I also played it HT slowly to help her get it on her ear. This approach worked well and she was able to play it confidently after a few minutes.	Learning bar 16-30 LH independently was an impressive feat this week. Ann possibly would have learned more as she tried to listen to the full HT recording during the week but said it would not work. This may have put her off trying it HT, although she could have used YouTube to listen to other recordings.	13:26
8	18/06/2020	Bar 16-30 HT	Reading only - Ann said her phone was dead the first day of practice so she decided to read the sheet music when putting it HT. This went well so she continued to learn it all HT in this way.	Ann slowed down a little overall for page 2 but hesitated jumping from the low C to E on LH bar 17 and left out a Bb in bar 28 LH so we worked on fixing these, which did not take long. We discussed putting in more dynamics and listening to other performances of it to see what she liked about their interpretations.	As this is a Baroque piece and has no dynamics written in I wanted Ann to explore other recordings and decide what dynamic variations she would like to include. She learned it all independently up to this point and chose the learning approaches she used for each section so I felt she should have autonomy over these decisions also.	07:34
9	25/06/2020	Up to speed from memory		We focused on articulation in this lesson. Ann played well overall with some very nice detached crotchets in places but joined them in other places so we worked on getting continuity throughout. She took each direction well - notably focused on playing everything accurately.	As ZOOM's sound can be unpredictable in it's timing I asked Ann to record herself playing once she was happy with her articulation etc. This resolved any questions I had of timing issues etc and she played with great energy and ease.	07:20
Total lesson time spent on Gigue						1h 34m 54s

Figure 5.7. Gigue - Annotated to show sections learned by Ann prior to each lesson

Gigue

Lesson 1 - All RH & bar 1-5 LH From Suite in D Minor HWV436
Lesson 2 - Bar 1-4 HT & bar 5-9 LH G. F. Handel

The musical score is presented in five systems, each with a colored background indicating the lesson section:

- System 1 (Lesson 1):** Bars 1-5. Red background. Includes fingering numbers 1, 2, 1, 2, 1 in the right hand and 2, 3, 4, 4, #4 in the left hand.
- System 2 (Lesson 2 & Lesson 3):** Bars 1-9. Purple background for bars 1-4 and 5-9. Green background for bars 5-9. Includes fingering numbers 1, 1, 1, 2, 3, 3, 2, 4 in the right hand and 4, 4, 4, 1, 3, 2, 5 in the left hand.
- System 3 (Lesson 4 & Lesson 5):** Bars 10-15. Red background for bars 10-15. Green background for bars 10-15. Includes fingering numbers 3, 4, 5, 1, 1, 2, 5, 1, 1, 1 in the right hand and 3, 4, 5, 1, 1, 2, 5, 1, 1, 1 in the left hand.
- System 4 (Lesson 4 & Lesson 5):** Bars 10-15. Red background for bars 10-15. Green background for bars 10-15. Includes fingering numbers 10, 2, 1, 2, 2, 4, 1, 3, 3, 3 in the right hand and 2, 3, 1, 1, 1, 1, 5 in the left hand.
- System 5 (Lesson 4 & Lesson 5):** Bars 10-15. Red background for bars 10-15. Green background for bars 10-15. Includes fingering numbers 4, 4, 1, 1 in the right hand and 1, 1, 1, 2, 3, 4 in the left hand.

Lesson 7 - Bar 16-30 LH

Lesson 8 - Bar 16-30 HT

Measures 16-18. The right hand (RH) part features a melodic line with slurs and fingerings (2, 3, 4, 2, 1, 3). The left hand (LH) part features a rhythmic accompaniment with slurs and fingerings (2, 1, 1).

Measures 19-21. The RH part continues with slurs and fingerings (2, 2, 3, 3, 3, 4, 2, 5). The LH part continues with slurs and fingerings (3, 3, 4, 1, 3).

Measures 22-24. The RH part continues with slurs and fingerings (2, 4, 4, 3, 4, 3). The LH part continues with slurs and fingerings (3, 3, 2).

Measures 25-27. The RH part continues with slurs and fingerings (5, 5, 1, 2, 5, 5, 1, 2, 1). The LH part continues with slurs and fingerings (2, 1, 3, 4, 1).

Measures 28-30. The RH part continues with slurs and fingerings (1, 1, 3, 3, 4, 2). The LH part continues with slurs and fingerings (1, 3, 4, 1, 2).

We had picked this piece and planned to start learning it after the Easter holidays, but Ann learned the RH part and bar 1-5 of LH during her holidays. She did this using a combination of listening to this [MIDI recording of Gigue - complete RH](#), and reading and analysing the sheet music for RH. She then used the same approach for LH. [Ann - Audio Excerpt 3.1](#) shows Ann performing the RH part for me during our first lesson after Easter (*Note: this was recorded on ZOOM and Ann's internet connection was unstable so the pauses and increases in tempo are due to internet/ZOOM glitches. I could tell this from the way the video acted as she performed*).

As seen in Table 5.2, Ann made significant progress over these nine lessons, independently learning a new, often substantial, section of *Gigue* most weeks, except for week six, due to in-school junior certificate examinations. Although Ann did not learn a new section in week six, she still made progress and improved bar 10-15 HT, despite her increased school workload and examinations. During each lesson, after going through the new section she learned that week and giving minor performance advice or initiating a discussion about stylistic characteristics and possible articulation or dynamics, etc, I asked Ann if she would like me to help her with the next section in class, but she always said she would be okay on her own. The only time I felt the need to step in was in lesson six; I went through bar 16-17 LH with her as this was a particularly difficult passage and I could see it possibly causing issues for her during the week and hindering her progress. Interestingly, the following week was the only time Ann asked me for help and it was putting these two bars HT. I used a combination of asking Ann questions about what notes go together while I shared the sheet music on screen and annotated it, and I played it slowly HT for her so she could hear how it fit together also (she could not see my hands playing this). This worked well and Ann was able to play it HT in a few minutes.

Ann's independence in learning this Grade 7 piece was noteworthy and her growing confidence each week was evident as she realised that she no longer needed help in learning a new piece; not just for more accessible popular music like the piece she played for her friend's funeral, but for advanced classical repertoire also. My role as teacher then was to guide her through the finer

details and support her in getting the best possible performance of the piece. Ann had complete autonomy over her learning also; including the approaches she employed and the pace at which she learned. Her Grade 7 exam was not until Christmas so the pressure of an examination soon approaching did not impact her motivation for learning this piece so quickly as it was months prior to her exam.

Having such autonomy over her learning, in addition to liking the piece itself, would have enhanced her intrinsic motivation to learn this piece (Comeau *et al.*, 2019; Ryan and Deci, 2017; Ryan and Deci, 2020), but without having the prior knowledge and experience of employing both formal and non-formal approaches it would not have been possible for Ann to have the confidence or the skillset to learn such a piece independently. As you can see from Table 5.2, Ann used both her reading and aural skills to learn *Gigue*, and while these approaches are often seen as a dichotomy in instrumental lessons (Brook, Upitis and Varela, 2017; Folkestad, 2006; Green, 2002), Ann demonstrated what these scholars discussed in their literature; that non-formal and formal approaches can be far more impactful when used together; one approach supporting and complementing the other. If Ann only learned this piece by ear, she may have missed out on some of the detail and it would have been difficult to put HT, but if she only relied on notation she would have continually questioned if what she was playing was correct and would not have considered learning such a piece in this way in the first place.

Enhanced Formal Skills through Non-Formal Approaches

Throughout Ann's account of learning *Gigue* in Cycle 3 she explained how she used a combination of listening and reading, for example in lesson one she said she listened to the midi recording of RH in full five times before using the sheet music to read it, and then alternated between learning a line and listening to it. Then in lesson two Ann explained how she put bar 1-4 HT:

I played the right hand with the hands together recording, then I played the left hand with the hands together recording, so then I kinda knew, like, what it's supposed to sound like.

(Ann – Cycle 3 – Lesson 2)

Formal and non-formal skills played equally important roles in her independent learning process here. This is particularly interesting when you consider her aversion to reading notation at the beginning of Cycle 1.

The importance of gaining familiarity with a piece prior to learning it was found to be beneficial for all participants' learning experiences, but this was most notable in Ann. The act of listening to a piece she was previously unfamiliar with resulted in Ann gaining more confidence with reading notation. From observing how she learned bar 16-30 of *Gigue* HT in lesson seven; she did not alternate between reading and listening to the recordings like previous weeks – instead she only read it. Although she would have had a good aural memory of the piece from listening to recordings at this point, this was the first time she did not utilise this support and felt confident and competent in her ability to read it HT accurately, which she did to great success. This was a major turning point in Ann's musical development and helped build her self-confidence further; she was very proud of this achievement.

I definitely feel more confident in myself with playing when I've heard it already rather than just looking at it straight because I just feel like I'm not playing it the right way or something, you know? But it's a lot easier then when you've already heard it.

(Ann – Cycle 3 – Post-intervention interview)

I had believed that Ann's reluctance to read was due to the style of music she was learning (predominantly classical pieces), and/or because of the examination restricting her choice of repertoire, as Green (2008) found, because Ann never had difficulty learning a pop piece, or Christmas piece, she had chosen to learn. However, through analysing Ann's development over the three cycles of action research, and reflecting on her progress, I discovered that the reason Ann was so reluctant to read notation in the past, particularly when learning examination repertoire, was

because she had no aural knowledge of the piece and was missing that aural confirmation that what she was playing was correct.

The constant self-doubt and questioning whether what she was playing was correct or not, resulted in Ann struggling to learn in the initial stages of each piece. This was not a positive learning experience for her; often causing unnecessary anxiety and stress in a student who already lacked self-confidence, but as soon as Ann became familiar with her pieces, I would see her enthusiasm and confidence grow, and she would practise consistently. From the data gathered over these three years, it was evident that as soon as she began listening to previously unfamiliar pieces regularly before learning them, as she did in Cycles 2 and 3, her relationship with her examination repertoire transformed and her aversion to reading notation dissipated; she no longer struggled in the initial stages of learning.

Conclusion

Evidence from the analysis of interview data, observations and audio recorded lessons demonstrated two key findings in relation to Ann's musical development, and the impact alternative formal and non-formal pedagogical approaches had on her development, during this study: 1) Ann became an autonomous, competent, and independent learner, and 2) her reading skills and willingness to read notation improved considerably. Ann's case demonstrates the power and impact non-formal skills such as learning by ear and listening can have on students' musical development, confidence, and propensity for independent learning, in addition to the impact these skills can have on the development of formal skills such as reading notation.

We can compare this approach of learning piano to how we learn our native language; we do not learn to read before speaking the language. We learn through immersion; by hearing other people speak and becoming familiar with the sounds of the language, and we copied, eventually becoming fluent ourselves. Only then do we learn how to read the words, or symbols, associated with that language. Like how we learn our native language, many music educators and scholars

advocate the 'sound-before-symbol' approach, and we see this widely accepted and used in classroom music (Jordan-DeCarbo, 1997), but not in the one-to-one formal piano lesson.

Swanwick (1994) discussed the importance of various musical 'knowings', and rates 'aural discriminations' ahead of 'manipulative control and notational proficiency', respectively (p. 17). This case study agrees with Swanwick's view on the importance of aural skills and illustrates that, if we immerse our students in critically listening to their pieces and give them time and space to familiarise themselves with the sounds before introducing the notation, they may be more willing and confident with reading notation, as they can make connections with the musical patterns they hear and those they see on the page. As Ann stated:

Now I'd kind of be analysing it more like with the patterns and what's happening like if there's octave jumps or whatever, and by listening to it as well, I tend to listen to a piece first before I'd play it.

(Ann – Cycle 3 – Post-intervention interview)

Prior to this, the aural-visual connection that was essential for Ann to feel secure in her learning was missing, and it was a struggle for her to read notation or want to read it. By working on non-formal skills such as learning by ear, and encouraging more critical listening, Ann began to feel more secure learning new repertoire and no longer had a negative attitude towards reading; she began to see the value in both ways of learning.

The findings of this study also highlighted the importance of autonomy, and resonate with those of Comeau et al. (2019), Ryan and Deci (2017), and Chirkov and Ryan (2001); by giving students choice and control over their learning, they become empowered learners with increased levels of motivation and engagement. If we want our students to become independent learners and thinkers equipped with the skills to learn pieces of various styles, and maintain a lifelong engagement with playing piano, we need to be proactive in the creation of a new comprehensive pedagogical model – one that, like illustrated in this case study, places equal importance on formal and non-formal approaches in an autonomy- and competence-supportive way. As Ann's musical development exemplified here, this approach to teaching and learning both formally and non-

formally can equip students with the skills and tools necessary for independent learning (Ryan and Deci, 2017).

CHAPTER 6 - CASE 2 – DAVID – CREATING AN OPTIMAL LEARNING ENVIRONMENT FOR MUSICAL DEVELOPMENT & ENGAGEMENT

Introduction

This chapter presents the case study of David, a younger and significantly less experienced piano student than Ann at the time of this research. David's case illustrates the positive impact of creating an optimal learning environment for students, and outlines what an optimal learning environment might look like in the one-to-one piano lesson context. It was found, through the implementation of alternative approaches, and continued observation and reflection by me throughout the action research process, that the inclusion of discovery learning and optimally challenging, scaffolded activities, when implementing both formal and non-formal approaches can be highly beneficial for students' musical development and engagement in learning. In this chapter I examine the positive impact these pedagogical developments had on David's musical development and engagement in learning, in addition to his motivation to learn and growing independence. Moreover, the negative effects resulting from a suboptimal learning environment are discussed in detail.

To illustrate these findings, I first identify and reflect on key teaching and learning moments, with David, throughout Cycles 1-3. These are visited in chronological order to best demonstrate the teaching and learning process, and how the pedagogical approaches, mentioned above, evolved over this time. The audio and visual examples provided in these sections illustrate David's learning and the co-creation and enhancement of pedagogy throughout each cycle. This is followed by a discussion of the impact of these pedagogical developments on David, the teaching and learning challenges faced throughout each cycle, and a reflection on the overall process. Finally, an overview of how I strived to create an optimal learning environment, through optimal challenges, structure, discovery learning and scaffolding, in addition to the advantages of creating

such an environment, is examined. In these final sections, the key findings, and the theories and literature which guided this study, are synthesised.

As with Ann's case, Table 6.1 provides an overview of the pieces David learned as part of this project, and in preparation for his graded examinations, all of which will be discussed in this chapter. In addition, this table provides some relevant information on his musical background, and his ages throughout the duration of this study, to provide further context for the reader.

Table 6.1. Student Profile - David

Student Name	David
Age at start	12
Age at end	15
School class at start of project	6 th class, primary school
Cycle 1 - 2018	RIAM Grade 1 (& Redline Pop Step 1) Piece: <i>Allegro Op. 38, No. 3</i> by Johann Wilhelm Hassler
Cycle 2 - 2019	RIAM Grade 2 Piece 1: <i>Lullaby</i> by César Franck Piece 2: <i>Study in C, Op.70</i> by Hermann Berens
Cycle 3 - 2020	Redline Pop Step 3 Piece 1: <i>The Entertainer</i> (arrangement) by Scott Joplin Piece 2: <i>Nuvole Bianche</i> (arrangement) by Ludovico Einaudi
Years of tuition (end of project)	6 years
Years with me (end of project)	4 years
Background	David is a diligent piano student with good reading skills. He went through phases of enjoying examination pieces and then only wanting to play pop music. His mother played piano when she was younger to a high standard but does not play much now. She wanted to ensure David has a lifelong interest in playing piano and felt exams are not as important as maintaining his interest. She was worried the RIAM exams were too demanding on him as he had a lot going on in secondary school academically during Cycle 2 & 3 so they decided to try a pop music exam for Cycle 3 to maintain engagement but with reduced pressure. Interestingly David ended up practising more than ever during Cycle 3.
Other instrument(s)	Learned Tin Whistle prior to piano

Cycle 1 – 2018

Allegro

As heard in [David - Audio Excerpt 1.1](#), David learned RH of *Allegro* using the HeLP approach and LH through musical analysis, beginning with LH. In Cycle 1, while students were given autonomy over which examination pieces they learned, they were not given a choice of approaches at this stage as they had no experience of the alternative approaches, and therefore could not make a well-informed decision over what approach might be most suitable for each piece or section. As recommended by the Simultaneous Learning approach I helped David make musical connections using the Simultaneous Learning practice map (See Appendix M). This can be heard in the above excerpt. In addition, I created a resource sheet to aid David in making connections (See Figure 6.1 for an excerpt of this sheet and Appendix A for the complete resource sheet).

I began lesson one by asking David observational questions about the music, such as the key of the piece, and he wrote the answers into the practice map. I then asked him to name the pitches and play No. 2 in the resource sheet (Figure 6.1), and asked him what he just played (the arpeggio of C major). I followed this with No. 4 and asked him what the difference was; he correctly noted the rhythm. To solidify his musical understanding, we discussed the articulation and rhythms, and clapped and played each one individually. Finally, as heard in the excerpt, we analysed No. 1 and compared this phrase to No. 2 and No. 4 and worked on playing each one until secure.

If you compare Figure 6.1 and Figure 6.2, you will note that I did not teach the LH in the order it appears in the piece, instead I moved from the easiest to the most difficult musical idea based on the arpeggio of C major. This was to ensure David's learning was scaffolded and structured; building on his knowledge each time and helping him to make connections easily. I continued to teach the rest of the LH in the same way over the following weeks.

Figure 6.1. Excerpt from Allegro Resource Sheet

Figure 6.1 displays four musical staves in bass clef, each with a red box containing a number (1, 2, 3, 4) indicating specific rhythmic or melodic patterns. Staff 1 shows a sequence of eighth notes with fingerings 1, 2, 3, 4. Staff 2 shows a sequence of eighth notes with fingerings 4, 2, 1. Staff 3 shows a sequence of eighth notes with fingerings 3, 2, 1, 1. Staff 4 shows a sequence of eighth notes with fingerings 1, 2, 3.

Figure 6.2. Allegro, Op. 38 No. 3 by Johann Wilhelm Hassler - Annotated Sheet Music with Riffs

Figure 6.2 displays annotated sheet music for "Allegro, Op. 38 No. 3" by Johann Wilhelm Hassler. The music is in 2/4 time and marked "Allegro con spirito" with a dynamic of *f*. The piece is annotated with ten tracks highlighting specific musical elements:

- Track 1 = All (bar 1-16)**: The entire piece.
- Track 2**: The first four bars, marked "Allegro con spirito" and *f*.
- Track 3**: The first four bars, focusing on the right-hand melody.
- Track 4**: The first four bars, focusing on the left-hand accompaniment.
- Track 5**: The first four bars, focusing on the right-hand melody.
- Track 6 = bar 1-8**: The first eight bars.
- Track 7**: The first eight bars, focusing on the right-hand melody.
- Track 8**: The first eight bars, focusing on the left-hand accompaniment.
- Track 9**: The first eight bars, focusing on the right-hand melody.
- Track 10**: The first eight bars, focusing on the left-hand accompaniment.
- Track 11 = bar 9-16**: The last eight bars.

The music includes various dynamics such as *f*, *mf*, and *p*, and features complex rhythmic patterns and fingerings throughout.

David began learning the RH through the HeLP approach in lesson two. As heard in [David - Audio Excerpt 1.2](#), David seemed reluctant to start, so he needed encouragement. Once he began searching for the notes he did well, and he eventually discovered the correct pitches without help. David showed a somewhat impulsive learning style here as he sometimes played without apparently listening and, although it was largely accurate, he fixed on his own version; omitting one of the repeated C's in bar 1 until this was pointed out to him (See Varvarigou and Green, 2015, for a discussion of learning styles when learning by ear).

Over the following weeks, I questioned if the RH riffs were too challenging and long for David, and if the approach to learning the LH was engaging enough, as David did not seem motivated to practice when at home, or confident in what he was playing (See Appendix N: David – Cycle 1 – Summary of Teaching & Learning for a detailed summary of his weekly progress and my reflections on teaching and learning). I also observed that, each week, as found with Ann in Cycle 1, David could recall the RH (learned by ear) much easier than the LH (learned by reading and musical analysis). Although he eventually became familiar with the LH over time, I realised, on reflection, that it could have been prepared more thoroughly through listening. In addition to this, it became apparent that the layout of the LH resource sheet for *Allegro* (Appendix A) was not optimal, and it was difficult for David to connect what he learned here to the original sheet music. This may have contributed to David's struggle with learning the LH, and the layout of resource sheets needed to be considered more deeply in the future to prevent this from happening again.

To investigate whether shortening the riffs would help, I decided, in lesson six, that, when introducing bar 13-16 RH by ear, I would try playing sections of each riff on a piano app, on my phone, rather than using the recordings I made. The reason I chose my phone for this task was to ensure David could not see what notes I was playing; it was important he used his aural skills and did not learn this by rote. I did not play each section on repeat like in the HeLP approach, however, instead I played no more than eight notes at a time and gave David time to imitate me, sometimes

joining in with him to guide him. As heard in [David - Audio Excerpt 1.3](#), the shortened patterns seemed to be more manageable for David and he figured out each group almost immediately. I felt this approach of learning smaller sections would help build his confidence with learning by ear and support the development of a more practical learning style (Green, 2014).

This slight alteration to the HeLP approach was effective – from this point onwards David became more engaged and motivated to learn *Allegro* and began practising at home. I had finally found the right balance of challenge and skill level for David in lesson six, and continued to focus on covering smaller sections well, rather than pushing David to achieve more each week. This approach was more successful, and, in my opinion, created a more enjoyable teaching and learning experience for us both.

While there were notable improvements in teaching and learning from lesson six onwards there were some issues with my teaching overall and, when reflecting and analysing the lessons in Cycle 1, I discovered that I rarely created the optimal learning environment that I strived for. Firstly, I did not consistently facilitate discovery learning, often reverting to providing David with information instead of guiding him through discovering it for himself. In addition, David was not aurally familiar with the LH, and this, in combination with my sometimes passive and hasty style of teaching most likely contributed to David's LH not being as secure as his RH, which he discovered for himself through learning by ear. As Bruner (1961) and Ryan and Deci (2017) asserted, when knowledge is imparted onto students they are less likely to retain this information compared to when discovered for themselves. This was certainly evident in David's case during Cycle 1.

Cycle 2 – 2019

Lullaby

David's difficulty with making connections between the resource sheet used to teach *Allegro* in Cycle 1, and reading the full score, assisted in the creation of a more considered resource sheet for *Lullaby* in Cycle 2 (see Figure 6.4 for an excerpt of this and Appendix B for the complete resource

sheet). After noting the suboptimal layout of the *Allegro* resource sheet (Appendix A), I ensured the *Lullaby* resource sheet was carefully arranged in a way that would best assist David to visually see the similarities and differences between each phrase played by LH. If you compare Figure 6.3 and Figure 6.4, for example, you can see clearly that bar 1-4 and bar 5-8 are similar, and David noticed this immediately when he looked at the resource sheet, but this connection would have been difficult to make if only using the original sheet music.

Figure 6.3. *Lullaby* by César Franck – Excerpt of Annotated Sheet Music with Riffs

The image displays a page of annotated sheet music for the piece "Lullaby" by César Franck. The music is written for piano in 2/4 time with a key signature of one sharp (F#). The tempo is marked "Andantino" and the dynamics range from *mp* (mezzo-piano) to *p* (piano). The piece is divided into five phrases, each indicated by a red bracket and a number (1-5) above the staff. The first phrase (bars 1-4) is marked *mp* and includes a triplet in the first measure. The second phrase (bars 5-8) is marked *p*. The third phrase (bars 9-12) is marked *p*. The fourth phrase (bars 13-16) is marked *mp*. The fifth phrase (bars 17-20) is marked *p* and includes a tempo marking of $\text{♩} = 80$. Fingerings are indicated by numbers 1-5 below the notes. The bass line consists of a steady eighth-note accompaniment.

Figure 6.4. Excerpt from *Lullaby Resource Sheet*

The image shows a musical score for a piece titled "Lullaby". It consists of four staves of music, all in bass clef. The key signature is one sharp (F#), and the time signature is 2/4. The first staff contains measures 1-4, the second staff contains measures 5-8, the third staff contains measures 9-12, and the fourth staff contains measures 13-16. The music features a series of eighth notes, often grouped with slurs and fingerings (1-5). A red circle highlights a specific note in the fourth staff, measure 14, which is a quarter note with a sharp sign (#).

Despite this enhancement in my resource sheets, I realised, after listening back to lessons three, four and five, and reflecting on my teaching, and David's learning, that there were other issues that needed to be addressed. I was pushing David passed his optimal skill level again when putting *Lullaby* HT. I should have revised the importance of good learning strategies with him, like I did with *Allegro* in Cycle 1, and worked on the ends of phrases in more detail, as these were his problem areas. He tried the first two bars HT in the first lesson, which showed great initiative and motivation, but he did not make sufficient progress with the rest of it in the subsequent four lessons. His hands separate playing was quite good, particularly his RH, but his approach to learning this RH part was clearly more optimally challenging for him as he enjoyed learning it by ear and discovering the notes for himself. This was a difficult passage to learn HT for Grade 2, but I should have prepared it further before putting it HT, as his LH was not as secure. David tried to play it HT from memory, but it was evident David was not ready for this as the LH part was not known from memory like the RH was.

This was rectified in lesson six however, with a successful, well-scaffolded lesson, full of discussion and musical analysis. Like in lesson six of Cycle 1, I began this lesson by taking a step back, and focused on ensuring it was secure hands separately before putting it HT again. While working through it together, David highlighted some tricky parts on his LH that may cause issues when putting HT, like the addition of a C# in bar 15 (See circled note in Figure 6.4), as well as discussing the chords in some bars such as bar 8, which was another difficult area. This analysis led to greater understanding and deeper learning, on the part of David, which helped when putting it HT. Because these activities were more optimally challenging for David, I observed an increase in his motivation and engagement, and he became eager to finish *Lullaby*. Using the same approaches, it did not take him long to finish the piece HT during this lesson.

Over the following few weeks, we continued to focus on memorising LH and then making connections between each phrase to help it flow, in addition to dynamics and other detail work. Despite a shaky start in the initial stages of learning, David came to have a deep understanding and knowledge of *Lullaby*, and it became one of his favourite pieces to play at the time of examination.

Study in C

Bruner (1961) discussed the importance of preparing the mind for discovery learning. In Cycle 2, I accomplished this ‘preparation of the mind’ prior to learning *Study in C* (See Figure 6.5), by creating a chord chart worksheet (See Figure 6.6) for David which included the different inversions and arrangements of the chords of C, G and F. Prior to this, we revised arpeggios and then used the worksheet to analyse these 3 chords as the harmony of *Study in C* was based on them. This worksheet was successful, as David demonstrated his understanding of these chords and their inversions by applying his knowledge to the final activity on the worksheet - filling in the various F major chords correctly and with ease.

Figure 6.5. Study in C by Hermann Berens - Original sheet music

Study in C
50 Pieces for First Beginners, Op. 70
Hermann Berens

Allegro
p

cresc. *mf* *p dolce*

mp *mf* *dim.*

mf

cresc. *f*

Figure 6.6. Study in C - Chord Chart Resource Sheet

C major

root 3rd 5th triad root 1st inversion 2nd inversion C7

11 **G major**

root 3rd 5th triad root 1st inversion 2nd inversion G7

21 **F major - add the missing notes**

root 3rd 5th triad root 1st inversion 2nd inversion F7

As heard in this [David - Audio Excerpt 2.1](#), scaffolding his learning in this way prepared him for analysing the chords of *Study in C* as he did not show much difficulty naming the intervals and chords; immediately identifying the F major chord in bar 6, and the 7th chord in bar 7, from just looking at them. Although David got confused and said it was F7, most likely because the F was the 7th note, he realised it was G7 once I pointed out that F was the 7th. I did give him some information unnecessarily here like naming the notes in bar 6; he could have accomplished this himself. Despite this, I was happy with how I facilitated well-scaffolded discovery learning and noted a significant improvement in my teaching compared to Cycle 1 and when teaching *Lullaby* in this same cycle.

The following week (Cycle 2 – Lesson 8) David began to show increased motivation, independence, and competence as he made connections between bar 5-8 and bar 21-24, which we can see in Figure 6.5 are the same, in addition to attempting bar 1-8 HT and continuing RH to the end on his own without any guidance or encouragement. By lesson eleven, however, it was evident the LH was causing issues, and that I removed the scaffolding too soon. I went back over the LH in this lesson, asking David to name each chord and fill in a blank sheet of music with the chord symbols over each relevant bar. This was to ensure he had a complete understanding of the harmonic structure before continuing. In [David - Audio Excerpt 2.2](#), we can hear David naming the chords in bar 1-8. This helped with playing the correct pitches, but in lesson twelve, David played *Study in C* from memory with many hesitations, as you can hear in [David - Audio Excerpt 2.3](#). It was evident that he practiced, but I could see that it was *how* he approached his practice that was the issue here.

To help David eliminate these hesitations we discussed the importance of a good learning strategy at home; working in sections, like in our lessons. For example, working on each section hands separately, then HT, followed by two sections together, etc. (Hallam, 1998), and compared this to trying to play from memory HT before it was fully known. David came back the following week eager to show me his improvement over the week and said he practised it in small sections, like we practised in class. While there were a few slips, as you can hear in [David - Audio Excerpt](#)

[2.4](#), there was a remarkable difference in the flow and ease in which he played this piece now and he did not hesitate with his chords either.

These findings are consistent with the work of McPherson (2005) and Evans, McPherson and Davidson (2013) which explicate that a good learning strategy can make a substantial impact on your progress, even in just a week; enhancing your performance and motivation to learn and practise. This teaching and learning experience also highlighted the importance of continually returning to the basics, for example asking the student to name the chords they had discovered weeks previously, to ensure full understanding of what is known, before advancing and building new knowledge; a faulty foundation will likely lead to difficulties in the future, but the right approach can prevent this.

Cycle 3 – 2020

Cycle 3 is when I developed the most as a teacher/facilitator, and David developed into a more competent, motivated, and independent learner. On review of the recorded lessons, it was evident that I struggled with facilitating discovery learning throughout Cycle 1-2, often needlessly providing David with information he could discover for himself. In contrast, Cycle 3 had little instances of this, and I only provided information when it was necessary, for example when David began to get frustrated in lesson seven, trying to identify the harmony note on RH, bar 7-9 of *Nuvole Bianche*, by ear, seen circled in Figure 6.7. He discovered the F in the middle voice in the previous bars, but I had to tell him it was an Eb as I could see he was getting frustrated and anxious when he could not find the correct pitch. I had to use my judgement here and I felt it was essential I stepped in; negative emotions such as frustration and anxiety have no place in the one-to-one piano lesson.

Figure 6.7. Excerpt from *Nuvole Bianche* - bar 5-8 – Where David struggled to discover the Eb

The image shows a musical score for the piece 'Nuvole Bianche'. It consists of two staves: a treble clef staff for the right hand and a bass clef staff for the left hand. The time signature is 12/8. Above the treble staff, there is a tempo marking '♩ = 78 poco accel.' and a rehearsal mark '5'. The score spans four measures. The first measure is a whole note chord. The second measure contains a melodic line in the right hand. A red rectangular box highlights a specific melodic phrase in the right hand that spans across the second and third measures. The bass staff contains a simple accompaniment of chords.

Another significant teaching and learning development in Cycle 3 was the provision of increased autonomy-support. The participants were always given a choice in the repertoire they learned, but this was the first-time participants were given control over the approaches they employed to learn each piece; they gained complete autonomy over both their learning content and the process. This may have been a little unnerving for me, as their teacher, in the beginning, but as we will see from David's development over Cycle 3, this contributed positively to David's growth into an independent, motivated, and engaged learner. In addition to the pieces discussed below, it is interesting to note that throughout the year David also often independently learned other pop pieces at home such as *Lost Boy* by Ruth B (Berhe, 2015) and *All of Me* by John Legend (2013), something he never did prior to Cycle 3. Furthermore, this was the first time he continued to learn substantial additional sections of his pieces between lessons, as is discussed in the following sections in detail.

The Entertainer

From lesson one of Cycle 3, it was evident that I was already closer to creating an optimal learning environment and, through reflection and analysis of the previous two cycles of action research, I found my approaches to teaching had developed. [David - Audio Excerpt 3.1](#) provides an insight into how I facilitated discovery learning and analysed a piece throughout an entire lesson when first learning a new piece of repertoire; an arrangement of *The Entertainer* by Scott Joplin (See Figure 6.8 for excerpt and Appendix O for complete annotated sheet music). This was consistent with the approach employed in subsequent Cycle 3 lessons. My approach to scaffolding lessons also

continued to improve and [David - Audio Excerpt 3.2](#) provides an example of how I scaffolded David's learning activities with the goal of putting bar 29-32 of *The Entertainer* HT.

Figure 6.8. Excerpt of *The Entertainer* by Scott Joplin - Annotated Sheet Music

The image shows a page of annotated sheet music for "The Entertainer" by Scott Joplin. The music is in 4/4 time and marked "Ardante" with a dynamic of *mf*. The piece is divided into six numbered sections, each indicated by a red bracket and a red number above the staff. Section 1 (bars 1-4) starts with a treble clef and a bass clef. Section 2 (bars 5-8) continues the melody. Section 3 (bars 9-12) features a more complex melodic line. Section 4 (bars 13-16) is marked with a red box containing the text "5 = bar 1-16". Section 5 (bars 17-20) includes a *cresc.* marking. Section 6 (bars 21-24) ends with a *Fine* marking and a dynamic of *f*. Fingerings are indicated by numbers 1-3 above notes, and dynamics like *mf*, *cresc.*, and *f* are placed near the notes. The bass line is consistently simple, often using a single note or a simple chord.

I felt the teaching and learning of *The Entertainer* went particularly well, with David learning to play it all HT from memory in six weeks. I have no doubt this was in part due to my improved teaching approaches and scaffolded activities, but another contributing factor was David's improved learning strategies. Like in the learning of *Study in C* in the previous cycle, David further developed in this area, and in Lesson four I could see how, when learning by ear, he was now using a practical learning style (Green, 2014). In [David - Audio Excerpt 3.3](#), you can hear David searching for a correct note of Riff 6 (See Figure 6.9) and, once he found the E he then used it as an 'anchor note' from which he found the other notes. This use of 'anchor notes' is consistent with how Green

(2014) distinguishes the ‘practical learning style’ from others. This is an improvement from the impulsive learning style seen in David in Cycle 1.

Figure 6.9. Excerpt from *The Entertainer* – Part of Riff 6.



David’s competence and confidence also continued to grow in this cycle, as is heard in [David - Audio Excerpt 3.4](#), where he clearly and confidently discussed the similarity between bar 17-20 and bar 25-28 and did not hesitate to name the final note of each of these phrases without looking at the sheet music. This was his first-time learning bar 25-28 by ear but his knowledge of the piece was so strong he could recall the G in bar 20 immediately.

Nuvole Bianche

Nuvole Bianche (See Figure 6.10 for annotated sheet music with riffs marked out, and Appendix P for larger version), by Ludovico Einaudi, was a long and relatively difficult piece for David’s level at the time, but the approaches and learning strategies learned by David over the duration of this project culminated in his learning of this piece. Table 6.2 summarises David’s learning over the eleven lessons in which he worked on *Nuvole Bianche*. The content covered in each lesson is summarised in the third column, and the work David did at home is on the far-right column. The weeks in which he did extra, independent learning of his own volition, is highlighted in yellow.

Figure 6.10. *Nuvole Bianche* by Ludovico Einaudi - Annotated Sheet Music

Nuvole Bianche Ludovico Einaudi

1. $\text{♩} = c.40$ allarg.

2. $\text{♩} = 78$ poco accel.

3. *p*

4. ($\text{♩} = 80$) poco cresc.

5.

7. $\text{♩} = 84$ *mp*

6 = bar 1-20

11 = bar 21-34

15 = bar 35-50

18 = bar 35-50

19.

20.

21.

22 = bar 51-59

a tempo = 88 23.

24. *p* molto rit.

25 = bar 60-65

Table 6.2. Summary of Learning - Nuvole Bianche

Week	Date	Covered in class	What he did after the lesson (at home)
7	09/01/2020	Bar 1-12 RH	Bar 1-12 RH & bar 51-52 melody notes RH by ear from YouTube
8	16/01/2020	Bar 1-20 RH & bar 51-52 RH	Bar 1-20 RH & bar 51-52 RH
9	30/01/2020	Bar 1-20 RH & bar 1-4 HT & bar 5-9 LH	Bar 1-20 RH & bar 1-12 HT & bar 12-20 LH
10	06/02/2020	Bar 1-20 HT	Bar 1-20 HT
11	13/02/2020	Bar 1-20 HT & bar 21-34 RH & bar 51-53 RH	Was away with school so not much practice done this week
12	27/02/2020	Bar 1-28 HT	Bar 1-28 HT & added pedal to bar 1-12 HT & learned bar 43-46 RH
13	05/03/2020	Bar 1-28 HT & bar 29-34 HS & bar 34-46 RH	Bar 1-34 HT with pedal & bar 34-52 RH
<i>Note: Covid-19 Pandemic struck – moved to home-schooling & online ZOOM lessons</i>			
14	02/04/2020	Bar 1-34 HT & bar 34-59 RH	Bar 1-34 HT & bar 34-52 RH
15	23/04/2020	Bar 1-42 HT & 51-65 RH	Bar 1-42 HT & 51-65 RH
16	30/04/2020	Bar 1-59 HT & bar 60-65 HS	Bar 1-59 HT & bar 60-65 HS
17	07/05/2020	Bar 1-65 HT	Bar 1-65 HT – lots of practice done on this

As can be seen in Table 6.2, prior to the Covid-19 pandemic hitting in March 2020, David learned additional sections most weeks. Throughout each week, except for week eleven when he was away on a school trip, he practised what we covered in class. If we compare David’s progress and motivation for learning with the previous two cycles, where he often did not practise much between lessons, this signals a significant development in his learning, and, by extension, my development as a teacher as I strived to create optimal learning experiences for my students.

Discussion

It is difficult, if not impossible, for teachers to consistently create activities which strike the right balance between challenge and skill; all we can do is try to achieve such a goal. This snapshot of David's lessons provided an insight into the impact of optimally challenging activities on musical development and learning experiences, in addition to the frustration and problems caused for both student and teacher when activities are too challenging, such as avoidance and a lack of progression. During the three cycles of action research, I endeavoured to create activities that would be engaging and challenging for David, who, throughout his interviews, said he enjoyed being challenged and had a positive attitude towards the concept.

Student Development

When I used to play piano, I used to look at the sheet music most of the time and then it would take me longer to learn it but like I can just listen to it and I can hear it, now it's easier to just play it cause I know what it sounds like and I know the notes and stuff.

(David – Cycle 3 – Post-intervention interview)

David mentioned several times throughout his final interview that he finds learning easier now, particularly by ear, or when learning a piece through reading and musical analysis after listening to it. While he repeatedly said he found it easy, he discussed how he enjoyed these approaches and did not mention feeling boredom; this suggests that it was never *too* easy, but rather easy in comparison to before (Csikszentmihalyi, 2002; Shernoff and Csikszentmihalyi, 2009). This, in addition to the empirical data discussed in this chapter, indicates that David was rarely optimally challenged in the past and, instead, was often pushed beyond his skill level, as was seen in some instances in Cycles 1 and 2. In contrast, by Cycle 3, he appeared to be, for the most part, consistently optimally challenged, and in his Cycle 3 – post-intervention interview, a greater sense of excitement about learning was observed, in comparison to his previous interviews. For example, when he spoke about

learning solely by sheet music in the past it sounded like a struggle, compared to how he learned in Cycle 3, which he found enjoyable.

David's mother provided a similar account of his learning trajectory, as she commented on his development and increased enthusiasm over the years. She mentioned that he was independently learning pop pieces at home now, and that 'he's definitely playing harder pieces and I think he has definitely improved' (David's parent – Cycle 3 – Post-intervention interview). Although she did not seem to be aware of how my pedagogical approaches had changed when I began this research project, despite having received the information sheet, and speaking about it, prior to the commencement of the study, she stated 'I think whatever style of teaching you have he really likes that, because I think he has definitely thrived in the past year or two'. While David's musical development and increased engagement with learning was evident to me as his teacher, both David and his mother also noted a significant and positive change in David's musical competence, motivation to learn, and independence, in addition to an improved learning experience overall.

We can see in the data and analysis provided in this case study, that David developed good learning strategies, which are found to lead to higher levels of motivation, engagement and performance, in addition to an increased likelihood of continuing to play (Evans, McPherson and Davidson, 2013; McPherson, 2005; Pitts, Davidson and McPherson, 2000; Ryan and Deci, 2020). Furthermore, he became more autonomous and intrinsically motivated over the course of this research, as he learned additional pieces for the inherent satisfaction of learning them, and not for any externally regulated reason. In summary, David learned to take control of what and how he learned and became an independent, competent, and motivated learner.

Challenges

As mentioned above, there were several challenges faced throughout this project. Time constraints within the lesson itself or with an upcoming examination can have a detrimental effect on how we, as teachers, implement our pedagogical approaches, causing us to rush through sections which, as

demonstrated in David's case, often leads to no progress during the week due to a lack of security, skill level or motivation to practice the given task. Performance-contingent rewards, such as examinations, have been empirically proven to be the most harmful form of reward as they entice people to take the shortest path to their desired outcome (Ryan and Deci, 2017; Ryan, Mims and Koestner, 1983), as was observed in both David, and me, in Cycles 1 and 2. It is difficult not to be influenced by upcoming examinations in this way, but as highlighted by this case study, hasty progress does not lend itself to an optimal learning environment, deep musical understanding and development, or positive teaching and learning experiences.

Continuity between lessons was another issue, as David was often missing for extended periods, missing five consecutive weeks in Cycle 1, and four weeks in Cycle 2, due to school trips, holidays, and illnesses. Students missing lessons and holidays means progress often halts, particularly when students lack the skills or motivation to partake in self-directed, independent learning. Furthermore, if little practice is done in this time it can result in a significant amount of time spent on revision in subsequent lessons. Cycle 3 provided us with an insight into the advantages of students becoming self-sufficient and motivated, as these long, often unexpected, breaks were no longer an issue for David; he demonstrated that he had the tools, skills, and motivation to continue learning over extended periods without lessons, often continuing to learn new material independently. During Cycle 1 and 2 he evidently did not possess these skills or the motivation to learn in this way yet.

Reflection in Action

Cycle 1 was my first attempt at implementing these approaches. Therefore, it involved a lot of trial and error, but I learned from these experiences and, overall, my development as a teacher/facilitator, and David's development as a learner, was successful. While I struggled in the beginning with discovery learning and often imparted knowledge on to David unnecessarily, by Cycle 3 I had mastered this and only gave new information when it was essential. My approaches became more

bottom-up, than top-down, as the examination no longer predominantly guided my curriculum; instead I became guided by the student and their needs, and the learning process became more of a dialogical, student-teacher partnership where students were treated as equals, and given ownership over their learning (Evans, McPherson and Davidson, 2013; Evans, 2015).

While I always gave students a choice in the repertoire they learned, and examination type (guided by their parents), my autonomy-support developed further over the course of this research, and in Cycle 3 I began providing students with a choice of learning approaches. I began to trust that my students would use their prior knowledge, skills, and experiences from Cycle 1 and 2 to make educated decisions on what approach is best for each learning situation, which they did. If the initial chosen approach did not work out, they had the autonomy and confidence to change approach and find what worked best for each situation. By Cycle 3 I learned to take a step back from being the teacher, but constantly remained there for the student, on the periphery, as an autonomy- and competence-supportive facilitator; guiding them through discovery learning and optimally challenging and scaffolded activities, based on their choices. This helped create an environment where the student could feel effective and competent and have the space and autonomy to develop both musically and personally.

Creating an Optimal Learning Environment

Optimal Challenges

Providing optimal challenges for students is an essential part of creating an optimal learning environment. An optimal challenge involves meeting the student's current skill level and pushing them slightly beyond it through challenging activities (Csikszentmihalyi, 2002; Shernoff and Csikszentmihalyi, 2009; Valenzuela, Codina and Pestana, 2018). If students are not provided with sufficiently challenging activities, they can become bored and disengaged (Csikszentmihalyi, 2002; Ryan and Deci, 2017). However, if pushed too far beyond their skill level, it can be equally

harmful; the challenge becomes too difficult and leads to the student becoming anxious, which often leads to avoidance of the task presented (Csikszentmihalyi, 2002; Ryan and Deci, 2017).

This was realised during some of David's lessons, particularly in Cycle 1 and 2, when the challenge was too great for David, and he, therefore, did not practice between lessons. The common thread between these instances was me expecting too much of him, and not ensuring he was fully secure with his learning task for the week before leaving his lesson. Different challenges resulted in me teaching this way such as exam pressures and a shortage of lesson time, but as this account illustrated, pushing students past their skill level results in wasted time and little learning and development on the student's part. In Cycle 3, however, the benefits of setting optimally challenging activities, and continually implementing a discovery learning approach were realised; David became more engaged and independent, both in his lessons and at home.

Structure

The literature encourages the use of structured lessons, with each activity scaffolded in a way that is optimally challenging for the student (Bruner, 1960; 1961; 1966; Jang, Reeve and Deci, 2010; Ryan and Deci, 2017). SDT explicates that structure, when provided in an autonomy-supportive way, is essential in the creation of an optimal learning environment and enhances student engagement and learning outcomes (Jang, Reeve and Deci, 2010; Ryan and Deci, 2017; 2020), in addition to giving students a sense of control over their lesson activities, goals and learning outcomes (Jang, Reeve and Deci, 2010). Throughout this research I endeavoured to clearly communicate directions and expectations to the participants; guiding them through each activity which I created for them; maintaining consistency in each lesson; and providing constructive and positive feedback. This approach, according to SDT, assists in scaffolding student's learning and provides optimal-challenges which result in enhanced feelings of competence and engagement (Jang, Reeve and Deci, 2010; Ryan and Deci, 2017).

Discovery Learning and Scaffolding

The educational theories outlined in detail in the theoretical framework also advocate the use of discovery learning, where the teacher does not impart new knowledge on to the student, but, instead, builds on their existing knowledge and guides them to discover new knowledge for themselves. This can lead to deeper learning and greater engagement and understanding (Bruner, 1961), in addition to feelings of enhanced autonomy and competence (Jang, Reeve and Deci, 2010; Ryan and Deci, 2017). I illustrated in this case how I acted to integrate these theories into my teaching to further enhance my students' learning experiences, musical development, motivation to learn, and propensity for self-directed and independent learning.

Scaffolding temporarily supports the construction of new knowledge and skill development. The teacher works with the student and builds on their prior knowledge by guiding them through optimally challenging tasks which may otherwise be too difficult for them to achieve alone. The teacher then gradually removes the scaffolds as the student becomes more independent and self-sufficient (Bruner, 1961), which is seen over the duration of this study and illustrated here by David's case. Scaffolded activities were employed in this study simultaneously with a discovery learning approach where the student was guided by helpful statements or questions from the teacher to discover new knowledge for themselves (Gage and Berliner, 1998).

Discovery learning has been found to lead to deeper learning and understanding, increased engagement and internally regulated motivation (Bruner, 1961; Gage and Berliner, 1998; Ryan and Deci, 2017). I strived to facilitate discovery learning throughout this study with David, and the other participants, through discussions, problem-solving and inquiry. This was sometimes challenging to employ as examination pressures, time constraints and my own teaching biases influenced my teaching practices. However, as my teaching skills improved over time and I learned to consistently provide opportunities for discovery learning throughout each lesson, the student participants developed concurrently. The students became more independent and effective learners; often learning large sections of music or new pieces on their own at home of their own volition. Learning

by ear and analysis both involve problem-solving, with students using their musical skills and knowledge, and in the former case in particular, their aural awareness. The benefits of discovery learning found in previous studies and in this study was demonstrated through David's Cycle 3 data, which was provided here.

Advantages of an Optimal Learning Environment

In summary, this case study has given an insight into how one might create an optimal learning environment in the one-to-one piano lesson using formal and non-formal learning approaches, discovery learning, scaffolded activities, and structure. As in the literature (See Evans, McPherson and Davidson, 2013; Evans, 2015; Bruner, 1966; Ryan and Deci, 2017) I advocate for a move away from traditional, prescriptive teaching and learning methods often used in the one-to-one piano lesson, where the teacher imparts all knowledge on to the student and is often dominated by Western Classical Music ideology and examination syllabi; largely focusing on reading skills and technical proficiency. Instead, moving towards a proactive, competence- and autonomy-supportive learning environment where the student is involved in discussion, analysis, active listening and, ultimately, critical thinking and decision-making.

In addition, this case study illustrated that an optimal learning environment can help students become autonomous, competent, and self-motivated learners with the skills required to partake in independent learning. This involves helping students make musical connections which may otherwise not be made, through discovery learning and well-structured, scaffolded, and optimally challenging activities. This can enhance their musical understanding and make learning more accessible and engaging in a positive learning environment. While it takes time to adapt to consistently implementing such approaches, and to see results, it is certain that teachers who do, and persevere, will help their students to flourish into independent and motivated learners, like David (Jang, Reeve and Deci, 2010; Ryan and Deci, 2017).

CHAPTER 7 - CASE 3 – RITA – FROM POTENTIAL DROPOUT TO MOTIVATED LEARNER

Introduction

I know how much music has impacted me and my life, and really seeing how, when you know you can learn it by ear and you can learn it differently, how much that helps you in your life besides music, and then how therapeutic music is, like when I said when I was stressed I'll go and play it, and how much it has like impacted people's lives and really helped them. I'd like to show that to other people. Show how much it could help them.

(Rita – Cycle 3 – Post-intervention interview)

The above excerpt is from Rita's Cycle 3 post-intervention interview after she was asked how she sees herself playing piano in the future, and why she had decided that she wanted to teach it? We can extrapolate from Rita's words, above, that learning to play piano, and more importantly how she learned piano, had a significant impact on her. At the time of her Cycle 3 post-intervention interview, from which this excerpt was taken, Rita highly valued her learning experience, so much so, that she wished to help others experience the same.

While, like the other participants, Rita gained independence over the course of this research, and often learned new pieces on her own, predominantly by using a combination of learning by ear and chord charts, it is her changing perception of piano and motivation to learn that is most significant. This chapter examines Rita's development, from potential dropout to motivated learner, and how the alternative formal and non-formal pedagogical approaches implemented in this research impacted her changing perspective.

In the previous two cases I demonstrated how the alternative approaches implemented in this research evolved over three cycles of action research, and how they impacted both students' musical development. Therefore, it is not necessary to discuss this aspect of Rita's learning in detail, as the approaches were implemented in the same way. Instead, this case study focuses on Rita's experience of the formal and non-formal approaches, and the impact they had on her, in her own words.

In this chapter, I will, firstly, examine Rita's accounts of her initial experiences of learning piano, and how parental pressures, examinations, and her difficulty with focus, impacted her motivation to learn piano. I will then look at her experiences of non-formal and formal pedagogical approaches over the duration of this research, before discussing the four themes which emerged from the analysis of Rita's interview transcripts, her parent interview transcript, and the recordings of her weekly piano lessons. These themes are autonomy, independence, musical competence, and motivation and values. Finally, I apply the findings from Rita's case study to Deci and Ryan's OIT Taxonomy of Motivation (2017) and illustrate, using quotes from all four interviews, how, over the duration of this research, Rita moved from having an external PLOC, to an internal PLOC. In other words, how she went from lacking motivation, to becoming an intrinsically motivated and autonomous learner, with the musical skills and knowledge required to partake in lifelong independent learning.

To provide further context for the reader Table 7.1 offers an overview of the pieces Rita learned as part of this project, and in preparation for her graded examinations, most of which will be referenced in this chapter. In addition, this table provides some relevant information on Rita's musical background, and her ages throughout the duration of this study.

Table 7.1. Student Profile - Rita

Student Name	Rita
Age at start	11
Age at end	13
School class at start of project	6 th class, primary school
Cycle 1 - 2018	RIAM Grade 2 Piece: <i>Allegro Assai, Op. 38, No.8</i> by Johann Wilhelm Hassler
Cycle 2 - 2019	Redline Pop Step 2 Piece 1: <i>My Shot</i> (arrangement) from Hamilton Piece 2: <i>Dear Theodosia</i> (arrangement) from Hamilton
Cycle 3 - 2020	Redline Pop Step 3 Piece 1: <i>All is Found</i> (arrangement) from Frozen 2 Piece 2: <i>Waltz, Katzen Blut</i> (arrangement) from The Cat Returns
Years of tuition (end of project)	6 years
Years with me (end of project)	6 years
Background	Rita is a musical but anxious student who finds it difficult to focus and often doubts herself. She began to partake in RIAM exams from the beginning as her mother wanted her to, but her anxiety resulted in a negative experience. We decided to change to Popular music assessments as she has a keen interest in musicals, and this allowed her the flexibility to play this style of music. This reduced her anxiety levels greatly around examinations and she even began accompanying herself while singing in these examinations. Rita’s mother sings professionally but always wanted to accompany herself on piano. She had a bad experience with a piano teacher as a child which resulted in her quitting after a short time, but she wanted to make sure her daughters can play.
Other instrument(s)	Rita sings but has no formal training. She also did group tin whistle classes in primary school. She did not enjoy these classes but during Cycle 3 she began to teach herself tin whistle again.

Initial Experiences of Piano: Motivators and Stressors

In her Cycle 1 pre-intervention interview, Rita’s favourite aspect of playing piano was impressing others:

When we do a school talent show or anything I’m able to just get the keyboard and straight away just be able to do something, like be able to play, and everybody gets really impressed.

(Rita – Cycle 1 – Pre-intervention interview)

Rita was eleven years old at the beginning of this research and the lack of interest and engagement she displayed, and importance placed on the approval of others, showed external/introjected regulation (Ryan and Deci, 2017); a form of extrinsic motivation prevalent in this age group. Research has shown that, between the ages of eight and sixteen years old, children and adolescents display a steady decline in their intrinsic motivation for learning each year (See Ryan and Deci, 2017, pp. 354-357). However, contrary to these findings and despite being in this age group, over the course of this research Rita displayed a notable increase in her motivation to learn piano and came to value having the skills to learn and play piano for more internally regulated reasons.

Parental Pressures

Rita's mother discussed the intrinsic motivation exhibited by her daughter to learn piano at a young age:

From a very young age, like at 2, Rita was constantly asking for a piano and could she play the piano. She was just really interested in the piano from when she was a baby so, now, I would have always intended on getting her classes anyway, or doing it, but she showed a huge amount of interest in it and wanted to start, like she was waiting to get to the age when she could start playing piano, so she was very enthusiastic about it.

(Rita's Mother – Cycle 3 – Post-intervention interview)

As mentioned in Table 7.1, Rita's mother had always wanted to play piano, and it is likely that her interest led to Rita's exposure to piano and interest in learning piano at this young age. Interestingly, however, Rita's memory of why she began to learn piano was different, and in her first interview said:

First my mam forced me and then I did want to continue. She was constantly saying to me 'whatever happens you're learning the piano' so then I had to learn it.

(Rita – Cycle 1 – Pre-intervention interview)

Rita's use of language here, particularly the word 'forced', implies that she did not feel she had any autonomy or choice over learning piano. Although Rita may have exhibited an interest as a young child, but does not mention this, Rita's mother said, 'I would have always intended on getting her

classes anyway'. It is possible that Rita's mother was so intent on Rita starting lessons, that Rita's initial intrinsic motivation to learn piano was lessened by the lack of autonomy she had over the matter, and the knowledge that she had to learn piano irrespective of her feelings. This resonates with Evans, McPherson and Davidson's (2013) findings; that many students who dropped out of instrumental lessons during their ten-year empirical study said they did so because they felt forced to learn by their parents.

This tension between what Rita's mother wanted and Rita's own intention with piano carried on throughout Cycle 1 and it was difficult to deduce what Rita intended for her future with regards to continuing to play piano, and how much her mother's aspirations influenced her. Rita continued to use strong, decisive language with regards to her mother's intentions, but less convincing language around her own:

Aoife: How far in the grades do you want to go? Like how important is it to get to Grade 8?

Rita: Well, if I didn't want to anyway my mam would force me.

Aoife: She wants you to get to Grade 8?

Rita: Yeah, but I think I'd just like to myself anyway.

Aoife: And what about after Grade 8, would you keep playing?

Rita: My mam said she wants me to be a piano teacher for some portion of my life so probably that.

(Rita – Cycle 1 – Post-intervention interview)

In her Cycle 1 interviews, Rita never seemed certain about wanting to learn piano, and in her final Cycle 3 interview admitted that, like Evans, McPherson and Davidson (2013) found with some of the participants in their study, that she wanted to cease lessons at the beginning of this research. However, it is noteworthy that Rita stopped mentioning her mother's wishes regarding her piano education from Cycle 2 onwards and began to focus on what she wanted. This will be discussed in the subsequent sections.

Examinations

So, we used to get a book from the Royal (Irish) Academy of Music, and you'd have to pick 3 songs from the book and learn them using sheet music and then do a test at the end of the year... I didn't like that we had no choice in the songs we were doing, so like, if there was six songs and you've to pick three and you didn't like any of them, you'd have absolutely no motivation to keep doing it because when are you ever going to play that song again outside of the test?

(Rita – Cycle 3 – Post-intervention interview)

This was Rita's response when asked how she used to learn piano with me prior to this study. It was the first question asked in this interview and it was interesting how she immediately focused on her experience of preparing for formal graded examinations, and examinations were not mentioned by me prior to this. This resonates with the research that found that there is often an overemphasis placed on graded examinations in instrumental lessons (Evans, McPherson and Davidson, 2013), and that the examination has come to dictate how we teach; the examination syllabus has essentially become our curriculum (Fleischmann, 1952; Swanwick, 1999; Taaffe, 2014).

Rita began piano lessons when she was almost eight years old, and almost immediately started working towards her first graded Royal Irish Academy of Music (RIAM) examination, so it is not surprising that she associates her initial piano learning experiences with preparing for these exams. This focus on examinations had a negative impact on Rita's learning experiences, and she continually referred to the stress she felt due to these examinations. For example,

Aoife: Is there anything you don't like about playing piano?

Rita: Am, the exams. Just the stress of the exams.

(Rita – Cycle 1 – Post-intervention interview)

When we were doing the Royal (Irish) Academy (of Music) exams, it would get like really, really stressful.

(Rita – Cycle 2 – Post-intervention interview)

The stress and anxiety Rita exhibited when her examinations approached appeared to increase each year. As I reflected on Rita's progress after Cycle 1, and her evident lack of motivation and engagement, I realised something had to change or Rita would cease learning and playing piano. She disliked the examination process and the limited choice of repertoire; again, the lack of

autonomy she felt over this may have contributed to her negative feelings as her basic psychological needs were not being met (Evans, McPherson and Davidson, 2013; Ryan and Deci, 2017).

However, Rita mentioned several times that she liked to ‘move up the levels’ and obtain a certificate each year. This resonates with Davidson and Scutt’s (1999) findings of the sense of achievement obtained by completing examinations. Therefore, I suggested trying Redline popular music assessments in Cycle 2, as this would give her complete autonomy over her repertoire choices, as found beneficial for instrumental music students by Evans (2015), yet maintain that graded, progressive structure she liked, and provide her with a certificate at the end of the year. This worked well and in her Cycle 2 post-intervention interview Rita said, ‘I think this year was very nice’, and when asked if she would like to return to RIAM examinations the following year she said ‘no’. Instead, she continued with popular music examinations, which particularly suited the learning by ear approach, and the use of chord charts, which Rita enjoyed using. These examinations appeared to better meet her musical needs and interests and, as you will see from her experiences in the following sections, Rita thrived from Cycle 2 onwards.

Focus

Rita’s difficulty with focusing and getting easily frustrated came up several times throughout the data, both in her weekly lessons, and in her interviews, in addition to her low tolerance of stress, as was discussed in the examinations section. Rita was not diagnosed with, or tested for, a learning difficulty or developmental disorder, but her difficulties with focus were evident in comparison with the other participants, and this undoubtedly impacted her learning, sometimes making learning difficult. In Cycle 2 Rita discussed how our previous way of learning through reading notation frustrated her, but how learning by ear and analysing music helped with her engagement and enhanced her experience:

I would just get frustrated on the, when I was just learning it by paper, I'd get frustrated like reading it and stuff, and I'd get bored, so now I think when I have different ways to learn it it's more interesting.

(Rita – Cycle 2 – Post-intervention interview)

Although, interestingly, Rita also mentioned that having notation and using chord boxes did not require her to 'focus properly' when playing, and therefore was one of the reasons why it became her favourite way to learn:

I liked the chords the most, and then by ear... I'd say, like, having it on a piece of paper is handy when you're not like focusing properly and you need to just look and see oh it's that note and then I can get it from there on.

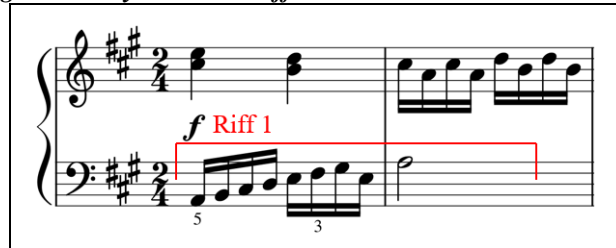
(Rita – Cycle 2 – Post-intervention interview)

However, Rita was notably proud of when she did focus, and realised the positive results this focus produced, for instance in her first experience of learning by ear she stated, 'I'm definitely going to remember that because I had to work hard to get it' (Rita – Cycle 1 – lesson 1). These alternative approaches increased her focus, or engagement, while learning, and made learning more accessible and engaging in comparison to learning solely through reading notation.

Experiences of Non-Formal Approach

From our first lesson in Cycle 1, using the HeLP approach, I could see a change in Rita's enthusiasm, engagement, and focus. Although she struggled to find the second last note (E) in Riff 1 (See Figure 7.1) by ear, she immediately identified the scalar pattern, and showed enhanced levels of engagement and focus, while trying to figure out the notes. As mentioned previously, Rita tended to be anxious and doubt herself, which we can hear in [Rita - Audio Clip 1](#), as she waited for me to tell her what she played was correct before she celebrated her success. Despite this initial lack of confidence, it was evident, when she exclaimed 'yaaayy!' at the end of the above audio clip, that she was very proud of her achievement.

Figure 7.1. Excerpt from *Allegro Assai* by Hassler - Riff 1.



Rita often commented on how she enjoyed learning by ear during her lessons. It quickly became her favourite learning approach during Cycle 1, and it remained her favourite in Cycle 2. She discussed why she enjoyed it in each post-intervention interview. In Cycle 1 she claimed, ‘it just changed it up from all my years of just learning it normally, it just changed it and it’s more interesting’ (Rita – Cycle 1 – post-intervention interview). Furthermore, she felt this approach helped with her memory of *Allegro Assai*, in addition to being able to start at any point in the music – something she could not do when learning through notation only:

If I had to just start here I could but then in *Swinging Along* if I had to start here, I’d be like ‘what?’... With *Allegro Assai*, just because I could pick it up anywhere, and then Melody when I went wrong, I couldn’t pick it up. I think actually why I found it easier to pick it up was because we kind of learnt it by ear, bar by bar by ear.

(Rita – Cycle 1 – Post-intervention interview)

With continued positive learning experiences like the one we heard in the previous audio clip, Rita’s confidence slowly began to build, and she also noted this development:

I’m definitely more confident because at the start I was a bit sceptical but now I’m a lot more confident just learning stuff by ear.

(Rita – Cycle 1 – Post-intervention interview)

In Cycle 2 she continued to discuss her experiences of learning by ear in a positive and confident manner:

I liked that I could pick up the piece fairly fast, like by ear, so I always knew what it sounded like because that’s what I’m like with music, any music.

(Rita – Cycle 2 – Post-intervention interview)

Finally, in her Cycle 3 interview, she explicitly discussed this growth in confidence with learning by ear:

I'm a lot more confident in it, like, the other day, what was it... it was a song from a show I was watching, She-ra, and I was like 'I bet you I can play this on piano if I tried' and I went over to the piano, all I had to do was listen to it on the TV and I was able to play it, so I'm really confident about learning by ear.

(Rita – Cycle 3 – Post-intervention interview)

This final comment about her growth in confidence also demonstrates Rita's enhanced aural development, in addition to her development as an independent, confident, and autonomous learner when using this approach. While Rita rarely independently learned a piece in its entirety, she thoroughly enjoyed being able to listen to something and have the skills to figure it out, even if it was predominantly just the melody line. Rita's difficulty with focusing may have impacted her learning needs and goals, as they differ from the other participants in this study. However, she seemed happy just learning sections of pieces and proving to herself that she could indeed do it. Despite this, there is little doubt that learning by ear helped meet these learning needs, and Rita gained the amount of independence she required to learn melody lines by ear from listening to them on TV or online.

Experiences of Formal Approach

Like with learning by ear, Rita enjoyed analysing music and breaking it down into small, manageable sections from the beginning of Cycle 1. On reflection, I realised that looking at a full score at the initial stages of learning a piece, as we did prior to this research, may have been overwhelming for Rita, and this new approach offset this; making learning a new piece more accessible, and therefore enhanced her learning experience in the initial learning stages. Rita described her initial experience of this new alternative approach when learning *Allegro Assai* as follows:

Rita: That was easier, yeah, because you learn all the bits separately and then you put them together, so I thought that was a lot easier'.

Aoife: Did it make it easier to play the piece then? When you had it learnt?

Rita: Yeah, I thought it was, because I think *Allegro Assai* was my best piece in the end.

(Rita – Cycle 1 – Post-intervention interview)

In Cycle 2 Rita appeared to value this approach further, and it became her favourite approach for learning. I was aware *My Shot* (Miranda, 2015) was her favourite piece to play at this stage, but I assumed this was because it was her favourite piece to listen to. Although Rita said she liked the way we learned it, I wanted to ensure this was really the case, but as you can see from the following excerpt, she felt that, if she had learned it solely through notation, her learning may not have been as successful:

Aoife: What about learning by chords and patterns like we did with *My Shot*?

Rita: Oh, yeah, oh yeah, I think *My Shot* was my best piece honestly. I liked the way we learnt it.

Aoife: Yeah, it was good. Was that because of the chords or was it because of the piece?

Rita: I think it was because of the chords, because I don't think I, if I had to learn *My Shot* from like...

Aoife: Reading notes?

Rita: Paper, yeah [both laugh], I don't think I would have got it as fast as I did.

(Rita – Cycle 2 – Post-intervention interview)

Despite Rita calling the approach to learning through reading notation 'frustrating' and 'boring', as quoted earlier, she liked to have notation there as a safety net while playing.

I think it's handy to have the notes because I do like to read them, just if I get stuck on anything, and I'm listening to it and I'm just like 'Oh God, I don't know what this is.' It is handy to have the pieces.

(Rita – Cycle 3 – Post-intervention interview)

This is likely part of the reason the analytical approach became her favourite and worked well for her; she could still have the notation in front of her, often with the chords written in chord boxes, as is appropriate in popular music. This served as a guide and she could think in full chords, as opposed to focusing on each individual note, which as Rita said, can be frustrating and boring.

Development

When investigating Rita's learning experiences over the three cycles of action research, and her comments on her previous learning experiences, four themes emerged from the analysis of Rita's interview transcripts, her parent interview transcript, the recordings of her weekly piano lessons, and my notes in my reflective journal. These were autonomy, independence, musical competence, and values, and Rita's development within these four key areas are discussed in the following sub-sections.

Gaining autonomy over her learning was the most critical development in Rita's learning and this impacted positively on her musical independence, musical competence, and values and therefore this is discussed first. Like the previous two cases, Rita became an independent learner, but often used her new skills to meet her musical needs, which differed from the other participants: she independently learned small sections of pieces predominantly by ear, as a form of stress relief. One could describe it as the equivalent of musical 'doodling'. This is outlined in the second sub-section 'Independence'.

The third sub-section outlines Rita's development of musical knowledge and skills and the impact the alternative formal and non-formal pedagogical approaches employed in this study had on her musical competence. Finally, I discuss changes in Rita's perspective, and how she transformed from a student wanting to dropout from piano lessons to one who highly valued learning and playing piano and wished to share her experiences with others.

Autonomy

During analyses of Rita's interview transcripts and weekly lessons in Cycle 1, it became apparent that she needed to obtain autonomy and control over her learning. She was controlled from the beginning, as discussed previously, with her mother's intention of Rita playing piano and the formal graded examination process predominantly dictating what and how she learned, and how she was

taught by me. This resulted in Rita having a negative learning experience and wanting to dropout, as found in previous studies (Evans, McPherson and Davidson, 2013; Evans, 2015). Fortunately, through the introduction of alternative formal and non-formal pedagogical approaches, autonomy-supportive teaching, and a change in assessment type that better suited her needs as an autonomous piano student, Rita's learning experience transformed from negative to positive over the duration of this research.

During our fourth and final interview Rita discussed her learning experience during Cycle 3 and stated that having autonomy over both what and how she learned became the most important factor for her during our lessons:

What I like about the lessons is that we can choose our own songs and we choose a way to learn it because everyone learns differently and I feel like if you get to choose yourself what way you're learning it, because you're the one that knows what's best for you... I like definitely having the choice.

(Rita – Cycle 3 – Post-intervention interview)

The control Rita gained over her learning in Cycle 3; now being able to choose the learning approach(es) employed, in addition to the repertoire, appeared to give her the confidence she lacked in previous interviews. When asked what approaches she would like to keep the following year she replied:

I think I'll definitely do by ear and by notes, and I think by chords. I think I'll do a mixture of all of it just depending on what I feel like I need to do.

(Rita – Cycle 3 – Post-intervention interview)

At the end of Cycle 3 it was evident that Rita felt confident in deciding what learning approach was best for her in each situation; she had gained control of her learning and was thriving because of it.

Independence

In the beginning, when Rita was asked if she had the skills to learn a piano piece independently, she replied, 'I don't think... I think I'd end up getting frustrated and giving up' (Rita – Cycle 1 – Pre-intervention interview). This remained the same in her Cycle 1 post-intervention interview, but in

Cycle 2 this changed, and her independence and confidence appeared to develop. When asked the same question she replied:

I think I probably have because now when I'm hearing a song, just a different song, like something from *Dear Evan Hansen*, I can pick it up, and I wasn't able to do that when we were learning from sheets, so it's so much better now cause' there will be songs and I'll be like 'oh I know, I think I know'.

(Rita – Cycle 2 – Post-intervention interview)

Later in this same interview Rita mentioned another piece she learned sections of, and made musical connections with previous repertoire she learned, noting its similar repetitive structure:

I've learnt bits of a piece from *Be More Chill*. It's fairly easy because it kind of just repeats. It's a bit like *Dear Theodosia*, but I have learned bits and pieces of it.

(Rita – Cycle 2 – Post-intervention interview)

It was apparent that Rita was becoming independent. However, it was in Cycle 3 that Rita's independence and confidence about her independent learning ability flourished, as we can see in the following discussion:

Aoife: Have you learnt any pieces or songs on your own in the past year?

Rita: Yeah, I've been playing *La Vie en Rose* because I'm going to need it for French, because we're doing a practical thing in French. So, I, generally when I hear a song on my phone I will go and play it on the piano. I have a whole playlist now of songs I just, I'm like 'oh that would sound nice on piano' and I'd take it and I play it.

Aoife: That's really good! So how do you get on with learning those?

Rita: It's fairly simple, like, sometimes I'll do the melody no bother and then sometimes I'll look up the chords or I'll look up someone playing, and I'll be like 'oh that's what that is' and then I'll be able to play it grand.

(Rita – Cycle 3 – Post-intervention interview)

Rita did not ask for help learning *La Vie en Rose* (Piaf, 1947), and I was not aware she learned it until she played it for me in class one day. Throughout Cycle 3 Rita often mentioned pieces she was learning at home, usually pop songs, but when I offered to help her, or asked if she would like to work on them in class, she said no – she was happy learning them on her own at home.

Although, in the interview excerpt above, Rita spoke about using the internet, presumably YouTube tutorials, to help her learn these pieces independently, this approach comes third, after

first trying by ear to figure out the melody, and then using chord charts, which she later said she obtained from guitar websites. Online tutorials were only utilized by Rita when the first two approaches did not suffice. This showed great learning independence, and confidence, as Rita demonstrated how she employed a variety of approaches.

Musical Competence

Increased aural skills and musical understanding using chords and musical analysis are the most notable developments in Rita's musical competence over the course of this research. Her ability to now pick up pieces by ear and her enjoyment of using chords to help her learn new pieces has been discussed at length in the previous sections from Rita's perspective. This development was also noted by Rita's mother, who also referred to Rita's sister Harriet in the following excerpt:

Rita's Mother: I would definitely say that learning it by ear has definitely brought them on a bit, because I think when it was all just learning the notes, whatever, they found that kind of just hard going, whereas the... I think they both kind of surprised themselves that they could play by ear, you know that kind of way? They kind of enjoyed it. When you started doing that with them and when they started doing more chords than notes they definitely tried to play things. Like there might be a song they like and they'll go in and try that more which they wouldn't have done before, you know, they would have thought 'oh I need the notes for that'.

Aoife: Yeah.

Rita's Mother: You know, if they heard a song they'd be like 'Oh I'd love to play that but I need the notes' whereas now I would hear them go in and try and play things themselves, so that's a big difference I noticed.

(Rita's parent – Cycle 3 – Post-intervention interview)

Rita's mother admitted that she was unsure about changing approaches and examination type in the beginning, but realised that, if these changes were not made, Rita would have dropped out.

I think doing the chords for a while... like, where I kind of said 'look, is it the right thing to do? Should I keep them doing the classical pieces?' I think I might have lost Rita there then, if we kept at that I think, and not changed over to doing the chords... I think she was starting to go 'I've had enough of it' or whatever. It made a big difference... I don't know if that would have happened if they hadn't gone learning the chords and learning by ear for a while, 'cause I think it has made them listen to

things more as well. Like they pick up on piano in pieces, even a modern, like pop music, they'd hear the piano, you know, they'll say 'oh the piano in that' or 'the piano is doing the chords' or whatever, which they never would have even commented on...'

(Rita's parent – Cycle 3 – Post-intervention interview)

The development Rita's mother observed in Rita, and in her sister Harriet, is significant, and she attributes this musical development to the alternative pedagogical approaches implemented in their lessons. In addition to enhanced aural and analytical skills, Rita's mother alluded to enhanced critical listening skills and musical awareness as they began to identify chords in pop pieces they listened to; something they did not do prior to this study.

In her Cycle 3 post-intervention interview, Rita discussed the impact these approaches had on her musical understanding, and how she can now implement her new skills to learn music she never thought possible, both on piano and other instruments, as she gained the confidence to attempt to play something by ear. These musical achievements, both on piano and on tin whistle, are discussed by Rita in the following excerpt:

Rita: I think it has definitely changed my understanding. I was thinking recently, I never thought with piano like 'oh, here, I like *Let it Go* from Frozen, I think if I just look at the chords here, or if I listen to it, I'll be able to play it'. I always thought I can only learn what I've been given the notes for so I got my tin whistle recently and I was always really bad at tin whistle because I was only ever doing what they told me, like it was atrocious, it sounded like a cat was being strangled, but then I brought it up to my room and I was like 'you know what, I'll try and play Country Roads', and I played the whole song!

Aoife: Oh, go way!

Rita: It has changed my way of learning in every instrument, not just piano.

(Rita – Cycle 3 – Post-intervention interview)

Motivation and Values

While Rita obtained the skills to learn complete pieces in Cycle 3, as discussed in the previous section, she stated that she preferred only learning sections by ear. Rita said at the end of lesson six, in Cycle 3, that the HeLP approach helped her to figure out, and play, pop songs at home on piano

in this way, such as Billie Eilish's *Bad Guy* (2019), and that she enjoys 'messing around' trying to figure out songs like this. She explained that she uses it as an escape from her schoolwork, which she finds stressful, and that she is happier learning sections of lots of pieces instead of a complete piece. The type of playing she describes is like the musical equivalent of 'doodling' where people draw little images and abstract patterns.

Empirical studies have found that doodling can improve focus and help reduce stress, and that being in a state of tension resulted in a mixture of images being drawn, as opposed to being in a relaxed state where doodles were more elaborate drawings (Maclay, Guttman and Mayer-Gross, 1938). While there is no known study to date on this type of musical activity, this may correlate to Rita's enjoyment of learning small sections of many pieces, rather than complete pieces. As she described, she used this form of musical doodling as an escape from the stresses of school.

In her Cycle 3 post-intervention interview, Rita again mentioned using piano, in addition to tin whistle, which she picked up independently during this research, as a form of stress relief, but this time playing complete pieces she already knows:

When I'm stressed now like, as you said, I do go and play *I Giorni*, or I'll go and play the tin whistle, like what was I... yeah, *Country Roads*, immediately if I put down my phone for a second and something is stressing me out, I'll grab an instrument and just play it.

(Rita – Cycle 3 – Post-intervention interview)

I had mentioned to Rita months previously that I play contemporary classical pieces, like *I Giorni*, if I feel stressed; this is what she is referring to when she said, 'as you said', but Rita seemed to have a similar connection to this style of music. She explained what she enjoys about both the classical and popular music she plays and listens to:

With classical I really like how the music flows and you can really see how much thought someone has put into it because if you read about the piece or really listen to the piece, like the ones that do thunder and lightning and rain, you can really hear how much effort they've put into it and how much it just flows and how really beautiful it is. And with pop I like the lyrics and how much it means to the person, like I don't like pop songs that are just completely crazy and like, have no meaning to them. When there's a real proper message in the song I really like that.

(Rita – Cycle 3 – Post-intervention interview)

Rita values music that conveys imagery, emotion, and meaning; music she can have a deep connection with and that resonates with her own values and interests. In the same interview, she described contrasting experiences to this, which she had learning tin whistle and piano in previous years, and the negative impact learning pieces that did not align with her interests and values, in addition to the approach employed to learn such pieces, had on her self-confidence and motivation to learn.

All through Primary school I was so bad at tin whistle, I was like 'I'm never going to be able to do this' because we were doing like, we were doing, what was it, it was Jigs and that kind of stuff and I just... it was completely meaningless to me; I did not know the time signature, I did not know anything about the piece. I'd listen to it once and be like 'no, I don't like it!' Even with piano, when we do the Royal (Irish) Academy (of Music) exams I'd just be in such a mood all the time because I'd be like 'I got to do piano now, I don't like the piece, I don't like anything'. So, when you know you can do it by ear, and you know you can listen to the melody and everything like that it changes everything! For all of your instruments.

(Rita – Cycle 3 – Post-intervention interview)

It is not surprising that Rita did not place any value in learning piano or tin whistle at this time in her life, as she had no autonomy or connection with what or how she was learning. Fortunately, with the introduction and implementation of alternative learning approaches, and autonomy-supportive teaching, Rita came to see learning both piano and tin whistle as a worthwhile endeavour. As Deci & Ryan (2000; 2000b; 2000c; 2017) found, while competence-support and relatedness are important, autonomy-supportive teaching has the most significant impact on the internalisation of ideas and values, and this was seen in Rita, as the more autonomy she gained, the more value she placed on learning and playing piano. These positive and negative learning

experiences gave Rita a new perspective on the impact of learning piano, and the use of alternative learning approaches. So much so that in her Cycle 3 post-intervention interview, as quoted in the introduction of this case, Rita stated that she now intends to teach piano, and help others experience similar benefits from learning piano in various ways.

OIT Taxonomy of Motivation

This case study has demonstrated Rita's musical development over three cycles of action research and how her motivation to learn piano changed significantly over this time. It was evident from Rita's interview transcripts that, at the beginning, in Cycle 1, according to Ryan and Deci's (2017) Organismic Integration Theory (OIT), she had an external Perceived Locus of Causality (PLOC) that was contingent on examinations and feeling 'forced' to learn piano, in addition to ego-involvement as she liked to impress others. However, this began to shift in Cycle 2, and in Cycle 2 and 3 she transitioned from having an external PLOC to an internal PLOC. As can be seen in Figure 7.2, Rita became a more self-determined learner, and began to learn and play piano for herself; piano became part of her identity and a source of enjoyment and relaxation which she valued.

Intrinsic motivation is considered the greatest form of motivation for learning, as it has been found to increase engagement, problem-solving skills, and creativity. Furthermore, intrinsically motivated people are more likely to seek out new challenges and test their limits (Deci and Ryan, 2000b; Ryan and Deci, 2017). We can see in earlier discussions that, in Cycle 2 and 3, Rita did become more engaged, and consistently challenged herself to figure out and learn new pieces on piano by ear, and sometimes sourced chord charts to learn more complete pieces.

Figure 7.2. OIT taxonomy of motivation - Rita's comments on learning

Behaviour	Non-self-determined				Self-determined	
Type of Motivation	Amotivation	Extrinsic Motivation				Intrinsic Motivation
Type of Regulation	Non-regulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
Associated processes or characteristics	No value Non-relevant Non-intentional No sense of control Lack of competence	Saliency of external rewards or punishments Compliance	Ego-involvement Focus on approval from self or others	Personal importance Conscious valuing of activity Self-endorsed goals	Synthesis of goals/ identifications Congruence Self-aware	Interest/Enjoyment Inherent satisfaction
Quotes from Rita		'Well, if I didn't want to anyway my mam would force me' (C1) 'When we do the Royal (Irish) Academy (of Music) exams I'd just be in such a mood all the time because I'd be like 'I got to do piano now, I don't like the piece, I don't like anything' (C3 referring to C1 and earlier)	'...everybody gets really impressed' (C1) 'If I got to a tricky bit and I kept on trying to do it and then I kept not being able to do it I'd probably give up' (C1)	'(playing piano is) also very helpful in school, because like with the thing I told you on the test he wrote down stuff that we didn't learn (but she knew the answers)' (C2) 'I've been playing La Vie en Rose because I'm going to need it for French, because we're doing a practical thing in French' (C3) 'I actually went on my phone and listened to it a couple of times and I was like 'this is actually really beautiful; I hope I can play this'' (C3)	'I was motivated to do them by thinking 'oh I will play these again, I'll do them in my Junior Cert, and I like the piece' (C3) 'I'd like to teach people piano, definitely, and I think it's really handy for auditions because you're not allowed to use the backing track sometimes' (C3)	'I enjoy being able... to play music for myself.' (C2) 'When I'm stressed now like, as you said, I do go and play I Giorni' (C3) 'I know how much music has impacted me and my life, and really seeing how, when you know you can learn it by ear and you can learn it differently, how much that helps you in your life besides music, and then how therapeutic music is, like when I said when I was stressed, I'll go and play it' (C3)
Perceived Locus of Causality (PLOC)	Impersonal	External	Somewhat External	Somewhat Internal	Internal	Internal

According to Cognitive Evaluation Theory (CET) our environment greatly effects our motivation, in particular events that impact our autonomy and competence; either stimulating and enhancing our motivation or undermining and diminishing it (Deci and Ryan, 2000a; Deci, Koestner and Ryan, 2000; Ryan and Deci, 2017). Chirkov and Ryan (2001) and Ryan and Deci (2017) found that, while both parents and teachers influence a student's motivation for learning, autonomy-supportive teachers play a greater role in students developing intrinsic, or well internalised extrinsic motivation. This was illustrated in this case study with the pedagogical changes made by me, her teacher. Initially Rita's learning environment undoubtedly undermined her motivation, but with the introduction of new alternative approaches through autonomy- and competence-supportive teaching, in addition to a change of examination type, Rita's new learning environment had a profound and positive effect on her motivation. She became an internally motivated learner, with the autonomy and musical skills and knowledge required to partake in lifelong independent learning.

Concluding Observations

Rita's enjoyment and connection with both new alternative pedagogical approaches was evident and they played a critical role in enhancing her independence, musical skills and knowledge, and value placed on learning piano. In Rita's case the implementation of new approaches was not enough, however; she needed to gain more autonomy over her learning than formal examinations could provide her, and as discussed, she had such a negative experience with examinations from the beginning, finding them anxiety and stress inducing, that a change to non-formal popular music examinations was essential in Cycle 2. This ensured Rita got the certificate and validation she needed at the end of each year, but also had complete autonomy over her learning; learning the styles of music she valued and enjoyed. For instance, learning all *Hamilton* music in Cycle 2, as she was fanatical about this musical all year, or as her mother described it, her '*Hamilton* obsession'.

The impact of these changes on Rita were encapsulated in our final interview by her closing remarks:

I want to say thank you for all of this, like, genuinely, because I would have quit piano with the whole Royal [Irish] Academy [of Music] thing. I was saying to my mother 'I'm not doing this in 3rd year, it is too much stress, I'm quitting in 2nd year, I'm never doing piano again, I'll never even look at it' and then when you said about the pop exams it changed the game, so really, thank you!

(Rita – Cycle 3 – Post-intervention interview)

As Rita said, if things did not change, she would have dropped out. Although she put this down to the change of exam type in the above quote, it is evident from her previous quotes that the alternative pedagogical approaches employed during this research and the increasing autonomy Rita gained over these three years played a significant role in Rita's changing perspective. This highlights the importance of reassessing how piano is taught and ensuring we employ approaches that better meet our students' needs. Not only did these changes prevent Rita from dropping out, but she became a highly motivated and independent learner who now enjoys learning and playing piano.

CHAPTER 8 - DEVELOPING NEW WAYS OF LEARNING

Introduction

This chapter focuses on the student voice and provides the participants' accounts of their learning experiences since they began learning piano, and of the pedagogical approaches implemented over three cycles of action research. In this chapter, the data across the six student cases are compared and synthesized to demonstrate the extent to which alternative formal and non-formal pedagogical approaches impacted students' musical knowledge, skills, engagement, and motivation to learn.

To begin, I give a summary of the participants' stages of musical learning and development, the role of theory in the analysis of student interviews, and an overview of the alternative formal and non-formal pedagogical approaches. Next, I examine the key themes that emerged in the interview and observational data across all participants, namely, the impact of alternative pedagogical approaches on musical skills and knowledge; motivation; engagement; and independence. I then consider non-musical factors which emerged as secondary themes from the data. Finally, I conclude by providing a summary of these findings.

Participant Summary

Six students participated in this longitudinal study over three years, ranging between eight and seventeen years old, and with varied pianistic proficiency, from late beginner to advanced. The participants had varied musical backgrounds and support at home, with the parents of some students having previously studied piano as a child, although no longer, or rarely, play, and others whose parents never studied music or played an instrument of any kind. Three students began their piano lessons with me, while the other three had different piano teachers for several years before transferring to me at least one year prior to Cycle 1. As seen in Table 8.1, all six participated in graded examinations each year, but some students alternated between formal RIAM examinations, where they had to choose three out of six prescribed pieces (repertoire lists increased for grade 6-8),

and non-formal popular music assessments, which allowed students autonomy over their choice of repertoire, and encouraged the performance of popular music, in addition to other styles, including contemporary classical, jazz, and Irish traditional music. Students were given complete autonomy over what form of examination they wished to take at the end of each year, in consultation with their parents.

Table 8.1. Participant Overview

	Harriet	Liz	Rita	David	Ann	Feargal
School class at start	3rd class, Primary	5th class, Primary	6th class, Primary	6th class, Primary	1st year, Secondary	2nd year, Secondary
Age at start	8	10	11	12	13	14
Age at end	11	12	14	15	15	16
Cycle 1 (2018) Grade/level	RIAM Primary	RIAM Grade 2	RIAM Grade 2	RIAM Grade 1	RIAM Grade 5	Pop Step 2
Cycle 2 (2019) Grade/level	Pop Step 1	Pop Step 2	Pop Step 2	RIAM Grade 2	RIAM Grade 6	RIAM Grade 5
Cycle 3 (2020) Grade/level	Pop Step 2	RIAM Grade 4	Pop Step 3	Pop Step 3	RIAM Grade 7	RIAM Grade 6
Years of tuition (end)	5 years	6 years	6 years	6 years	10 years	9 years
Years taught by me (end)	5 years	4 years	6 years	4 years	8 years	9 years

The Role of Theory in the Analysis of Student Interviews

This research is primarily viewed through the theoretical lens of Self-Determination Theory (SDT), and Bruner’s Scaffolding of Learning and Discovery Learning theories. SDT centres around the idea that people have three basic psychological needs; the need for autonomy, competence, and relatedness (Ryan and Deci, 2017). According to SDT, when a person experiences autonomy-support, competence-support, and relatedness, it fosters motivated and engaged actions, while conditions that frustrate these needs result in degradation of functioning and a lack of motivation and engagement (Deci and Ryan, 2000b; 2000c; 2020; Ryan and Deci, 2017). Bruner’s Scaffolding of Learning and Discovery Learning theories were seen as a potential way of supporting these

needs, as both aim to create autonomous, critical thinkers through developing skills and knowledge, or in other words, competence, that is required to become independent learners.

As the action research project progressed, I strived to support the student participants' basic psychological needs through my teaching practices and the pedagogical approaches implemented, particularly using scaffolded activities, and facilitating discovery learning. The role of the teacher and their teaching strategies, and the impact of the supporting or thwarting of these three basic psychological needs on student musical development, motivation, engagement, and independence, were apparent throughout all the participant interviews. Therefore, the concepts of autonomy, competence, and relatedness, and discovery learning and scaffolding, are interwoven throughout the findings in this chapter.

Overview of Alternative Pedagogical Approaches

In Cycle 1 the participants were introduced to two alternative pedagogical approaches, one formal and one non-formal. The formal approach was based on Harris's (2015) Simultaneous Learning (SL) approach which has three main principles; 1) 'teach proactively'; 2) 'everything connects'; and 3) 'teach through the piece's ingredients'. As this is an approach used to guide the teaching of a complete lesson, including sight-reading, scales, improvisation, and composition, etc., which is beyond the remit of this study, the relevant elements were extracted from the SL approach for the purpose of this research and an analytical approach, as it is referred to throughout this thesis, was adapted and developed based on the three SL principles. This approach focused on learning repertoire, and included the student musically analysing the piece by looking at the notation, identifying the key of the piece, harmonic structure, form, and rhythmic patterns, and making musical connections between the piece's 'ingredients'. Over the course of the research this also included an aural awareness of these elements as the students' aural skills developed.

The non-formal approach implemented was Green's (2014) Hear, Listen, Play! (HeLP) strategy, which involved a simple step-by-step approach; 1) listening to a full piece of music; and 2)

playing an individual riff from the same piece, on repeat, while the student attempts to find the notes. This approach is then repeated with subsequent riffs until the complete piece is learned. The students did not know that this approach is called the 'HeLP' approach – in their interviews they refer to it as 'playing by ear' or 'learning by ear'. Therefore, these are the terms that are predominantly used throughout this thesis.

As is typical of action research, the implementation of these approaches evolved over each cycle, as discussed in detail in Chapter Four, but the essence and aims of the approaches remained; creating musicians with the musical knowledge, skills, and motivation to partake in lifelong, independent learning. Therefore, this chapter examines the participants' perspectives and experiences of each approach, and how these changed or developed overtime.

The Impact of Alternative Pedagogical Approaches on Musical Skills & Knowledge

Aural Skills

It was found that all six students' aural skills developed significantly throughout the three cycles of action research, particularly due to the HeLP approach. In Cycle 1 some students found learning by ear difficult in the beginning, like Ann did, which was discussed in her case study in Chapter Five, and it took several weeks to adapt to using such a different pedagogical approach to learning. Over each cycle of action research, however, all participants became notably more comfortable with the approach as their aural skills improved and, with it, their confidence and musical competence. This was illustrated in each of the three case studies presented in Chapters Five, Six and Seven.

Key developments observed by the participants from using this approach were in their aural, memory and performance skills. Furthermore, it impacted their overall aural awareness as they began to observe patterns and harmonies in music they listened to in their free time, in addition to their critical listening skills. This section provides excerpts from the observations students made on these developments.

'I Hear It in My Head' – The Impact of Learning by Ear on Memory and Performance Skills

Many of the participants noted how they heard the music in their head as they played after learning it by ear – this did not happen using the formal approaches. For example, Feargal, David and Liz made the following observations:

I can always hear the audio that I heard from listening to it by ear in my head when I'm playing it rather than reading off the sheet of music. That kind of makes it click and makes it easier.

(Feargal – Cycle 3 – Post-intervention interview)

I wouldn't need to use the sheet music of a piece that I've learnt by ear, but I probably would need to use it a bit on a piece that I've learnt from the sheet music. I'd have to look at the sheet. If I learnt it by ear I'd just know how to play it... You kind of remember it more if you learn to play it when you hear it. I think I kind of remembered how to play it more after that. Like I wouldn't forget how to play it either.

(David – Cycle 3 – Post-intervention interview)

It comes to me quicker to be playing it after learning it by ear, like, I don't know... I have it in my head more, whereas if I'm after... If I learn it by reading the notes, I always stick to reading the notes then... When I'm playing it by ear... I'm mostly thinking about the sound of it because, I don't know, yeah, I think it's the sound more than where fingers are and stuff.

(Liz – Cycle 3 – Post-intervention interview)

Having a deep aural knowledge of a piece aided their performance and appeared to prevent memory lapses as they continually made an aural connection between what they heard in their head and what they were playing. Furthermore, Feargal specifically spoke about how learning by ear made him more comfortable performing *Prelude in C minor*, in Cycle 2, and described feeling almost in a state of 'flow' when playing this piece (Csikszentmihalyi, 2002),

Aoife: If you were to play a concert now which piece would you play?

Feargal: *Prelude in C minor*.

Aoife: Okay, why that one?

Feargal: Am, I felt... I'm most comfortable with that one, am, I'd say doing it by ear was a lot easier

Aoife: Okay, so it made you more comfortable?

Feargal: Yeah!

Aoife: Why do you think that is?

Feargal: Am... I get into the piece a lot more than I would with the other ones, and it makes it better to play for me. I find it easier to play it that way.
(Feargal – Cycle 2 – Post-intervention interview)

Enhanced Critical Listening Skills and Aural Awareness

As discussed in detail in Chapter Five, Ann learned sections of a difficult Grade 7 piece, *Gigue*, independently by ear, without the use of sectional recordings as in the HeLP approach. In addition to the independence Ann developed and exhibited by learning in this way, she spoke about how listening to recordings and using this approach resulted in her critically listening to the finer details in pieces such as dynamic variation and interpretation, something she admitted to not doing before,

I definitely see myself putting in more dynamics in places where I normally wouldn't, like, before I would just play a piece like all sounding the exact same but now, hearing it, it makes it a lot easier to know what way a person, or professional, would play it so, yeah... you just know what it should sound like when you're completely after perfecting it and like it motivates you to make it sound like that sooner rather than later.

(Ann – Cycle 3 – Post-intervention interview)

As we can see in this excerpt, Ann observed how learning by ear, and having an aural knowledge of the piece, motivated her to include this detail from the start of the learning process. This is an important musical development; she became conscious of playing musically from the initial stages of learning, and no longer thought of these important musical features as something to add in at the end.

Furthermore, David summarised the development of his aural skills over this time and how he is now able to hear certain chords and notes when listening to new pieces of music,

Now I can just listen to it and I'd hear it and I'd be like 'yeah that sounds like A flat', a certain chord or something and you'd kind of know what chord to play then.

(David – Cycle 3 – Post-intervention interview)

These enhanced critical listening skills and aural awareness, in addition to the enhanced independence it gave some of the students, like Ann, was evident in many of the other participants comments. All participants, in addition to some of their parents, like Rita and Harriet's mother cited

in Chapter Seven, noted how they began to make musical connections when listening to a piece of music using the musical knowledge they built up through musical analysis. This is discussed in more detail in the ‘making musical connections – thinking harmonically’ section below.

Reading Skills

Challenges with Reading Notation the ‘Traditional’ Way

Reading notation was considered challenging by the participants, but this was not considered an engaging or competence-building type of challenge, as discussed in the literature (Csikszentmihalyi, 2002; Ryan and Deci, 2017; Shernoff and Csikszentmihalyi, 2009; Valenzuela, Codina and Pestana, 2018), but an unengaging and demotivating type of challenge that students often found ‘boring’ or ‘mundane’ (Comeau *et al.*, 2019). According to Harriet, this was due to the process of identifying notes using ‘rhymes’ such as ‘Every Good Boy Deserves Food’, with each word representing the pitch of the note on each line of the treble clef, for example.

Identifying notes in this way was often found to be monotonous, and sometimes frustrating and time-consuming, as Harriet described,

Sometimes it would just annoy me trying to figure it out because I would just constantly, like, you know with the rhymes, trying to go up the lines, I could never just like look at the notes and know what it was...

(Harriet – Cycle 3 – Post-intervention interview)

This method of identifying notes was clearly not efficient enough for Harriet, and, as she found this seemingly easy task sometimes frustrating and unengaging, it is likely to have undermined her feelings of competence (Evans, 2015). Although this is one of the most popular, traditional methods of identifying notes among teachers, both in instrumental and classroom music lessons, it can become challenging and laborious for students. Although there are other methods of note identification and ways of helping students to get to the stage where they can ‘...just look at the notes and know what it was’, Harriet’s comments highlight a need for teachers to reflect on and question all aspects of their teaching practice to help address issues, like this, and find better

solutions and pedagogical approaches that enhance their students' learning experiences and help build the musical skills they need through engaging activities.

Further difficulties noted by participants was the boredom they felt when learning through notation and how they did not find this approach engaging. This aligned with the findings of much of the research on student dropout as one of the primary reasons given was feelings of boredom in the lesson (Evans, McPherson and Davidson, 2013; Evans, 2015; Gerelus *et al.*, 2020).

The Effect of Listening on Students' Reading Skills

A significant and unanticipated finding was the impact learning by ear and, moreover, listening, had on students' reading skills and their perceived confidence and security when reading a piece of music for the first time. As discussed above, sight reading was found to be an often boring and tedious activity for the participants, and they were not motivated to independently learn a piece in this way prior to this study, except for David who sometimes continued to learn an additional bar or two of the pieces we were learning. However, being aurally familiar with a piece prior to reading it, made a significant impact on the student's learning experience and how they perceived this approach to learning. For example, Ann stated,

I suppose I would read more because, I don't know, like I feel more confident reading sheet music now because if you listen to it before then you just know like, you know what I mean?

(Ann – Cycle 3 – Post-intervention interview)

Having an aural familiarity with the piece gave Ann more confidence to read the notation. Harriet perceptively observed the problem with learning a piece she did not know in Cycle 2, after realising the impact gaining familiarity with the pieces had on her learning experience, particularly in the initial learning stage,

It was kind of annoying playing them [classical pieces] because I had no idea what they were, because I didn't know those kind of songs. That's the problem.

(Harriet – Cycle 2 – Post-intervention interview)

When learning examination repertoire solely through notation it was meaningless to Harriet as she was trying to gain an aural understanding of the piece while simultaneously, and often tediously, as she described herself, identifying each individual pitch and rhythm. The constant uncertainty and fear of playing or learning something wrong due to unfamiliarity with the piece was found to cause a negative effect on these participants and their confidence in their reading abilities; taking weeks to eventually gain that aural validation and understanding they justifiably needed. As Ann described,

I definitely feel more confident in myself with playing when I've heard it already rather than just looking at it straight because I just feel like I'm not playing it the right way or something, you know? But it's a lot easier then when you've already heard it.

(Ann – Cycle 3 – Post-intervention interview)

This observation was echoed by the other participants, for example, David, Liz, and Rita said,

When I used to play piano, I used to look at the sheet music most of the time and then it would take me longer to learn it but like I can just listen to it and I can hear it, now it's easier to just play it cause I know what it sounds like and I know the notes and stuff.

(David – Cycle 3 – Post-intervention interview)

If you do know the sound of the piece you'll be able to play it, like, no bother really, because you would just be able to read it, and then once you've it learnt you'd be fine.

(Liz – Cycle 3 – Post-intervention interview)

When you know you can do it by ear, and you know you can listen to the melody and everything like that it changes everything!

(Rita – Cycle 3 – Post-intervention interview)

Listening to a piece prior to learning it, regardless of the approach implemented, undoubtedly enhanced all participants learning experience and helped them make musical and aural connections with the music from the first day of learning; they made connections between what they heard and the patterns they saw in the music. This likely impacted their perception of notation and is one of the reasons it increased in popularity and importance for all participants, particularly in Cycle 3 when listening became an integral part of all approaches.

While learning by ear remained the favourite pedagogical approach throughout, the participants continually saw the importance of reading notation, with some participants finding it more important as the study progressed. In their final interviews all participants wanted to continue working on their sight-reading skills and saw it as an important skill to have when partaking in independent, lifelong learning.

Making Musical Connections – Thinking Harmonically

The participants noted that having a harmonic understanding was useful for learning other pieces. As quoted previously, David stated, ‘if you know all the chords and you know all the notes then you can probably learn anything’ (David – Cycle 3 – Post-intervention interview), and Harriet had a similar belief,

Harriet: I definitely didn’t know how to play chords before, like I probably did it once or twice in a song, but I wouldn’t have known it was even chords.

Aoife: So now do you feel you know how to play chords now?

Harriet: Yeah, and I can play loads more songs... you can hear it in a lot of songs, chords, if they have piano.

(Harriet – Cycle 2 – Post-intervention interview)

Harriet began to make connections between what she was learning through musical analysis, and what she heard on the radio or on streaming services. Her mother also observed this,

If she hears a piece of music on the radio being played on a piano she’s showing more interest in that now which she would never have before, and she’d kind of be saying ‘oh, you know that sounds like whatever’ or ‘the chords of that’ you know, if I had it on in the car, like I do have Lyric on in the car, and if the piano comes on Harriet would be like ‘oh yeah, that sounds really hard now but I think I know how they’re doing it’ [laugh] you know that kind of thing?

(Harriet’s parent – Cycle 3 – Post-intervention interview)

Like David and Harriet, Ann discussed her plans to use this analytical approach to independently learn other repertoire in the future, and how she believed, by using this approach, ‘it would be easier to make sense of a piece’ (Ann – Cycle 2 – Post-intervention interview). This was after her positive experience implementing the analytical approach when learning *Fantasy No.1 in D* by Telemann

(See Ann's cases study in Chapter Five for more on this). In her final interview, and throughout Cycle 3, Ann demonstrated the benefit of this approach for independently learning repertoire by learning several complete pieces in this way, in addition to employing other complementary approaches (See Chapter Five). She then spoke about how her approach to learning new repertoire developed,

I tend to go away and look at the patterns more than normal now. Like, you know, before you'd just go away and play it but like now, I'd kind of be analysing it more like with the patterns and what's happening, like if there's octave jumps or whatever.

(Ann – Cycle 3 – Post-intervention interview)

In contrast to the other five participants, it took Liz some time to connect with the analytical approach. She found it challenging to change the way she thought as she read music, and she did not appear comfortable with change. However, her positivity increased towards it over time and by Cycle 3 she saw the value of the approach, explaining that 'you think about it more in a kind of, you can make a connection, like, this one to this one' and how, when you are playing a piece after learning it in this way, you think of each chord 'it's almost, I don't know, like a pattern almost. You know what it looks like almost' (Liz – Cycle 3 – Post-intervention interview); this aided her learning process and memory. This new perspective on learning through musical analysis was also exhibited in how she learned independently as she employed this approach in certain learning situations,

...for the bigger chords then, with like three notes, I do it by reading because it would be harder to be able to hear that, if you've three different notes.

(Liz – Cycle 3 – Post-intervention interview)

The connection Liz made with thinking harmonically/chords and patterns was echoed by the other participants. For example, Feargal described his experience of learning and thinking harmonically,

I think because the chords were all one, you press them together, I think it's just easier to do it because reading wasn't really my strong suit in my pieces... when you're playing the chords, they're just one kind of thing, you've to press them once. I always thought chords were kind of easier.

(Feargal – Cycle 3 – Post-intervention interview)

Developing a knowledge and understanding of harmony, and the critical skills to analyse a piece of music, both visually and aurally, benefitted these students and significantly enhanced their learning experience, and their feelings of competence, as they gained a deeper intellectual knowledge of their pieces. This, in turn, enhanced their confidence and performance skills; empowering them to play from memory more easily, start at any point in the music, gain an understanding of the harmonic structure of their pieces, and to think harmonically, i.e., think of two-three notes as one unit, as Feargal and Liz noted, and feel more secure when performing overall. Furthermore, it helped students make connections with other pieces and songs they hear in everyday life and equipped them with the skills they felt necessary for independent learning; an enhanced understanding of chords and reading skills.

Ann discussed why she enjoyed the analytical approach the most in Cycle 2 and felt that, while this approach can take longer than reading or learning by ear, the intellectual knowledge and understanding you gain of the harmonic structure of the piece leads to a stronger and deeper memory, ‘it took longer but like once you get it then you wouldn’t forget them’ (Ann – Cycle 2 – Post-intervention interview). Musical analysis was more challenging than reading notation, particularly in the initial learning stages, but it was evidently a more engaging form of challenge for these students, that resulted in a strong memory of the piece. Moreover, the process of analysis helped develop students’ critical-thinking and problem-solving skills which are found to be essential for independent learning (Bruner, 1961).

Developing Musical Competence

SDT associates competence with personal growth and the development of knowledge, skills, and achievements, in addition to feeling effective in one’s environment (Ryan and Deci, 2017). Studies have found that competence-supportive teaching strategies include the provision of a rationale for each activity (Evans, 2015), and informational and constructive feedback (Deci, Koestner and Ryan, 2001; Ryan and Deci, 2017; Ryan, Mims and Koestner, 1983), in addition to structured and

scaffolded activities (Evans, 2015). Structure and scaffolding play important roles in developing students' feelings of competence as they help ensure students partake in optimally challenging tasks. In the context of this study this was often achieved through discovery learning, which enhances critical thinking skills, musical skills, and knowledge, and, as the scaffolding is gradually removed, allows the students more opportunities to become independent learners. This section looks at the impact of competence-support on the students' perceived musical skills and independence.

The Importance of Competence-Supportive Teaching Practices

Both the aural and analytical approaches, while very different, provide teachers with opportunities to create more optimally challenging and, therefore, competence-building and intrinsically rewarding activities for students. It was found in this study, and illustrated in detail in David's case study, that these approaches were further enhanced by taking a scaffolded, discovery learning approach as these allowed students to make musical connections for themselves, while guided by the teacher. These approaches were found to enhance students' sense of achievement and competence and encouraged them to take ownership of their learning; therefore, becoming more autonomous and independent learners. In addition, by including both formal and non-formal approaches, students and teachers ensure a balanced and well-rounded music education is achieved by simultaneously developing aural, reading, and analytical skills.

As discussed earlier, both formal and non-formal approaches, particularly when combined, resulted in an increase in confidence, and musical skills and knowledge in all participants. Furthermore, the emphasis on listening and aural skills resulted in enhanced reading skills and a more positive disposition towards reading, as illustrated by Ann,

I suppose I would read more because, I don't know, like I feel more confident reading sheet music now because if you listen to it before then you just know like, you know what I mean?

(Ann – Cycle 3 – Post-intervention interview)

Overall, the impact of the competence-supportive teaching that was provided in this study through the implementation of alternative approaches was evident in the participant interviews, such as Rita, who described how she now has the skills and competence to learn pieces independently by ear,

When I'm hearing a song, just a different song, like something from *Dear Evan Hansen*, I can pick it up, and I wasn't able to do that when we were learning from sheets, so it's so much better now cause there will be songs and I'll be like 'oh I know, I think I know'.

(Rita – Cycle 2 – Post-intervention interview)

Through encouraging and facilitating students to discover musical connections for themselves, using scaffolded and optimally challenging activities, and the implementation of alternative approaches, these participants gained musical skills and confidence in their abilities to learn independently. In addition, it is evident in their interviews that they now feel like effective learners – a distinct indication of personal growth and enhanced competence (Ryan and Deci, 2017).

Becoming a well-rounded musician

Interestingly, although learning by ear was the indisputable favourite approach throughout each cycle of action research, formal approaches remained in favour with all participants, with all wishing to continue using a combination of formal and non-formal approaches after each cycle. These findings are summarised in Table 8.2 and the reasons for these preferences are discussed in detail throughout this section.

As seen in Table 8.2, the participants expressed a preference for continuing to use at least two different learning approaches after each cycle, one formal and one non-formal, with the exception of Liz, in Cycle 1, who wanted to continue employing the traditional approach of learning through notation, despite learning by ear being her favourite approach. However, after Cycle 1, Liz's opinion changed and, like the others, wanted to learn both formally and non-formally.

Table 8.2. Overview of Student Learning Preferences

Post-intervention Interview	Ann		David		Feargal	
	<i>Favourite approach</i>	<i>Preference for next year</i>	<i>Favourite approach</i>	<i>Preference for next year</i>	<i>Favourite approach</i>	<i>Preference for next year</i>
Cycle 1	Ear	Ear & analysis	Ear	Ear & analysis	Ear	Ear, analysis & notation
Cycle 2	Analysis	Ear & analysis	All	Ear, analysis & notation	Ear	Ear, analysis & notation
Cycle 3	Ear	Ear, analysis & notation	Ear	Ear, analysis & notation	Ear	Ear, analysis & notation
	Harriet		Liz		Rita	
Cycle 1	Analysis	Ear, analysis & notation	Ear	Notation	Ear	Ear, analysis & notation
Cycle 2	Ear	Ear, analysis & notation	Ear	Ear & notation	Ear	Ear, analysis & notation
Cycle 3	Ear	Ear, analysis & notation	Ear	Ear, analysis & notation	Analysis	Ear, analysis & notation

In Cycle 3, the participants chose to implement a combination of approaches of their own volition when learning new repertoire, both independently and with my guidance, and wished to continue in this way for the future as they equally enjoyed the variety this provided and saw the value in using such a combination for their musical development. According to the six participants, using a combination of formal and non-formal approaches was optimum for becoming a well-rounded musician, like Harriet explained,

You kind of have to be able to do both I'd say because someone could want you to do a song at a wedding and just give you the notes and then you've to learn it, or they could just tell you the song and then expect you to be able to learn it.

(Harriet – Cycle 2 – Post-intervention interview)

Harriet provided two real-world examples here of the importance of formal and non-formal skills and demonstrated that she has given her potential music career and the skills she requires some meaningful consideration.

Harriet's sister Rita was more concerned about creating a more engaging and positive learning experience and saw the value in using a combination of approaches for this purpose, as she discussed, when asked what approaches she wished to employ in the future,

Rita: I think all of them to a certain extent, not like, cause I could learn a piece completely by chords, I could learn a piece completely by ear, but I think if you smush bits of them all together that would be... like... words are gone out of my head today, I wasn't speaking all day so I'm just...

Aoife: [laugh] as in that would be the best kind of way?

Rita: Yeah.

Aoife: Okay. Do you think having all of those skills will increase your chances of playing piano when you're older?

Rita: Yeah, because I would just get frustrated on the, when I was just learning it by paper, I'd get frustrated like reading it and stuff, and I'd get bored, so now I think when I have different ways to learn it it's more interesting.

(Rita – Cycle 3 – Post-intervention interview)

As illustrated in the previous section on making musical connections, the participants remarked on how learning by ear or through the analytical approach resulted in a deeper learning experience and made learning more interesting. They felt being able to hear it in their head and think of chords as one unit as opposed to individual notes as they played helped their performance and memory. In addition, analysis allowed students to gain more meaning and understanding of the music, whereas just reading notation, in the way described above, may not, as it does not provide the opportunity for as deep an intellectual understanding of the piece. Overall using a combination of these complementary approaches enhanced their learning experiences and perceived musical competence, making them feel like more well-rounded musicians.

The Impact of Alternative Pedagogical Approaches on Motivation

The Important Role of Autonomy in Creating Motivated Learners

SDT defines autonomy as being volitional over one's own actions; of feeling in control of one's choices, while freely seeking and accepting guidance from others when necessary (Ryan and Deci, 2017). Studies have shown that autonomy-supportive teachers have the greatest influence over students becoming motivated and engaged learners (Chirkov and Ryan, 2001; Ryan and Deci, 2017), and this was reflected in the student interviews.

Gaining autonomy over their learning was essential for the participants, particularly Ann, Feargal, Liz and Rita. In line with the findings of SDT, these participants felt that having autonomy was more motivating and helps students feel more comfortable and in control of their learning, knowing they could decide what approach best suited them, and for each individual piece. Liz felt strongly about having autonomy over learning approaches and repertoire choices in Cycle 3, and discussed how having this choice, and not being controlled by the teacher, results in students becoming more engaged and motivated to learn,

It makes [students] more interested because it's them deciding how they want to do it instead of how the teacher wants them to do it, so you probably are more interested in it then because it's what you want to do.

(Liz – Cycle 3 – Post-intervention interview)

Liz then advocated for piano teachers to provide this choice to their students to make learning more interesting for them,

Let the student pick what they want to do instead of telling them all the time what they have to do... I liked having a choice of what you can do instead of just doing the one thing all the time; it makes it more interesting.

(Liz – Cycle 3 – Post-intervention interview)

These strong views are a particularly interesting development for Liz who initially did not feel comfortable with changing the way she learned in Cycles 1 and 2. In the beginning Liz did not show any desire to partake in independent learning and was not particularly motivated to learn, but as her autonomy increased, and her knowledge of various approaches to learning developed, there was a significant impact on her motivation and engagement, as illustrated in the excerpts above. Furthermore, Liz began to independently learn numerous pieces throughout the final cycle of action research, further demonstrating the importance of autonomy-supportive teaching practices.

As discussed in Rita's case study in Chapter Seven, gaining autonomy over her learning transformed her experience and she transitioned from almost dropping out, to placing great importance on learning and playing piano. She explained how having autonomy over what and how she learned better met her needs,

What I like about the lessons is that we can choose our own songs and we choose a way to learn it because everyone learns differently and I feel like if you get to choose yourself what way you're learning it, because you're the one that knows what's best for you.

(Rita – Cycle 3 – Post-intervention interview)

In addition, Ann spoke about how giving students a choice of learning approaches was more motivating,

I definitely think it's a very good idea because it kind of puts them in control of their learning so it would motivate them more to work harder at the way they know that they're better at, you know?

(Ann – Cycle 3 – Post-intervention interview)

Ann also commented on how having a choice made her take control of her learning and that 'it was my responsibility to learn it rather than waiting for somebody else to push me to do it' (Ann – Cycle 3 – Post-intervention interview). The autonomy-support provided in these participants' lessons contributed to them becoming more motivated, autonomous, and eventually more independent. It encouraged them, and gave them permission, to take control of their learning; they were no longer reliant on the teacher, or parents, telling them what to do and when to practice, etc.

Moving Along the OIT Continuum of Motivation

Rita's case study, in Chapter Seven, demonstrated how external factors such as parental pressure and examinations had a detrimental effect on her motivation to learn and almost caused her to drop-out. Moreover, it illustrated the potential impact of the pedagogical approaches implemented in this research, and the inclusion of autonomy-supportive teaching practices, on moving students with low motivation towards placing increased value on learning to play piano and eventually becoming intrinsically motivated to learn, as was illustrated in Figure 7.2. OIT taxonomy of motivation - Rita's comments on learning (See Chapter Seven, p. 185).

In his Cycle 3 post-intervention interview, Feargal reflected on a similar transformation to Rita. Although he did not mention dropping out, he discussed why he was learning piano and how,

over the course of this research, he developed from being externally motivated, and often stressed as a result of external pressures, to becoming more autonomous and internally motivated to learn.

Feargal: I just thought I wanted to be really good because I wanted to impress everyone, and I wasn't really playing for myself anymore.

Aoife: Okay, so was it you putting the pressure on yourself or was it someone else?

Feargal: Yeah, it was myself I'd say a lot of the time.

Aoife: And how do you feel now about it?

Feargal: Am... I'll say I'm very happy to play piano for myself and I like playing with you as well, you're a really good teacher.

(Feargal – Cycle 3 – Post-intervention interview).

We can see from this excerpt that, as Feargal gained autonomy over his learning and began to play piano for himself, instead of others, he became fundamentally happier in himself and began to enjoy playing piano more as he no longer felt controlled by what others expect of him.

It is evident from the excerpts above that autonomy-supportive teaching played a significant role in the students' motivation and engagement, in addition to their developing independence, and gave them a sense of empowerment over their learning. Children and teenagers are predisposed to being told what and how to learn in educational settings (Ryan and Deci, 2017), and this was likely the first time these participants were given control over their learning. While the alternative pedagogical approaches implemented played an important role in the success of this research, there is no doubt that the autonomy-supportive teaching provided had an equal, if not more significant impact on the participants' learning experience and helped enhance their motivation, moving away from externally regulated motivators towards being intrinsically motivated to learn.

The Impact of Alternative Pedagogical Approaches on Engagement

In addition to teachers giving their students autonomy over their own learning, research has proven that it is also essential to ensure that learning is scaffolded, structured, engaging and optimally challenging (Bruner, 1966; Jang, Reeve and Deci, 2010; Ryan and Deci, 2017; Swanwick and Tillman, 1986). SDT claims that when structure is provided in an autonomy-supportive way, it can further enhance student development and create an optimal learning environment which enhances

and maintains engagement, and gives students a sense of control over their learning outcomes (Jang, Reeve and Deci, 2010; Ryan and Deci, 2017; 2020). The importance of creating an optimal learning environment for student's engagement was evident in David's case study in Chapter Six. This section examines how optimal challenges impacted the other participants in this study, in addition to other factors which effected their engagement such as musical analysis and enjoyment. Before this I will discuss the impact traditional, formal approaches had on student engagement from the students' perspectives prior to this research.

The Impact of Traditional Formal Approaches on Student Engagement

Emerging from the data was a clear mismatch between the importance students placed on learning through notation and the lack of student enjoyment and engagement in practice. Reading notation is arguably a primary focus in one-to-one piano lessons, and the primary approach used in the teaching and learning of repertoire in the Western world, which is heavily influenced, and often dominated, by Western classical music traditions (Evans, 2015; Evans, McPherson and Davidson, 2013; Green, 2008).

A significant finding from the interview data was that none of the participants expressed much enjoyment of reading notation at any stage of this research, and had mixed feelings about it in practice, despite the importance they placed on reading. Many struggled with reading the music, as seen in both Ann and Rita's case studies in Chapters Five and Seven, respectively, and found it a long and sometimes frustrating process, as Harriet expressed earlier. Ann described it in a similar manner,

I felt like it was a longer, slower process, you know, to kind of like go through all of the notes and everything and where your fingers should be and all that... you know how you get bored with reading a page?

(Ann – Cycle 3 – Post-intervention interview)

However, if this approach is not engaging or enjoyable for students, as the evidence suggests, it is questionable if they will be motivated to continue to learn in this way after they cease piano lessons.

The level of importance participants placed on reading notation was a somewhat unexpected finding in this study, but the lack of enjoyment and engagement was not, as I had observed this in my own teaching and learning prior to this study. Hence, the alternative formal analytical approach was implemented with the aim of enhancing student engagement and enjoyment, while simultaneously developing students' reading skills, musical knowledge and understanding.

Enhanced Engagement through Musical Analysis

Reading notation and musical analysis are closely related; they are both formal approaches which heavily involve reading. However, the analytical approach potentially goes much deeper into gaining an intellectual knowledge and understanding of the harmonic structure of a piece, as opposed to reading notation, which is a more surface level approach and is what usually occurs when students sight-read; they do not analyse or fully comprehend what they are playing (Swanwick, 1999; 1994). In contrast to this perceivably unengaging approach, which, as Harriet described, often consists of repeatedly applying a simple formula to identify individual pitches, learning by ear and analysing music were both found to be engaging activities. These approaches require critical-thinking, problem-solving skills, aural skills, and drawing on prior musical knowledge, often simultaneously, particularly when used in combination, as Ann described,

I tend to go away and look at the patterns more than normal now. Like, you know, before you'd just go away and play it but like now, I'd kind of be analysing it more like with the patterns and what's happening like if there's octave jumps or whatever, and by listening to it as well, I tend to listen to a piece first before I'd play it, you know?

(Ann – Cycle 3 – Post-intervention interview)

All participants, except Liz, enjoyed the analytical approach from the beginning and, although some found it challenging, they immediately saw the importance of it, both for enhancing musical knowledge and understanding, and for being able to apply the approach to learn other pieces independently, like Ann did, 'I could learn the chords and then I could play them for different songs myself' (Ann – Cycle 1 – Post-intervention interview), which she used to learn pop songs on piano.

For example, Rita felt she learned more deeply and remembered what she learned after just one week of trying the analytical approach prior to officially commencing the study, ‘I do really like this way because I’ve already remembered the bits that we did’ (Rita – Cycle 1 – Pre-intervention interview). Furthermore, Rita discovered that she could start at any point in the music after learning a piece using this approach, something she found difficult when learning solely through reading notation, ‘If I had to just start here (pointing to a section in *Allegro Assai* which she learned through analysis) I could, but then in *Swinging Along* (learned through reading), if I had to start here I’d be like ‘what?’’ (Rita – Cycle 1 – Post-intervention interview).

Rita went on, in Cycle 3, to explain why the analytical approach made starting in different places possible for her; it helped her navigate the piece while she was performing,

I like that we get patterns in the song and then you know what to follow throughout the song and, even when you have the notes, you know what part you’re on and you know what part you’re doing.

(Rita – Cycle 3 – Post-intervention interview)

In addition to the analytical approach helping students see the patterns and structure of the music they read, which helped them keep track of where they were in the music and start at any place in the piece, the participants stated they enjoyed musical analysis more than just solely reading notation. Moreover, the analytical approach quickly became one of their favourite ways of learning, with Harriet stating in Cycle 1 that it was her new favourite pedagogical approach, ‘I liked the patterns and arpeggios the best; that was fun’ (Harriet – Cycle 1 – Post-intervention interview). It could be argued that this was due to the approach being new to the participants and different to how they normally learn, and therefore have a novelty factor, but it became Ann’s favourite approach in Cycle 2 and Rita’s in Cycle 3, when they had two to three years’ experience of it, respectively. Moreover, it consistently remained in favour with all participants throughout the research, who found this formal approach significantly more engaging than the more traditional approach they were accustomed to of solely reading notation.

Optimal Challenges

Most participants reflected on the challenges of learning by ear and analysis as positive challenges which aided their musical development, particularly David, Feargal and Harriet. Csikszentmihalyi's (2002) Flow Theory emphasises the importance of balancing difficulty with skill level to obtain an optimum challenge, which has been found to develop and enhance competence (Ryan and Deci, 2017). This was strived for throughout this research and the impact of optimal challenges, particularly through the implementation of these alternative approaches, on student competence is illustrated in detail in David's case study in Chapter Six.

Not all challenges were seen as negative, however, and many students positively associated learning by ear with being challenged. For example, both Harriet and Feargal, among others, felt that having to work to discover the notes by ear was more engaging and enhanced their feelings of independence,

I liked trying to figure out what the next note was because it was, um, it made me kind of work for the song instead of just having it put in front of me.

(Harriet – Cycle 3 – Post-intervention interview)

I think I was a lot more independent doing it by myself and it was a good challenge too. And when I finally got it I was really happy.

(Feargal – Cycle 3 – Post-intervention interview)

In addition, the sense of achievement evident in Feargal's excerpt after discovering the notes for himself likely led to an enhanced feeling of competence, as achievements like these are strongly linked to competence building, according to SDT (Ryan and Deci, 2017). Furthermore, from these excerpts, learning by ear could be considered as the ultimate discovery learning activity and these positive accounts of being challenged indicate that the pre-recorded riffs were at an optimal length and met their skill level (Csikszentmihalyi, 2002; Shernoff and Csikszentmihalyi, 2009). Research shows that when students discover new things for themselves it stimulates cognitive activity and they become more engaged, independent, and effective thinkers and learners (Gage and Berliner, 1998). The short excerpts above from Harriet and Feargal's interviews support these findings.

The Effects of Enjoyment on Engagement

During analysis of the interview data, a significant correlation between learning by ear and enjoyment was observed. While there remained no references to enjoying reading notation, there were thirty-seven accounts of enjoyment when learning by ear, and all six participants mentioned this at least once in each post-intervention interview. Comparatively, there were ten accounts of enjoyment while employing the analytical approach, making learning by ear undoubtedly the most intrinsically interesting approach (Ryan and Deci, 2017), according to these participants.

While some students felt learning by ear would be difficult in their pre-intervention interview, all students said they enjoyed learning by ear from the beginning, predominantly because it was ‘different’, i.e., they liked the novelty factor of it,

It’s different than just staring at notes all the time.

(Liz – Cycle 1 – Post-intervention interview)

...because it’s different like.

(Harriet – Cycle 1 – Post-intervention interview)

However, in Cycle 3 students gave more detailed responses to why they enjoyed the approach. Harriet discussed how learning by ear enhanced her overall learning experience in the classroom and at home, noting that she enjoyed the challenge of having to figure out the notes herself,

I liked doing it by ear because I found it easier than reading the notes, and it was kind of more fun to try and figure it out than trying to read it.

(Harriet – Cycle 3 – Post-intervention interview)

And how this approach resulted in increased playing time in the lesson compared to when reading notation, therefore making it more engaging and a more musical experience overall,

Aoife: Has learning by ear changed your experience in your piano lesson or at home?

Harriet: Yeah, kind of, I mean it would be more me playing rather than reading because, when it was the notes, we’d spend a long time on just looking at it. And then we’re just playing straight away when we do it by ear.

(Harriet – Cycle 3 – Post-intervention interview)

An enhanced learning experience and enjoyment, in comparison to reading notation, was mentioned by several other participants, including Liz who said,

I think it's more interesting than to be reading notes all the time. You get more... I don't know. It's a lot more different than what I had been doing before so it was more interesting, and it was definitely more enjoyable than reading.

(Liz – Cycle 3 – Post-intervention interview)

And Feargal, who stated, 'I thought it was a better experience... I loved it that way, it was unique' (Feargal – Cycle 2 – Post-intervention interview). Feargal also reflected on the impact enjoying this approach had on his learning experience and perceived musical development in Cycle 3,

Doing it by ear, I think that was a huge benefit and it was definitely effective because I really liked it... I could always hear it when I was trying to play it at home or at the lesson and I think it just made it easier.

(Feargal – Cycle 3 – Post-intervention interview)

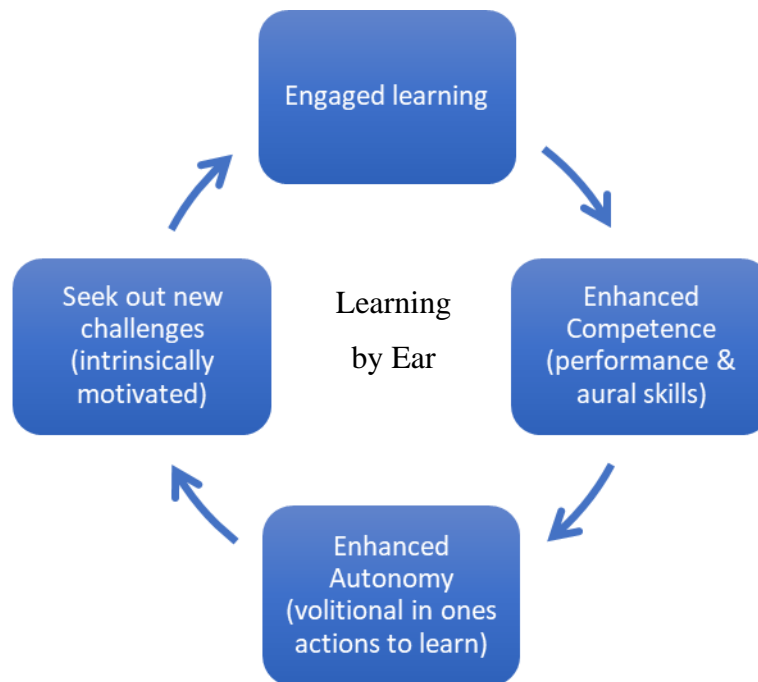
Overall, because of this evident enjoyment of the approach, the learning by ear approach was more engaging and motivating for students. As Liz described,

I find it a lot easier to play the pieces because it's, like... I don't know, when you have it in your head like you can just, without having to stop to look at the notes, I don't know, I find it a lot easier to just be able to play it, and then it motivates me more to play it.

(Liz – Cycle 3 – Post-intervention interview)

What Liz, and some of the other participants, described can be represented as a virtuous circle of learning, illustrated in Figure 8.1. Because the students enjoyed the learning process and found it enhanced their learning, and performance and aural skills, this gave them a sense of achievement and enhanced feelings of competence. This positive learning experience enhanced their feelings of autonomy as they began to internalise their motivation, and they wanted to continue to learn in this way of their own volition, which in turn motivated them to seek out new challenges. The students became intrinsically motivated by both the process, which they found inherently interesting and engaging, and the resulting enhanced feelings of competence and autonomy (Ryan and Deci, 2017).

Figure 8.1. Virtuous Circle of Learning by Ear



Each stage of the virtuous circle is both beneficial and essential for the next to occur, and as the student moves along this continuous feedback loop their musical competence and feelings of autonomy are reinforced. Becoming engaged learners through learning by ear is how these participants entered the virtuous circle, but their descriptions of their learning experience of reading notation illustrated a lack of engagement and enjoyment, thus it is not surprising that this formal approach did not have the same positive impact on the students' feelings of musical competence, autonomy, and/or motivation to learn. An enjoyment of the approaches used is essential for maintaining student engagement.

The Impact of Alternative Pedagogical Approaches on Independence

Importance of Musical Literacy for Independent Learning

Strong sight-reading skills and understanding music theory such as time signatures and key signatures were considered essential for becoming an independent learner by all participants, with the exception of Rita. However, although Rita did not explicitly discuss her views on the importance of musical literacy, she continually said she wanted to continue learning formally, in

addition to employing other approaches. In addition, she mentioned that she felt reading sheet music was helpful when she struggled to focus, as discussed in her case study in Chapter Seven (See section on Focus), so she evidently placed some importance on reading skills.

David, in particular, felt musical literacy skills would result in becoming independent, ‘if you know all the chords and you know all the notes then you can probably learn anything if you put enough time into it’ (David – Cycle 3 – Post-intervention interview). Furthermore, even students who did not enjoy reading notation, such as Harriet, considered reading skills to be important for independent learning. She said, ‘you’d want to know the notes, because even if you just look up a song you can just learn it by looking at it’ (Harriet – Cycle 3 – Post-intervention interview).

In addition, while Liz explicitly said ‘I don’t really enjoy reading the notes that much’ (Liz – Cycle 3 – Post-intervention interview), in Cycle 3, she said that it would be her first choice for learning a piece independently because ‘if you could see it in front of you it would be easier’ and explained the difficulty of learning by ear when listening to an audio recording of a complete piece, hands together, as it would be presented when learning independently,

By ear, it’s going to be harder because it’s not the, like, when you’re giving me the recordings you give a small piece at a time whereas you’d have to kind of listen to it and then pause it, I don’t know. It would be harder.

(Liz – Cycle 3 – Post-intervention interview)

Although Ann proved, like popular musicians who learn in this way, that segmented recordings are not necessary for independently learning by ear, Liz was not at this stage yet and, therefore, completely learning a piece by ear was not an option for her. For this reason, musical literacy was more important for her for independent learning.

Aural Skills, Musical Knowledge, and Understanding for Independent Learning

The participants in their Cycle 2 post-intervention interviews felt that having good aural skills and an understanding of harmony would help increase the likelihood of them continuing to play piano independently as an adult. They mentioned how having a good ear would help them ‘hear’ the

music, and how analysis helps them gain a greater understanding of the music, as Ann said, ‘it would be easier to make sense of a piece, you know?’ (Ann – Cycle 2 – Post-intervention interview). The importance of aural skills and a musical understanding and knowledge continued to be valued in Cycle 3 in relation to independent learning, with an additional increased emphasis on reading skills, as discussed above.

The impact of Optimal Challenges on Enhanced Competence and Independence

Despite the participants focusing on approaches and musical skills, which may have been influenced by how I phrased the interview questions, the impact of optimally challenging activities emerged in the Cycle 3 post-intervention interviews. For example, Feargal felt more confident and independent in his learning when learning by ear, which he described as an optimally challenging activity for him, and his success and independence he evidently felt from implementing this approach gave him a sense of achievement, which, as discussed above, is one of the ingredients of enhanced feelings of competence. Feargal discussed his past learning experiences in comparison with his experiences of learning during the three cycles of action research,

When we first started it was obviously teaching me how to play it and then I repeated it and we done that, but over the last few years, recently, you’ve been playing audio and I have to try and listen by audio, and I have to learn to play it myself by then... I think I was a lot more independent doing it by myself and it was a good challenge too. And when I finally got it I was really happy.

(Feargal – Cycle 3 – Post-intervention interview)

As you can see from this excerpt, the optimum challenge of learning by ear, and the independence he felt employing that approach, in addition to the obvious sense of achievement he felt when he had learned a new section, resulted in a greater feeling of musical competence. This was also noted in the other participants interviews, such as Rita’s, when she described how the approaches implemented, and the competence- and autonomy-support she received, impacted her independence and transformed how she thought about learning piano, as discussed in detail in Chapter Seven.

The independence and confidence gained from this evident increase in perceived competence among the participants is significant. Through competence-supportive teaching strategies and the sense of achievement, and therefore competence, the students gained from them, resulted in these students becoming further equipped with the skills to partake in lifelong independent learning. This was encapsulated by Ann's comment about independence and her overall musical development in her final interview,

I'd definitely be more pushed now to actually learn something because I'm able to, you know?

(Ann – Cycle 3 – Post-intervention interview)

It is evident she felt, at this time, a musically competent and independent learner.

How a Combination of Approaches Increased Student Independence

Ann's case study in Chapter Five demonstrated the benefits of using a combination of approaches. Ann employed all three approaches in Cycle 3 to independently learn new repertoire, both classical and popular in style. She discussed the benefits of using a varied approach including how her musical skills, confidence and independence developed and how she became a more engaged learner. In addition, we saw a clear development in Ann's thinking and approach to learning by the end of Cycle 3 as she no longer solely relied on her ear to learn a new pop song but downloaded the sheet music too; predominantly using a combination of ear and reading to learn the melody lines and notation and analysis to guide her through learning the accompaniment. In summary, she synthesised the three approaches to independently learn new repertoire efficiently and effectively, and she demonstrated that she now has the tools and skills to learn complete pieces independently, in contrast to only the melody line as she did at the beginning of this research.

Students who independently learned a piece previously used YouTube or a combination of their ear and aural memory of the piece, but, like Ann, only learned a small section, often just the RH melody line of the chorus. However, in Cycle 3 all participants used a combination of learning by ear, analysis, and reading to learn new repertoire independently. Combining approaches

equipped the students with the skills and confidence to learn more complete pieces and simultaneously use their listening, reading, critical thinking and problem-solving skills, and musical knowledge and intuition, to decide what approach would be best in different learning situations.

Challenges with Independently Employing the HeLP Approach

Liz considered the primary difficulty, as she saw it, with learning by ear, and applying the HeLP approach, in the same way it was used in our lessons, to learn a new piece independently. She stated,

When you're in a lesson it's different because you get like a small section of it at a time for the right hand and then you learn the left hand separately, you know you learn them separately, whereas if you were to listen to it online then it would probably be just hard because you would have to listen to it all together.

(Liz – Cycle 3 – Post-intervention interview)

Liz made a valid point as the learning by ear approach relies heavily on the proactive teacher who must pre-record and provide the riffs for the students to listen to. This service is not provided when learning independently unless a student uses notation software to break down the piece for themselves first, but this is time-consuming and therefore it is unlikely a student would go to such trouble. This is not something that is easily addressed. However, Ann demonstrated, in Chapter Five, that complete recordings of the piece hands separate was enough for her to learn independently by ear during Cycle 3. With this development it is likely that, with more experience and confidence of learning by ear, these students would eventually learn pieces using full recordings, if it was something they wished to do. Afterall, this is how popular musicians typically learn new pieces (Green, 2002), and it is hoped that these students would gain such autonomy and independence over their learning that they would ultimately gain the aural skills and confidence to learn in this way if they wanted to.

Non-Musical Factors that Impacted Student Experiences and Development

The Role of the Teacher

The role of the teacher is critical in building a strong student-teacher relationship and ensuring a positive learning experience is achieved. Previous research has shown that when teachers create an open and accepting environment that encourages students to voice their opinions, interests, and needs, and teach in an autonomy- and competence-supportive way, it ensures students' basic psychological needs are met (Comeau *et al.*, 2019; Evans, McPherson and Davidson, 2013; Evans, 2015; Ryan and Deci, 2017). The one-to-one piano lesson is a unique and special learning environment perfect for cultivating this type of positive relationship. Here the teacher can assess individual student's musical needs and interests through a dialogical process and adapt each lesson accordingly. This can include providing a choice of suitable repertoire that may meet their musical interests, in addition to guiding them through the implementation of various approaches to learn such repertoire.

The teacher plays an important role in the implementation of these approaches. They must use their musical knowledge and pedagogical expertise, in addition to their knowledge of their student's skill level and musical knowledge, to ensure each activity they create is optimally challenging; not too easy for the student where it becomes boring, and not so difficult that it exceeds their ability and therefore causes stress or anxiety (Csikszentmihalyi, 2002; Shernoff and Csikszentmihalyi, 2009). For example, pre-recorded riffs need to be of an optimum yet manageable length for the student, and, when preparing for analysis, the teacher must ensure the student is equipped with the necessary prior knowledge to enable them to make musical connections for themselves as the teacher guides them through learning new repertoire. When this balance is achieved by the teacher it can lead to positive learning experiences and outcomes, as illustrated, and discussed in detail in David's case study in Chapter Six.

All six participants said that having autonomy over how and what they learned was important. However, David and Harriet, while advocating for choice, specifically discussed the importance of the role of the expert teacher. They felt that students should be introduced to a variety of learning approaches and spend time experiencing them, as they did in this study, before having a choice. For example, David said, ‘I think you should make them do one piece by ear at the start... and then you can give them the choice’ (David – Cycle 3 – Post-intervention interview). Harriet also felt that a student may decide to only learn by ear, for example, and that, in this situation, the teacher needs to intervene to ensure other approaches are also employed because students ‘also need to be good at doing the notes’ (Harriet – Cycle 3 – Post-intervention interview). This shows the value Harriet, like others, as discussed previously, placed in taking a varied approach to learning in addition to the teacher knowing what is best for the student’s musical development. Developing reading and aural skills simultaneously was essential for these participants, who wished to become well-rounded, competent, and independent learners, and having autonomy appeared to come second to this for David and Harriet. While these are not necessarily separate goals, they could be seen as such. Therefore, the teacher plays an important role in ensuring students become well-rounded *and* autonomous musicians.

Benefits of a Positive Student-Teacher Relationship

Maintaining a positive student-teacher relationship has been a part of my teaching philosophy from the beginning. Therefore, while important, relatedness was not discussed in detail in the case studies as it was not something I felt needed to be actively enhanced through this research. However, the importance of a good student-teacher relationship, as encouraged in SDT (Ryan and Deci, 2017), emerged numerous times in the participant interviews. In addition, the approaches implemented and the autonomy- and competence-supportive teaching I adopted appeared to have a positive impact on our student-teacher relationships, as it resulted in a more equal partnership in the one-to-one lesson, particularly in Cycle 3 when the participants gained autonomy over the approaches implemented.

Previous empirical studies found that an equal partnership in the classroom gives students a sense of belonging and importance and helps promote sustained engagement; reducing the likelihood of early dropout (Comeau *et al.*, 2019; Evans, McPherson and Davidson, 2013; Evans, 2015; McPherson, 2006; Pitts, Davidson and McPherson, 2000; Ryan and Deci, 2017).

The importance of relatedness in the one-to-one piano lesson was particularly prevalent in the Cycle 3 post-intervention interviews. For example, as seen in the following excerpt, Feargal discussed how important this relationship was for his learning experience, and how he felt comfortable voicing his needs in our lessons:

Aoife: Was there anything that you liked in particular in your lessons that you think other teachers should do, or not do if you didn't like anything?

Feargal: I think it's just how comfortable and how great we got on; we had really good chemistry the way we talked, and you taught and I played, and it's being comfortable in the room you're playing in.

Aoife: Okay, so is it building up a relationship with your students?

Feargal: Yeah, building a relationship, yeah.

Aoife: ...what's important about having a good relationship?

Feargal: It's just being comfortable and having, along with just chatting with the teacher and telling them what's wrong and right and what you want. I think and not being scared to tell your teacher that as well.

(Feargal – Cycle 3 – Post-intervention interview)

In addition to the obvious benefits of students feeling secure enough to speak with their teacher in this way, Rita spoke about how a positive relationship can lead to positive learning outcomes:

I just think just have an understanding with your students and a good relationship with them because it will help them learn.

(Rita – Cycle 3 – Post-intervention interview)

The Impact of a Negative Student-Teacher Relationship

While a good relationship can help student's flourish and enhance their learning experience, a bad relationship can have a detrimental effect on a student's learning experience and was found to be one of the primary reasons for early student dropout from instrumental lessons (Pitts, Davidson and McPherson, 2000). As can be seen in Rita's account of learning tin whistle, it is not surprising she

stopped playing after such a negative experience with her teacher, their approaches, and the chosen repertoire, as they did not line up with Rita's needs and interests at the time:

We were doing like, we were doing, what was it, it was Jigs and that kind of stuff and I just... it was completely meaningless to me... and the teacher would say, in front of everyone, 'you're in higher, you're in lower, you're in beginners or you're in resource tin whistle' so you would then be so stressed to get into the higher, to be with like your friends and your classmates, that you would try and learn like just the notes and just not care about the song or anything, and then it put so much stress on to tin whistle that every time I even looked at a tin whistle I'd get PTSD. I'd hate it!

(Rita – Cycle 3 – Post-intervention interview)

Yet, interestingly, after experiencing alternative learning approaches in piano, in addition to an overall positive learning experience and gaining autonomy over her learning (See Rita's case study in Chapter Seven for a detailed account of this), Rita returned to independently learning tin whistle of her own volition and discovered that she enjoyed learning and playing it once she gained autonomy over what and how she learned. It is likely that, if she did not have these positive learning experiences in piano with an autonomy- and competence-supportive teacher, she would not have returned to playing tin whistle and her negativity towards it would have remained indefinitely.

Teacher Dependence

The prevalence of instrumental music students remaining dependent on their teacher to tell them how and what to learn, even at an advanced stage, is discussed in the literature (Evans, McPherson and Davidson, 2013; Evans, 2015). This was seen in many of the participants who, until Cycle 3, continually waited for me to tell them what and how to learn, and rarely, if ever, took initiative to learn an additional section or piece independently prior to this. Feargal, in his Cycle 1 pre-intervention interview explicitly said, 'I prefer to get it off the teacher personally' and cited his learning preference as 'copying the teacher's hands' (Feargal – Cycle 1 – Pre-intervention interview). Similarly, Harriet admitted to rote learning in the beginning, 'when you play the pieces I kind of watch where your fingers are and then I remember it, but I also use the notes then' (Harriet

– Cycle 1 – Pre-intervention interview). This rote learning, while it obtains results, is not beneficial for a student's sense of autonomy or competence, or overall musical development.

Evans (2015) and Evans, McPherson and Davidson (2013) found that teacher dependence was due to the teaching strategies, influenced by Western Classical music traditions, that are predominantly employed in one-to-one instrumental lessons. These included focusing on repertoire prescribed by the teacher, an overemphasis placed on graded examinations, the absence of a rationale for each activity, the use of rewards to control behaviour, and an emphasis on compliance over creativity; all of which undermine student autonomy (Evans, McPherson and Davidson, 2013; Evans, 2015). They advocate for autonomy-supportive teaching strategies such as providing choice of repertoire and activities and encouraging students to develop their own goals. Interestingly, Ann discussed this in her Cycle 3 post-intervention interview and discussed how goal-setting can enhance student motivation and independence, therefore reducing teacher dependence, as it did for her in Cycle 3,

If they (students) were more motivated to be independent they'd kind of work away on their own rather than waiting for somebody else to do it for them like, you know?... work away and then try and go above that goal then, you get me?

(Ann – Cycle 3 – Post-intervention interview)

Teacher dependence is detrimental to a student's sense of autonomy, competence, and independence (Evans, McPherson and Davidson, 2013; Evans, 2015). This research advocates for teachers to take on the role of facilitator and enhance student autonomy by showing them how to learn and provide them with the necessary tools, such as reading, aural, analytical and critical thinking skills, to become independent and autonomous learners (Bruner, 1961).

Examinations

Examinations, according to SDT, are found to engage students in non-competence building behaviours as they focus on taking the shortest path to achieve a desired outcome in the examination (Ryan and Deci, 2017). As discussed in the literature review and theoretical

framework, examinations have become a primary focus in one-to-one instrumental lessons, with some saying they dominate our pedagogical approaches (Taaffe, 2014). Evans (2015) listed this type of focus on examinations as a competence-thwarting behaviour which can promote learning strategies that are detrimental to a student's competence, autonomy and intrinsic motivation to learn. In addition, completing piano examinations are frequently perceived as an end point for learning, both the end of year examination when you finish playing until lessons resume after the summer holidays, and Grade 8 being the end point before you cease taking formal lessons. This contrasts starkly with the learning practices of popular musicians who continue to learn throughout their life-course (Green 2002).

In addition, there is inconsistency between what grade a student is preparing for or has achieved, and their musical skills and ability. From my experience as a piano teacher there is a significant difference in the standard and ability of someone who completed their Grade 8 with a pass or merit, and one who received an honour or distinction. That disparity is also seen in the previous grades. However, those who have achieved their Grade 8 certificate, regardless of their result, are perceived as a proficient and independent musician, yet, from experience, many of these lack the skills or motivation to learn complete pieces independently.

Furthermore, the dominant ideological perspective of associating Grade 8 certification with being a proficient and competent performer, or 'finishing' piano, was evident in some participants' interviews in Cycles 1 and 2. Comments on why getting to Grade 8 is important in relation to your musical competence such as 'you know you wouldn't be able to play to the full potential that somebody on Grade 8 would be able to play to' (Ann – Cycle 1 – Post-intervention interview), and 'just to prove I can play piano' (Feargal – Cycle 1 – Post-intervention interview), in addition to comments like 'there's no point in kind of stopping at Grade 6 or something because you kind of got like half ways there but you never actually finish it' (Liz – Cycle 2 – Post-intervention interview).

Perspectives like these are common among piano students and their parents, but it is perhaps part of the reason so many cease playing piano once they complete their Grade 8 examination; reaching Grade 8 becomes their goal for so many years and, once they have achieved it, they can say they are proficient pianists but move on to something else in their lives, with few actually regularly sitting down to play piano and independently learn new pieces after this (King, 2016). In addition to considering Grade 8 as an end point, it is likely that these students were so dependent on their teacher and the structured examination system their whole piano playing lives, that they do not know what to learn or how to learn independently without these supports in place. Therefore, the teaching of critical thinking and problem-solving skills from the early stages of piano lessons and the inclusion of scaffolded activities, where the scaffolding is gradually removed as the student gains musical competence and security, is critical for fostering lifelong independent learning skills, as was demonstrated in this research, particularly in the three case studies in Chapters Five to Seven. Getting to Grade 8 is a remarkable achievement, and important if you wish to teach piano, as Ann, Feargal, Liz and Rita felt in their interviews, in addition to obtaining a teaching diploma, but it should not become the dominant focus of piano lessons. Regardless of whether a student achieves this level or not should not impact their ability to continue playing piano throughout their life.

Practical Challenges with Technology

Despite the overwhelming positivity conveyed by the students for learning by ear, and the obvious musical benefits, it was not without its challenges. The first was only an issue in Cycle 1 for Feargal, who initially found it difficult to remember what he learned by ear in class, ‘it was hard to remember when you went home’ (Feargal – Cycle 1 – Post-intervention interview). It was unknown if Feargal listened to the CD when at home, although he later disclosed that he found it awkward getting a CD player and putting it on, so it is possible he tried to rely on his memory when at home, which would explain his difficulty.

Overall providing the students with a CD, in hindsight, was not ideal because some students did not have easy access to suitable CD players. Therefore, Cadenza was introduced in Cycle 2 to eliminate this issue, but it caused a different problem; as the students had to login to the website each time they wanted to listen to the recordings, and there was no way of storing the recordings in an easily accessible folder. Instead, students would have to scroll back through each week and find the recordings that way. Furthermore, Cadenza was susceptible to crashing at times which understandably frustrated the students, which can be seen in Rita's account of using it,

I really like Google Drive. I think it's just because how much I hated Cadenza because I'd go into it, I wouldn't know my password, I'd have to go into my Mam's phone, try to find it in her settings, and then Cadenza would crash on me the second I'd go into it... With Google Drive I have it on my phone, my computer; I have it on everything, so even when I was out, and I'd get sent something I could just listen to it really quickly or when I was in my room, and I didn't want to get my computer or anything, I could still listen to it on my phone.

(Rita – Cycle 3 – Post-intervention interview)

This led to the use of Google Drive in Cycle 3, which was unanimously the favourite platform for sharing recordings. As Rita described in the excerpt above, the participants had easy access to their recordings from any device and could easily download them from Google Drive for offline use, which some did.

Summary

Formal and non-formal approaches are often seen as a dichotomy in instrumental music education (Brook, Upitis and Varela, 2017; Folkestad, 2006) but the findings from this study support the claims of Folkestad (2006) and Brook, Upitis and Varela (2017), that formal and non-formal approaches are complementary approaches that are more impactful when used together and enhance student interest, ultimately leading to well-rounded, motivated, and engaged musicians.

The musical developments observed by these participants from implementing the learning by ear approach, in addition to their enhanced critical thinking and listening skills, and enjoyment, engagement and motivation to learn, as outlined previously, are all significant findings. As this

chapter demonstrated, the inclusion of non-formal learning practices in particular enhanced students overall learning experience, skill attainment, engagement, and motivation to learn. It is not surprising that it was the most popular approach for all participants. However, as highlighted by Liz previously, learning exclusively by ear is often not ideal. Some piano repertoire, particularly intermediate and advanced pieces, are too texturally dense to implement this approach successfully or easily, in addition to only having access to complete recordings, not sections of pieces broken down into manageable riffs as in the HeLP approach. Moreover, all the participants, while they may not have enjoyed reading notation, placed great value in being skillful readers and gaining an understanding of harmony and chords, particularly with regards to independence, and enjoyed analysing music.

The increased engagement and musical knowledge and understanding reported by students through musical analysis was also a noteworthy finding. Moreover, each development from both formal and non-formal approaches, contributed to students increased feelings of competence, autonomy and independence, and overall security when performing.

It was found that using a combination of formal and non-formal pedagogical approaches created an optimum learning experience that was beneficial for enhanced musical development and in creating well-rounded musicians with enhanced listening, analytical, and reading skills. In addition, the participants reported enhanced levels of motivation, engagement, enjoyment, and independence when using a combination of approaches. This was due to the alternative pedagogical approaches implemented and the autonomy- and competence-supportive teaching employed using discovery learning, scaffolded activities, and the provision of choice in both repertoire and approaches employed.

CHAPTER 9 - TOWARDS A NEW PEDAGOGICAL MODEL

Introduction

In this chapter, I present a new pedagogical model for practitioners. The first iteration conceptualises how the different approaches employed in this research, that were found to enhance learning experiences and outcomes for students, interact with one-another in the teaching and learning process, and how I typically implemented them in my teaching. The second model was created for practitioners to illustrate how these approaches can be implemented either individually or collectively in their teaching practice. This model is not intended to be prescriptive. As the findings have shown, flexibility is needed for practitioners and for learners, and accordingly, the model is designed to be adaptable to the varied contexts of piano teachers, and to the differing abilities and stages of their students.

Before presenting the model, it is important to revisit some of the key theories outlined in Chapter Three and discuss their impact on the construction of this new model. Moreover, it is important to discuss how this model relates and differs to those that preceded it. I will then present both iterations of the model and discuss each of the approaches illustrated on them, followed by a short discussion of the four learning attributes that these approaches were found to enhance, as emerged from the themes, and discussed in detail in the previous chapter.

Models of Musical Development

When examining musical development, I revert to Swanwick and Tillman's (1986) spiral of musical development, as discussed in Chapter Two. Despite the current debates around this model, discussed earlier, Swanwick and Tillman's (1986) spiral was helpful in the design and creation of activities and resources for students at different stages of their learning. Furthermore, it helped identify the student participants' musical development as they moved between musical encounters (illustrated on the left of the spiral) and musical instruction (on the right of the spiral), and between

musical intuition and analysis. Philpott (2022) compared this ‘ebb and flow of musical experiences’ to Folkestad’s (2006) continuum of formal and informal learning ‘where the informal moment has an emphasis on playing or making music (encounter) and the formal moment on learning how to play music (instruction)’ (Philpott, 2022, p. 84).

Folkestad’s (2006) continuum of formal and informal learning was central to this research from the beginning, both in influencing the choice of pedagogical approaches implemented in the action research project, and ultimately in the design of my new pedagogical model. Folkestad (2006) argued that formal and informal should not be seen as a dichotomy, but two poles of a continuum, and identified four different aspects of using formal and informal learning which define where learning takes place and the nature of it. These are ‘situation’, ‘learning style’, ‘ownership’, and ‘intentionality’.

Folkestad’s influential work impacted several models of music learning. Wright (2016) illustrated Folkestad’s ideas in her model of the mixed-polarities of informal learning (See Figure 9.1) and compared these continuums to sliders, or faders, on a mixing board, moving between the two. Hewitt (2018) took this idea further by illustrating the mixing board Wright described (See Figure 9.2).

Figure 9.1. Wright’s (2016) mixed polarities of real-life informal learning

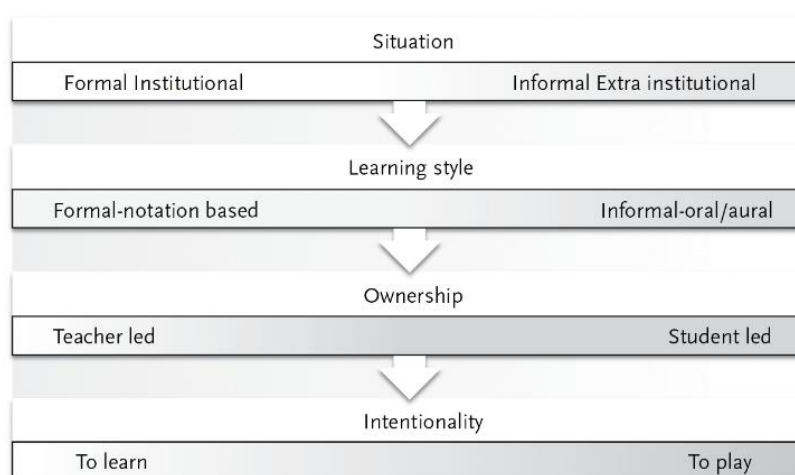
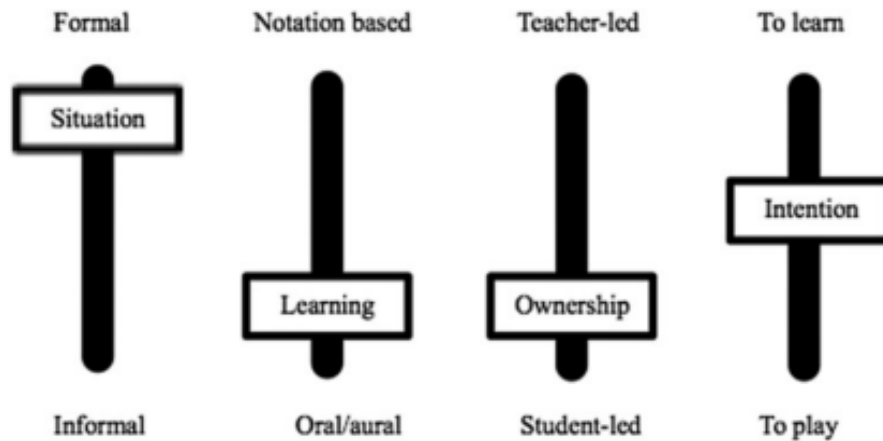


Figure 9.2. Hewitt's (2018) interpretation



Both scholars were heavily influenced by Folkestad (2006), but moreover, the work of Lucy Green (2002; 2008); in particular Green's Musical Futures approach developed for classroom teaching. Both Hewitt (2018) and Wright (2016) implemented the Musical Futures approach within US and Canadian contexts, respectively, with both yielding similar results to the UK-based studies.

While these are important developments in music education, these studies and models all focused on classroom music, except for Folkestad's research which looked at formal and informal learning in a broader musical context. Since Folkestad, there has been few advancements in the creation of new developmental or pedagogical models looking exclusively at instrumental music learning. The most significant contribution has been Creech, Varvarigou and Hallam's (2020) model of 'manifold musical possible selves' (See Figure 9.3) which is illustrated along a formal and informal continuum.

The model of 'manifold musical possible selves' represents our musical narratives which are made up of past, present, and potential future formal, non-formal and informal musical experiences, and interactions with others, i.e., parents, teachers, and peers. These interactions are organised into 'meaningful and coherent stories' that represent our 'possible selves' (Creech, Varvarigou and Hallam, 2020, p. 239). According to Creech, Varvarigou and Hallam (2020), how we perceive these experiences, and how we, and others, view our potential musical capacity or shortcomings is what shapes and informs our musical learning and participation.

Figure 9.3. Creech, Varvarigou and Hallam's (2020) model of 'manifold musical possible selves'. (Created by John Martzoukos – graphic designer)' (p. 17)



A range of contexts, pedagogies and practices, which are depicted on the model, can impact our musical possible selves either positively or negatively. At the centre of the model are the six dimensions of teaching (planning, structuring, meaning, confronting, feeling, and valuing), surrounded by three facilitation modes (hierarchical, cooperative, and autonomous) and four levels of manifold learning (conceptual, practical, experiential, and imaginal). These are all positioned within 'the phases of development of musical possible selves (discovering, imagining, thinking, reflecting, performing and growing), which are aligned in a flexible way alongside the levels of manifold learning, thus illustrating the 'dynamic relationship between dimensions of learning' (Creech, Varvarigou and Hallam, 2020, p. 18).

The model of manifold musical possible selves is a significant contribution to music education and builds awareness of the impact past, present and future interactions and experiences can have on musical development. Although Creech, Varvarigou and Hallam's research was published in 2020, and therefore after my data collection had finished, it has important correlations with my pedagogical model, which, although does not look at musical possible selves, also aims to enhance musical learning and development.

Theories in Cognitive Development, Education, and Motivation

Due to the lack of research on instrumental music learning processes I also looked to wider theories of cognitive development, education, and motivation psychology. The primary theories that guided this research, and ultimately became essential components of my pedagogical model, is Ryan and Deci's (2017) Self-Determination Theory (SDT) and Bruner's (1960; 1961; 1966) Scaffolding of Learning and Discovery Learning Theories, which are discussed in detail in Chapter 3.

SDT was significant as the inclusion of autonomy- and competence-supportive teaching strategies became essential to the student participant's development, and therefore became a vital part of my new pedagogical model. Previous research has shown that autonomy-supportive teachers have the greatest impact on increased student motivation (Chirkov and Ryan, 2001; Ryan and Deci, 2017), and a decrease in early dropout from lessons (Evans, McPherson and Davidson, 2013). The findings of this study corroborated these statements; as the students became more autonomous and competent, and therefore more confident and motivated learners by Cycle 3 of the action research project. Furthermore, all students were still partaking in active music making and learning at the time of submission of this thesis.

It was essential for Bruner (1961) that teachers do not impart knowledge onto students, but facilitate students' learning by guiding them through making discoveries for themselves through discussion, problem-solving and inquiry (Bruner, 1960; Gage and Berliner, 1998). In implementing the discovery learning approach, the teacher's role is to provide space and time for student discovery; this allows students to make musical connections for themselves and engage in critical thinking and problem-solving, therefore honing these skills while simultaneously increasing engagement and effective learning (Gage and Berliner, 1998).

Scaffolded learning was also found to be beneficial for students in this study, both in the implementation of alternative formal approaches and the informal approach of learning by ear. Through analysis, the use of scaffolding was used to help activate the students' prior knowledge of

musical theory and enabled them to gradually build on this knowledge and move on to more advanced ideas and concepts, often through discovery learning. Previous research on implementing informal learning activities in formal settings found that putting students ‘in at the deep end’ can be a negative and uncomfortable experience for students who are used to more teacher-led activities (Hewitt, 2018; Wright, 2016). The use of scaffolding in the initial stages of learning by ear proved vital as the students took some time to get used to the new learning approach and the change in the student-teacher dynamic as the students gained more autonomy over their learning. Without scaffolding the listening activities and creating resources that meet the students’ level, the results of implementing new pedagogical approaches may not have been so successful.

Motivation for MuSIKE Model

The Motivation for Musical Skills, Independence, Knowledge, and Engagement (Mo-MuSIKE) Model is a student-centred model that aims to create motivated and engaged learners with the musical skills and knowledge to partake in independent, lifelong learning. The approaches that are illustrated on the model were employed and developed throughout this research project and found to be successful and complementary to one-another. These approaches are illustrated thus:

- Formal and Non-Formal Continuum
- Active Listening
- Discovery Learning
- Scaffolding
- Autonomy-Support
- Competence-Support

All these approaches have been individually empirically researched by other scholars and found to be beneficial for positive learning outcomes, as discussed above in detail. These benefits were replicated in the findings of this study. Moreover, it was found that these approaches often work better when employed together – collectively, they provided a well-rounded music education for the students, encouraged students to become active listeners, discover new knowledge for themselves

and increased their critical thinking and problem-solving skills. Furthermore, the inclusion of supportive teaching strategies such as scaffolded activities, autonomy-support, and competence-support, helped students gain important musical knowledge and skills, and become in control of their own learning. All of which contributed to enhanced student motivation, engagement, and independence.

Two iterations of the model were created for the purposes of this thesis. The first illustrates the teaching process found most beneficial within the context of this study and my teaching with the six student participants (See Figure 9.4). The second iteration (Figure 9.5) illustrates a flexible pedagogical model for practitioners that can be adapted to fit their own teaching practice.

Figure 9.4. Motivation for MuSIKE Model - In practice

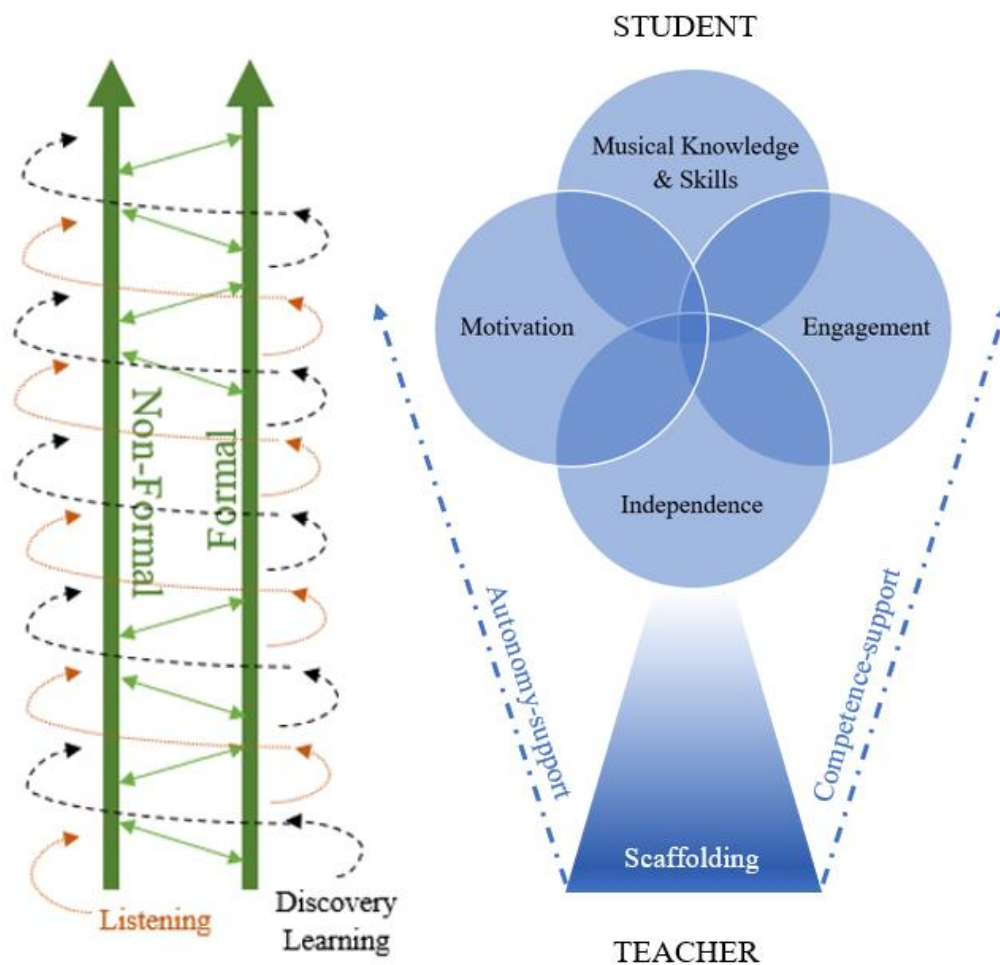
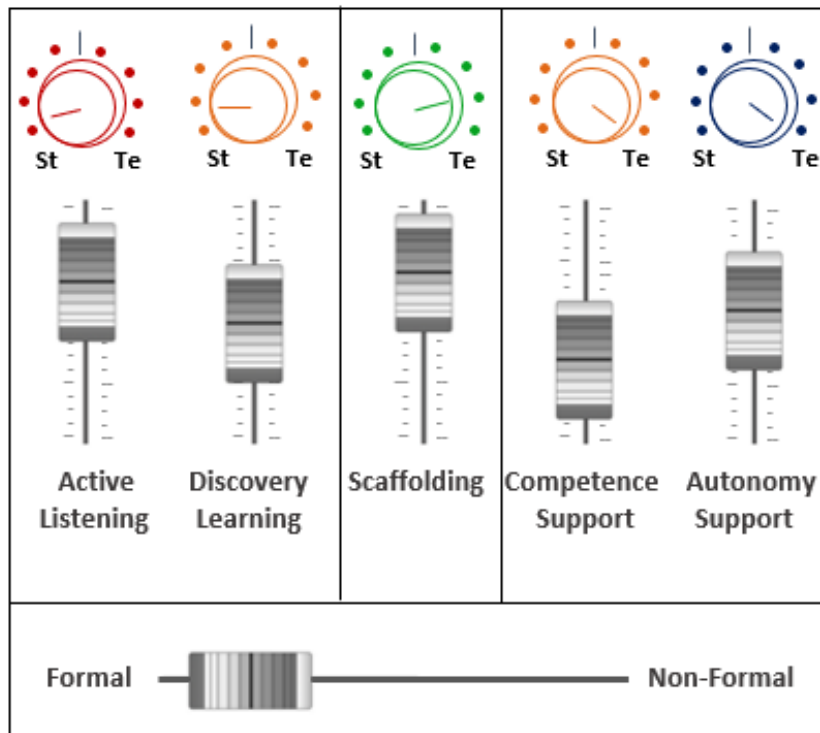


Figure 9.5. Motivation for MuSIKE Model - Practitioners



In the Mo-MuSIKE model (Figure 9.5), the formal and non-formal approaches sit on a continuum at the bottom, which the student and teacher can move back and forth between, for example, focusing on reading notation and musical analysis (formal), or, listening to recordings, usually created by the teacher, and imitating what is heard (non-formal). From the findings, it is evident that every activity in the piano lesson will fall somewhere along this continuum, and, therefore, one of these approaches will always be in play.

The other five approaches (active listening, discovery learning, scaffolding, competence-support, and autonomy-support), illustrated on the model, may be implemented individually, simultaneously, or not at all. Therefore, they are illustrated on the model as faders, like on a mixing board, which can be turned up and down as the teacher sees fit. Furthermore, these can be more teacher-led or student-led approaches, depending on the teaching and learning situation, and the student's ability and prior knowledge and skills. This is illustrated by the pan knob at the top of each fader which can 'pan' between student and teacher, again, as determined by the teacher.

Scaffolding, competence-support, and autonomy-support are specifically designed for the teacher to include in their teaching and helps the student to eventually become musically competent, autonomous, motivated, and independent learners. Active listening and discovery learning, however, are approaches which the teacher can employ initially, but ideally should be taught to the student so they too can implement them during independent learning or when practising at home.

Formal and Non-Formal Continuum

Formal approaches focus on musical literacy, technical proficiency and musical knowledge and understanding. All of which are seen as valuable skills for independent learning, according to previous research and the findings which emerged from this study. Reading notation is found to be the primary approach to learning in the one-to-one piano lesson within the Western world, and is heavily influenced by Western classical music practices (Swanwick, 1999). The formal approach advocated for in this research focuses on musical analysis and gaining a deep musical understanding and knowledge of the music being learned while enhancing reading skills and technical proficiency.

According to Bruner (1961), it is important that the teacher does not impart new knowledge onto the student but, instead, scaffolds their learning by building on prior knowledge and facilitates the student in making connections for themselves through analysis and discovery learning. As the data shared in Chapters Five to Eight show, formal learning can not only build upon the student's prior knowledge but also enables them to make important musical connections through musical analysis and discovery learning. In addition to the benefits outlined above, this analytical formal approach, in contrast to solely reading notation, is found to enhance student engagement and enjoyment, and better meet their musical needs and interests as it prepares students to learn other styles of music that they enjoy including popular repertoire.

While there are numerous benefits to formal learning, studies have found that students who participated in non-formal learning practices such as learning by ear became more engaged and motivated learners with enhanced musical skills and knowledge (Hallam *et al.*, 2009), in addition to

becoming more confident in playing diverse repertoire and in developing their critical listening skills and aural awareness (Varvarigou, 2014). The non-formal approach of learning by ear employed in this study, and the aforementioned studies, were influenced by the work of Green on how popular musicians learn (Green, 2002; 2008). This involves listening to a recording of a section or 'riff' on repeat and reproducing it on a musical instrument. In the context of the one-to-one piano lesson, the teacher creates resources by pre-recording manageable sections for the student to listen to in class and at home. As the data show, implementing a facilitative approach fosters a greater sense of autonomy, musical competence, and independence in students, while simultaneously enhancing aural skills through active listening.

Formal and informal learning are often seen as a dichotomy in instrumental music (Folkestad, 2006), but as discussed at length throughout this thesis, these have been found to be more beneficial when used as complementary approaches. The advantages of using both formal and non-formal approaches in the one-to-one piano lesson include students becoming more well-rounded musicians with strong reading and aural skills, in addition to being able to employ a different approach to learning new repertoire if one approach does not create successful results. This was demonstrated in all three case studies, particularly with Ann (Chapter Five), who independently learned a complete Grade 7 classical piece, and David (Chapter Six) who learned a significant amount of a Contemporary Classical piece, *Nuvole Bianche*, independently, using a combination of both formal and non-formal approaches.

The continuum illustrated in the pedagogical models above (Figure 9.4 and Figure 9.5) demonstrate this flexibility for both the student and teacher to move between formal and non-formal approaches when learning a single piece of repertoire. As the participants in this study discussed (See Chapter Eight), having this flexibility in learning approaches made their learning experience more engaging, interesting and 'fun', and, as found in Varvarigou's (2014) study, led to increased confidence in their approach to learning and performance of a range of repertoire, from classical to popular music.

Active Listening

Active listening became an integral part of both the formal and non-formal approaches in this study and is recommended to be used throughout the learning process, regardless of what side of the formal/non-formal continuum the activity lies on. Active listening enhances students' aural awareness, encouraging them to listen to the sounds they produce and correct any errors if necessary, or confirm that what they are playing is accurate. Moreover, the act of purposely listening to recordings prior to learning or playing a new piece, encouraged students to play with more musical intention from the very beginning of the learning process, and partake in 'mind training', as advocated for by Matthay (1903; 1910; 1913).

It was found in this study that active listening not only enhanced the student participants' confidence in learning and performing, but motivated and engaged them from the beginning of the learning process and helped them feel independent as they relied less on the teacher to constantly provide feedback on their progress. Through actively listening to the complete piece prior to, and throughout, the learning process, all participants in this study gained notable confidence and security when trying to play a new section for the first time as they were aurally familiar with the sound they were trying to achieve. Furthermore, the act of listening to a piece before learning it independently, particularly through reading notation, increased the chances of the student learning the complete piece hands together. This was a notable development in the student participants, as several of the participants only learned a single melody line independently during Cycle 1 and 2, as discussed in the previous chapters.

Discovery Learning

Bruner (1961) felt strongly that teachers should not impart knowledge onto students, but facilitate students' learning by guiding them through making discoveries for themselves through discussion, problem solving and inquiry, i.e., 'discovery learning' (Bruner, 1960; Gage and Berliner, 1998). Similarly, Creech, Varvarigou and Hallam (2020), discuss the importance of taking a student-

centred approach and facilitating ‘learning through experiential exploration’ (p. 111). This approach, they found, may positively impact students’ personal and musical growth, and help shape their narratives around musical possible selves. In the context of this study, discovery learning was found to be beneficial when learning formally and non-formally. However, learning by ear naturally incorporates discovery learning as the student must use their aural skills and musical knowledge to discover the notes for themselves and imitate what they hear, therefore it could be said that discovery learning is synonymous with non-formal learning.

Discovery learning must be more intentionally implemented when teaching and learning formally. In implementing this approach, the teacher’s role is to provide space and time for students to be their ‘own discoverers’, and to set the student up for success in this endeavour through ‘preparation of the mind’ (Bruner, 1961). In a formal approach to learning, this can be achieved, for instance, through revising relevant scales and arpeggios with the student before analysing a piece in the same key and with known harmonic progressions. This allows the student to make musical connections for themselves, and therefore increases engagement and effective learning (Gage and Berliner, 1998). This preparation, and the benefits of it, was demonstrated in Cycle 2 when I worked through relevant chords and their inversions with David prior to learning *Study in C* by Berens (See Chapter Six). As seen in this case, David made musical connections between the chords we had worked through, and those found in this piece, with ease.

Scaffolding

Scaffolding was another approach advocated by Bruner (1960; 1966). Within the framework, and the writings of Bruner, it is viewed as a complementary approach to discovery learning. As illustrated in Figure 9.4, the teacher scaffolds the students learning from the beginning with the provision of additional aural and score resources, but over time, as with scaffolding used in construction, the teacher gradually removes the scaffolds as the student gains musical knowledge, skills, and independence. Throughout the student’s learning the teacher creates scaffolded activities

by breaking each task into smaller, more manageable tasks for the student. These tasks are designed to activate the student's prior knowledge and enables them to gradually build on this knowledge and move on to more advanced ideas and concepts, ideally through discovery learning.

Scaffolded activities are helpful in enhancing students' musical development and maintaining progression (Burwell, 2005; Evans, 2015). These must be well considered and optimally challenging for the student; not so easy that the student becomes bored and disengaged, and not too difficult that the student becomes anxious and avoids completing the activity (Csikszentmihalyi, 2002; Shernoff and Csikszentmihalyi, 2009), as was seen in David when some of the activities presented to him in Cycles 1 and 2 were too far beyond his skill level at that time (See Chapter Six). An optimally challenging activity meets the student's skill level and pushes them slightly beyond it. The teacher guides and supports the student through the activity by breaking it down into manageable tasks, activating prior knowledge and building on this by reinforcing information until the student has a complete understanding of the idea. David's case study illustrates the impact of both poorly-scaffolded and well-scaffolded activities on his learning and musical independence.

Autonomy-Support

Previous research has shown that autonomy-supportive teachers have the greatest impact on increased student motivation (Chirkov and Ryan, 2001; Ryan and Deci, 2017), and this finding was reflected in this study. When teachers provide choice over what repertoire and, eventually, what approaches students implement (formal and/or non-formal) to learn such repertoire, this results in the students taking control over their learning and becoming autonomous and engaged learners. All six participants in this study showed evidence of this as the more autonomy they gained over their learning, particularly in Cycle 3 when they chose what learning approaches to implement, the more independent and engaged they became in their learning.

In addition, research shows that students who report feeling autonomous in their learning are less likely to drop out of lessons (Evans, McPherson and Davidson, 2013). This was most evident in Rita's case, where, as discussed in detail in Chapter Seven, over the course of the study, we saw her transition from a student who was close to dropping out, to someone who highly valued learning and playing piano. While the introduction of alternative pedagogical approaches and learning that there are more ways to learning repertoire than the traditional approach of predominantly sight-reading, had a positive impact on her, Rita explicitly spoke about the significant impact having autonomy over what repertoire she learned and, more importantly, the approaches implemented to learn this repertoire, had on her changed view of piano. Autonomy-support was what prevented Rita from dropping out and begin partaking in independent learning; an activity she intends to continue into adulthood.

Competence-Support

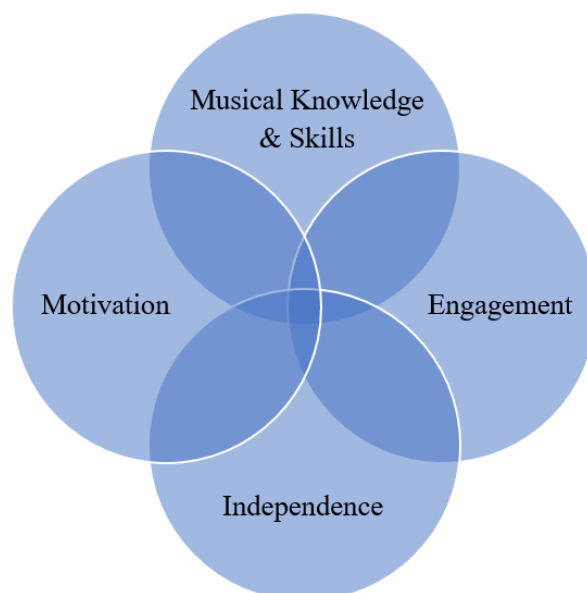
Evans, McPherson and Davidson (2013) also found that competence-support was a second factor in whether students continued taking lessons or dropped out. When students feel competent in their environment it leads to sustained engagement and more successful learning experiences and outcomes. Through the creation of interesting, optimally challenging, and well scaffolded activities, in addition to teaching students good practice strategies and learning approaches, like the ones outlined above, students' musical competence and confidence can develop. This increased musical competence and engagement can contribute to students becoming lifelong, independent learners.

In this study, it was evident that over time, as the participants gained more musical skills and knowledge, and became more confident in implementing the various approaches in their learning, both guided by me and independently, that they felt like more competent musicians. As their competence increased so did their engagement and motivation to learn, in addition to their overall enjoyment in learning and playing piano. This created a virtuous circle of learning, as illustrated, and discussed, in detail, in Chapter Eight.

Learning Attributes

The approaches advocated for in this framework each contribute to enhancing the following four main attributes: Musical Knowledge and Skills, Motivation, Engagement, and Independence, as illustrated in Figure 9.6, in varying ways.

Figure 9.6. Four Main Attributes of the Motivation for MuSIKE Model



The findings from this study, from three years of action research, illustrate the impact of using these complementary approaches on enhancing the above attributes and the enhancement of each participant's overall learning experience and musical development. While each individual approach was found to be impactful and beneficial, it was the combination of all these approaches that was most effective on the students' musical development and overall learning experience.

As stated from the outset, this is not intended to be a prescriptive framework but an adaptive and flexible framework that encourages students and teachers to move between formal and non-formal approaches, and adopt a variety of complementary approaches with these, in response to the students' learning needs and what is best suited to each specific learning context. This research recommends that teachers become familiar with all seven approaches outlined in this framework and educate students on the benefits of formal and non-formal approaches, in addition to discovery learning and active listening, and how best to implement them. By adding these approaches to our

students' learning toolkits, to draw on as needed, it will create deeper and more engaging learning experiences for them, provide them with autonomy over their own learning and enhance their motivation to learn. This should help bring them on a pathway to musical competence, independence, and ultimately a lifelong engagement with active music making.

CHAPTER 10 - DISCUSSION AND CONCLUSION

Introduction

This study sought to investigate the extent to which pedagogy, in the one-to-one piano music lesson, vis-à-vis the inclusion of formal and non-formal teaching and learning practices, impacts students' musical knowledge, skills, engagement and motivation. In particular, the study explored the co-creation of pedagogy, between teacher and student, through action research methods, and explored various pedagogical approaches to identify pragmatic, creative ways in which informal music learning practices can be incorporated into pedagogy and assessment.

The research aimed to bridge the gap between classroom and instrumental music education and enhance teaching and learning practices in the one-to-one piano lesson. Furthermore, the research focused on the intermediate years of learning piano and centres around the student voice, as this is missing from the current literature. Finally, with the paucity of longitudinal studies within instrumental music education, the study addressed this gap as the first qualitative longitudinal study, carried out over three years of learning piano, that focuses on the same students, using an action research design.

Six students, aged between eight and seventeen years old, that differed in level, ability, and musical strengths and weaknesses, participated in the study. Three cycles of action research were implemented, and four semi-structured interviews were conducted with each of the student participants pre-Cycle 1, and post-Cycle 1, 2 and 3, respectively. In addition, a final, post-Cycle 3, semi-structured interview was conducted with parents to capture their views of their child's piano learning and development. In analysing the data, the following key findings emerged; 1) combining formal and non-formal pedagogical approaches can positively impact students' capacity for independent learning, and the development of musical knowledge and skills; 2) an optimal learning environment may be created through structure, well-scaffolded and optimally challenging activities,

and a discovery learning approach; and 3) motivation and engagement can be enhanced through pedagogy, and autonomy- and competence-supportive teaching practices.

In this chapter, I provide a summary of these findings, and the key themes that emerged from the data, and discuss how these pertain to the research questions and the related literature discussed throughout the thesis. Limitations of the study, in addition to implications for teachers, and recommendations for practice, teacher training, and professional development, are discussed. Finally, recommendations for future research and closing comments are presented.

Summary of Findings

The overarching research question asked, how can pedagogical approaches that include both formal and non-formal learning practices enhance musical knowledge, skills, engagement, and motivation for learning in one-to-one piano education. Through analysis of the data collected through the action research design, and the interview data from the student participants and their parents, the findings suggested that all participants' musical knowledge and skills developed significantly over the course of this research. Furthermore, the participants became more motivated, engaged, and independent learners, as their autonomy and musical competence increased.

Chapters Five, Six and Seven in this thesis illustrated key teaching and learning moments over the three years of action research, and the impact alternative pedagogical approaches, both formal and non-formal, had on students' musical development, motivation, engagement, and independence. This was presented in the form of three case studies, which demonstrated the co-creation, development, and implementation of pedagogy over the three years of action research, and the direct effect, both positive and negative, that each teaching and learning decision had on these students. Ultimately, a significant improvement in both teaching and learning was demonstrated in these chapters.

Ann's case study highlighted the complementary nature of both formal and non-formal approaches and how they can work together to successfully learn a range of repertoire, more deeply

than using individual pedagogy. In Chapter Six, David's case study demonstrated the importance of creating an optimum learning environment, which included both formal and non-formal pedagogical approaches, optimally challenging and scaffolded learning activities, facilitated discovery learning, and structure. Rita's case study, in Chapter Seven, exemplified the impact of employing a range of alternative pedagogical approaches on her motivation and engagement to learn. Moreover, the autonomy she gained during Cycle 3, as she became more in control of what and how she learned, had a profound effect on Rita's overall perception of piano and, not only prevented her from dropping out of piano lessons, but resulted in piano becoming an important part of her life as she discussed wanting to share her experiences with others through eventually teaching piano.

Chapter Eight provided the collective student voice, as the interview data collected from four rounds of interviews conducted with each participant, was brought together here, and discussed in relation to the research questions. This chapter illustrated how students perceived improvement of their aural skills, as they gradually learned increasingly difficult repertoire by ear over time; improvement of their reading skills, in addition to the importance they placed on this as they began to enjoy reading notation more due to the new approach of analysing the music. Furthermore, as the students made more musical connections, both aurally and visually, their knowledge of harmony and musical theory was significantly enhanced.

The Development of Musical Knowledge and Skills

Aural Skills

The aural skills of all six participants developed significantly throughout this research, and this development was directly attributed to the implementation of the HeLP approach. Key developments observed by the participants from using this non-formal approach were in their aural, memory and performance skills, in addition to enhanced critical listening skills and as they began to observe patterns and harmonies in other music and make musical connections between what they

read and what they could hear using the advancing musical knowledge, understanding and aural awareness.

Although it took several weeks for some students to adapt to using such a different pedagogical approach to learning, and the newfound autonomy that came with this non-formal approach to learning, each student thrived as their aural skills developed, and they became more comfortable with the approach. This was demonstrated in the case studies of Ann and David, in Chapters Five and Six, respectively, where we saw their confidence and independence grow over the weeks. This culminated in Cycle 3 where they both independently learned large sections of a range of pieces (popular, classical, and contemporary classical) by ear.

Chapter Eight illustrated the students' experiences of learning by ear and provided excerpts from their accounts of using this approach throughout the three cycles of action research. As discussed in Chapter Eight, in addition to notable improvements in their aural skills and their enjoyment and growing confidence with independently learning by ear, many of the participants reported hearing the music in their head as they played, and how this deep aural knowledge of the piece had a positive impact on their performance. This, they noted, appeared to prevent memory lapses, and Feargal, in Cycle 2, described getting into a state of flow when playing the piece he learned by ear (Csikszentmihalyi, 2002).

Notation Reading Skills

In the beginning, most of the participants reported feelings of boredom and frustration when reading notation, and while they considered it an important skill for independent learning at this stage, no student reported any feelings of enjoyment when learning new repertoire in this way. For them, it was simply a means to an end. This finding was problematic as research has shown that boredom and disengagement in instrumental lessons often leads to dropout (Evans, McPherson and Davidson, 2013; Evans, 2015; Gerelus *et al.*, 2020).

However, the enhanced aural and critical listening skills had an important, and somewhat unexpected, impact on the students' musical reading skills, and the importance students placed on these skills, in addition to declining reports of boredom and increased engagement with reading. This was particularly noted in Ann's case study in Chapter Five. At the beginning of this research, and throughout her learning up to this point, Ann tried to avoid reading notation – it was her least favourite activity in learning piano. However, as her aural skills increased, and more importantly, as I placed more of an emphasis on building aural familiarity with repertoire prior to learning it, I observed that Ann became more engaged in actively reading notation. For Ann, having this aural knowledge of the piece provided a sense of security that what she was playing was correct; she could make connections with the patterns she saw and what she could hear in the music. This was echoed by several of the other participants who also became increasingly engaged in reading notation as the study progressed and who noted the positive impact listening to pieces, regardless of the approach employed, had on their learning.

Making Musical Connections

The formal analytical approach implemented in this study also had a significant effect on students' reading skills, musical knowledge and understanding. As the students made more musical connections and built up their musical knowledge in this way, they became more comfortable and confident with identifying patterns in the music and analysing the harmonic structure of the piece. The connections made with the various harmonies found in their pieces and the chords that they hear in popular music, in addition to the scales and arpeggios they learn and perform in their examinations, made all this learning more relevant and meaningful for them, and therefore enhanced their engagement and motivation to learn in this way. In addition, the participants discussed the benefits of thinking of chords as 'one unit' instead of individual notes that previously seemed meaningless to them. Furthermore, all students reported having a deeper understanding of pieces that they learned through musical analysis and, although sometimes they felt this approach

took longer, they noted how they would not forget a piece when it was learned in this way, and, like learning by ear, they felt it aided in providing a strong memory of the piece when they performed.

Enhanced Student Engagement and Motivation to Learn

High student dropout rates from instrumental music education have been noted in the literature and have been attributed to students' basic psychological needs not being met and low levels of motivation and engagement. Students reported feelings of low musical competence as these students had a perceived lack of musical ability, or that they were not sufficiently challenged and often felt bored, in addition to having no autonomy over their learning or feeling pressured by their parents to learn an instrument. Furthermore, some student 'dropouts' reported negative relationships with their teachers (Evans, McPherson and Davidson, 2013; Evans, 2015).

Research in classroom music has pointed to alternative ways of engaging and motivating students through the inclusion of pedagogical approaches influenced by the informal learning practices of popular musicians (Green, 2008; 2002; Hallam *et al.*, 2009; Hewitt, 2018; Wright, 2016; 2008). Therefore, to enhance student engagement and motivation to learn in the piano lessons, alternative approaches were implemented in this research, one of which was based on the benefits found in these studies. As mentioned above, the inclusion of non-formal learning approaches had a significant impact on the six participants' engagement and motivation to learn, in addition to the benefits to their musical development and enjoyment of learning piano.

Moreover, the inclusion of autonomy-supportive teaching practices, where students were given increased control over their learning as the research progressed, and competence-support through the facilitation of discovery learning and optimally challenging, scaffolded activities, had a significant impact as the students took more ownership of their learning; something they have not been allowed to do in most, if not all, other educational contexts. This, created a virtuous learning circle of engaged learning, enhanced musical competence, enhanced autonomy, and increased

intrinsic motivation to seek out new challenges (See Figure 8.1. in Chapter Eight for an illustration of this).

Encouraging students to discover new things for themselves has been shown to stimulate cognitive activity, improve the effectiveness of learning, foster independent thinking and gets students more engaged in their own learning (Gage and Berliner, 1998). This research reveals that students enjoy being in control and having autonomy over their own learning and are much more likely to retain new information if they have discovered it for themselves through logical thought and reasoning. Therefore, while it may be much quicker to do so, the findings discussed above highlight the importance of teachers not imparting knowledge *to* students, but instead, taking the alternative route of providing opportunities for discovery learning in a scaffolded way. As the findings of this study suggest, such approaches to piano teaching and learning can lead to deeper learning and understanding, as well as increasing the likelihood of intrinsic or well-internalised extrinsic motivation in the long-term (Ryan & Deci 2017; Bruner 1961). Furthermore, the findings of this research, as illustrated in David's case study in Chapter Six, suggests that the provision of optimal challenges, structure, and scaffolded activities can enhance student motivation and engagement.

Student Capacity for Independent Learning

As the data show, formal and non-formal skills were of equal importance for independent learning. While each student had their preference, with most enjoying the learning by ear approach most, they all felt that a range of skills and a good understanding and knowledge of music theory were required to be a well-rounded, independent learner. From the beginning of this research an equal emphasis was placed on formal and non-formal in an effort to avoid a potential dichotomy between the two approaches, and therefore the students' skills in both developed simultaneously.

Interestingly, when given autonomy over the approaches they employed in Cycle 3, all students, despite their preferences, opted to employ both formal and non-formal approaches to learn

new repertoire. Moreover, most students independently learned large sections or complete pieces of optimum difficulty for their ability and level during Cycle 3 using a combination of learning by ear, musical analysis and reading. This demonstrated a capacity and propensity for independent learning that was unexpected at this stage and emphasised the importance of both formal and non-formal skills for this. The students' accounts of their independent learning highlighted how these approaches complemented one-another, with one approach aiding in the learning of certain sections where another approach may not have been as suitable. Furthermore, this demonstrated that the students were able to determine what approach suited a variety of learning contexts. They were undoubtedly beginning to think like independent musicians.

Limitations

As with all small-scale studies, there were some limitations. Qualitative research has been criticized for being too subjective (Atkins and Wallace, 2012), and the lack of generalizability of the findings due to the often-small sample size involved (Creswell and Poth, 2018). However, this study prioritised depth over breadth, and while the approaches that worked in these cases may not work for other students and teachers, there are strong indications that the evidence and literature suggest these approaches may produce similar findings in other contexts.

While six is a relatively small sample size, the heavy workload involved in the role of teacher-researcher; preparing for each individual lesson; making recordings (HeLP approach), creating additional preparatory material (analytical approach); and keeping notes and analysing audio recordings after each lesson, prohibited a larger sample size. Six was found to be a manageable number of participants, yet, still allowed for a varied sample which provided a rich source of data.

Another potential limitation is practitioner-researcher bias, however all research, including this study, acknowledges positionality and the need for reflexivity in the process of data gathering and analysis. Recognising this limitation (Creswell and Poth, 2018), a range of data sources

including researcher diary and the perspectives of parents were triangulated to authentically investigate whether these pedagogical approaches had an impact on students' musical development and motivation to learn. On reflection, I would argue that my role as teacher-researcher enabled an in-depth authentic knowledge of the students' musical needs and interests which was important in the creation of resources and activities within the lessons, in addition to the initial approaches implemented.

Implications & Recommendations

Implications

The needs, interests, and priorities of students have changed over recent decades. However, teaching practices within the one-to-one lesson have not adapted to these changes in the same way classroom music teaching practices have. Instead, teaching practices have remained relatively unchanged since the mid-nineteenth century, when teachers began to place a weighted importance on formal pedagogical approaches which focus on literacy, performance, and technical proficiency, often to the detriment of informal skills such as learning by ear and improvisation (Gellrich and Parncutt, 1998). In addition, piano teaching still tends to follow the predominantly teacher-led, master-apprentice model (Slawsky, 2011).

The findings from this research have highlighted the many benefits of implementing a student-centred approach to teaching which incorporates a range of pedagogical approaches, both formal and non-formal, and which focus on creating well-rounded, musically competent students with the skills and motivation to partake in independent, lifelong learning. Furthermore, it has highlighted the need to take the focus away from the examination, and no longer let these dictate our teaching or become the sole curriculum for the year. Instead, when the focus shifts to the teaching and learning process and preparing students for lifelong learning and engagement in music, rather than just the end-of-year examination outcome, a more rich and beneficial teaching and learning experience can occur which better meets the needs and interests of the students.

As outlined above, this research benefited me, the practitioner-researcher, in terms of my own professional development, advanced pedagogical content knowledge, pedagogical practices, and reflective capacity. In turn, I would argue that these developments have positively impacted the participants of this study and other students of the researcher. The students benefited from enhanced pedagogical approaches and their teacher obtaining a greater understanding of their musical interests and needs. Furthermore, as students reported increased enjoyment in learning, both inside and outside of their lessons, and began to demonstrate a tendency to partake in independent learning outside of the content learned in the piano lesson, it is believed that this indicates the start of a long life of independent learning and active music making, therefore reducing the chances of students dropping out and ceasing to play.

Although this research focused on piano students in one-to-one lessons, this study has made a significant contribution to instrumental pedagogy in general, and the findings would suggest that the pedagogical approaches and methods employed in my teaching may be equally impactful in a range of one-to-one and small group teaching and learning contexts. Other practitioners and their students who adapt these approaches in their own teaching and learning practice may potentially have the same, or similar, positive outcomes, regardless of instrument or genre.

Recommendations for Practice

This research provided an in-depth investigation into alternative pedagogical approaches in the one-to-one piano lesson and discovered the significant impact introducing non-formal pedagogical approaches, such as learning by ear, can have on student engagement and motivation to learn, in addition to the development of musical skills and knowledge, particularly aural skills. Furthermore, alternative formal approaches which focus on musical analysis and making connections between various musical ingredients, in addition to discovery learning and well-scaffolded and optimally challenging activities, were found to be highly beneficial for students' development and musical competence.

This research recommends the implementation of a new pedagogical model for practitioners, which was presented and discussed in detail in Chapter Nine. This pedagogical model, called the Mo-MuSIKE Model, emerged from the empirical data in this research and the literature that supported it. The model includes a range of approaches, such as those mentioned above, for practitioners to use and adapt to their own teaching and learning context. The model aims to enhance teaching and learning in the one-to-one piano lesson through the implementation of a variety of pedagogical approaches, both formal and non-formal. However, as mentioned previously, due to the flexibility of this model and the approaches included in it, the MO-MuSIKE model has the potential to be effective in the teaching and learning of all instruments. These approaches, when used individually or simultaneously, are found to develop a range of musical knowledge and skills, enhance student engagement and motivation to learn, and increase their capacity to partake in independent learning. Furthermore, these approaches, when used in a competence- and autonomy-supportive way, may have the potential to reduce student-dropout and keep students engaged in playing piano for longer, as the case study of Rita in Chapter Six suggests.

Teacher Education and Professional Development

This research is important for student teacher training at third level, and the findings provided can be used to inform the content of pedagogical courses in Higher Education Music courses. Research has shown that many of these courses prioritise building student teachers' content knowledge and analytical skills, both of which are important for teachers (Lennon and Reed, 2012). However, in some institutions there seems to be less importance placed on pedagogical content knowledge, or the teaching process (Lennon and Reed, 2012; Shulman, 1986; 1987). While some institutions do provide excellent modules on pedagogy in their courses, for example the MTU Cork School of Music and TU Dublin Conservatoire of Music, in the Irish context, these are typically elective modules with many students not electing them (for example I was only one of two students who

elected to take these pedagogy modules in our final year, despite many going on to teach their instrument in some capacity).

With often such a low percentage of students electing to take these modules, and the provision of such modules not included in all music courses, it is, then, uncertain if those who qualify from such courses have a formal knowledge of teaching and learning strategies or educational theory when they become teachers. Therefore, it is vital that these courses are designed around pedagogical content knowledge, and that student teachers are provided with a variety of approaches, both formal and non-formal, that will best meet their students' needs (AEC, 2010). One way, Shulman (1987) suggests, is through the provision of highly-contextualised, cases of exemplary teaching, such as those provided in Chapters Five, Six and Seven of this thesis, which student teacher may study.

It has been established that many students go on to teach after they complete their degree in music, but have no formal teacher training, whether available to them or not during their course. Therefore, there is a lot of responsibility on their instrumental teacher, as these students will most likely emulate their teacher's approaches when they begin teaching (Pitts and Davidson, 2000). It follows that, if pedagogy modules are not an option for these students, instrumental teachers could be provided with more training to help equip their students with, not just effective practice strategies, as advised in the literature (Burwell and Shipton, 2013; Hallam, 1998; Hallam, Rinta, *et al.*, 2012; Jørgensen, 2000; Pike, 2017a; Pitts and Davidson, 2000), but also pedagogical content knowledge and how to employ these strategies in their own teaching and learning. Furthermore, as the literature on teaching and learning strategies, discussed in detail in Chapter Two, highlighted the fact that many instrumental teachers in Higher Education courses do not have any formal teaching training themselves (Burwell, 2005; Gaunt, 2008), but gained their positions because of their excellent performance abilities and careers, this is a potential area to be addressed. I would suggest that these teachers could be encouraged to attend workshops on various topics around teaching and learning to enhance their own teaching practice.

Previous research illustrated the importance of workshops and conferences for teacher training, and found this to be the primary source of training for piano teachers (Schons, 2005), many of whom did not study any pedagogy modules as part of an undergraduate or graduate degree at university. Therefore, in addition to informing pedagogy courses in HE, this research recommends the provision of CPD to existing teachers in the form of workshops at local and national conferences, and in conservatories of music. These workshops will share the findings and the case studies from this research. The cases will provide student teachers, and experienced teachers looking to inform and develop their own practice, with valuable, real-world, highly-contextualised accounts of both exemplary and sub-optimal teaching and learning in the one-to-one piano lesson. This will contribute to the enhancement of their pedagogical content knowledge (Shulman, 1986). In addition, these workshops will show teachers practical ways of integrating theory with practice, and how we can use research, like this, to inform our practice.

Secondly, the findings from this research, and the new pedagogical model created, is intended to inform instrumental music examination boards, and encourage them to consider a variety of pedagogical approaches, both formal and non-formal, when designing their syllabi and choosing repertoire and content. Furthermore, as instrumental music teaching is often conducted in a bubble, examination boards, such as the RIAM, constitute one musical point of contact that teachers seek for teaching guidance outside of their own practice. Therefore, it is recommended that examination boards do more to encourage the teachers who submit candidates for these examinations to partake in the aforementioned CPD workshops in pedagogical approaches, and similar, to enhance their teaching practices and open themselves up to new ideas and alternative ways of teaching and learning which will benefit them and their students.

Future research

Considering the scope and findings of this research, I recommend three areas for further research. Firstly, further research might examine other piano teachers implementing the Mo-MuSIKE model

in their teaching practices with a varied sample of students in the eight- to eighteen-year-old age-bracket. It would be interesting to compare the experiences of these teachers and their students to the findings in this study. Secondly, further research might investigate how these approaches could be implemented with beginner students, who have no musical experience prior to the interventions, and examine the development of their musical skills and knowledge over time. Thirdly, I would like to conduct a follow-up study with the same participants in the years to come to investigate the long-term impact of the alternative pedagogical approaches implemented in our lessons on their motivation and engagement in music making, and their propensity to partake in lifelong learning.

Next Steps

In addition to the future research discussed above, the next step with this research, is to create a new published resource called the Mo-MuSIKE Model, which will be aimed at practitioners. (See Appendix Q for a prototype of the logo for this). This will outline the approaches implemented in this research and provide real-life examples of how to include the various approaches in their teaching.

Concluding Thoughts

This study contributes new knowledge to the field of music education and IME in particular. Firstly, the study examined the application of non-formal musical practices to formal one-to-one piano lessons and the impact these have on students' musical skills, knowledge, and motivation to learn. Secondly, previous research tended to focus on the early years of learning an instrument or teaching and learning in higher education music specialist courses and conservatoires of music with advanced students. In contrast, this research focused on the critical intermediate years of learning piano and put the student voice in the centre of the study as it examined students' experiences of teaching, learning and pedagogy. Thirdly, this study is the first to apply self-determination theory within a one-to-one piano education context and create a new theoretical and practical model of

piano pedagogy and learning. Finally, this study represents the first qualitative longitudinal study that focuses on the same participants over three years of piano teaching and learning using an action research design – thus addressing the paucity of longitudinal research in the field.

This study presented an in-depth insight into piano students' experiences in the one-to-one piano lesson and provided a new, flexible, pedagogical model which aims to introduce practitioners to a range of pedagogical approaches and illustrate the benefits of implementing these approaches individually and simultaneously in the one-to-one piano lesson with their students. The thesis has shown that, through the implementation of a range of approaches, both formal and non-formal, in addition to a discovery learning approach, and well-scaffolded, autonomy- and competence-supportive teaching, students' musical development, engagement and motivation to learn can be enhanced.

The inclusion of non-formal pedagogical approaches was found to significantly enhance students' aural skills and critical listening skills in this study. These are two important skills, most associated with popular musicians, but that are often neglected in the traditional, formal piano lesson, which tends to be dominated by Western Classical music practices, where musical literacy and technical skills take precedence. In sum, this research has made a significant contribution to piano pedagogy research. Through the provision of practical workshops, published resources for piano teachers, and dissemination in academic journals, it is envisaged that this research will have a significant impact on piano teaching practice and, more importantly, piano learning for students.

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Appendix A: Resource Sheet – David – Cycle 1 – *Allegro* – LH

1



Musical notation for exercise 1, bass clef, showing a sequence of eighth notes with fingerings 1, 2, 4, 2, 1.

2



Musical notation for exercise 2, bass clef, showing a sequence of eighth notes with fingerings 4, 2, 1.

3



Musical notation for exercise 3, bass clef, showing a sequence of eighth notes with fingerings 3, 2, 1, 1.

4



Musical notation for exercise 4, bass clef, showing a sequence of eighth notes with fingerings 1, 2, 3.

5



Musical notation for exercise 5, bass clef, showing a sequence of eighth notes with fingerings 3, 5, 1, 2, 1.

6



Musical notation for exercise 6, bass clef, showing a sequence of eighth notes with fingerings 4, 1, 4.

7



Musical notation for exercise 7, bass clef, showing a sequence of eighth notes with fingerings 1, 4.

8



Musical notation for exercise 8, bass clef, showing a sequence of eighth notes with fingerings 3, 1, 2.

Lullaby - LH

César Franck

1

5 1 3 2 3 5 4 5 2 4

2

5 1 3 2

3

4 2 1 4

4

4 2 1 4 3 2 4

5

1 3 2 3 1 3 2 4 1

6

5 1 3 2 3 5 4 5 2 4

7

Appendix C: Overview of the Action Research Process

	Cycle 1	Cycle 2	Cycle 3
Participants	10	8	6
Timeframe	6-8 weeks	12-15 weeks	15-18 weeks
Preparation	Analysed repertoire and decided what approach(es) to implement	Analysed repertoire and decided what approach(es) to implement	Analysed repertoire – students will decide what approach(es) to implement
	Recorded riffs and burnt on to CDs	Recorded riffs and uploaded to Cadenza	Recorded riffs and uploaded to Google Drive
	Created resource sheets to aid learning	Created more considered resource sheets - easier to relate to original sheet music	No resource sheets created – students becoming more independent and need less scaffolding
	Designed interview questions	Designed interview questions	Designed interview questions
Action	6-8 weeks	12-15 weeks	12-15 weeks
	Conducted pre-intervention interview	X	X
	Implemented HeLP strategy and analytical approaches to learn a section of a piece	Implemented HeLP strategy and analytical approaches to learn 2 complete pieces	Students chose what approaches to implement in the learning of 2 complete pieces
	Students chose repertoire	Students chose repertoire	Students chose repertoire
	Scaffolded activities	Scaffolded activities	Scaffolded activities used sparingly, when required
		More emphasis on active listening when using formal and non-formal approaches	Active listening remains an integral part of learning process
		Emphasis on developing student learning strategies	
	Conducted post-intervention interview with participants	Conducted post-intervention interview with participants	Conducted post-intervention interviews with participants and their parents
Reflection	Timeframe too short	Timeframe optimal for more thorough analysis and allowed time for active listening	Timeframe optimal for more thorough analysis and allowed time for active listening
	Positive response from students	Positive response from students	Positive response from students
Reflection	All students appeared more engaged with new approaches	All students appeared more engaged with new approaches	Students' autonomy over approaches had a significant impact on engagement, motivation, and independence

(cont.)	Learning by ear and analysis worked well together in learning one piece	Active listening enhanced student's learning when using both approaches	All students continued to implement both approaches and active listening
	Pieces memorised when learned by ear or analysed, even when little practice done – deeper learning	Pieces memorised when learned by ear or analysed, even when little practice done – deeper learning	
	Fingering improved when learned by ear	Improvement in fingering observed again	Good fingering used by students
	Took several weeks for students to get used to learning by ear and find a strategy that worked for them	Students became comfortable with learning by ear and more accurate in their imitation – good strategies adopted	Students demonstrated their comfort with learning by ear when implementing this approach independently
	Some students struggled with connecting what they learned on resource sheet to the original score – this needs to be addressed	Resource sheets more successful – students had no issues making connections	Resource sheets were not required as students became more independent at analysing new repertoire
	Discovery learning not always facilitated – I often reverted to imparting knowledge	Facilitation of discovery learning improved but needs further enhancement	Excellent facilitation of discovery learning on my part – only imparted knowledge when necessary
	Riffs sometimes too long and therefore too difficult	Riffs were of an optimum length – no difficulties	Some students did not need piece to be broken down into riffs
	Sometimes pushed students too far which resulted in little progress during the week	Sometimes pushed students too far again but resolved this by week 6	Did not push students beyond their current ability – resulted in a better learning experience each week
	Use of CD's not ideal – students sometimes reluctant to listen to recordings at home	Cadenza was better but often crashed and it was difficult to find recordings from previous weeks	Google Drive was a success – easy to use and all students were more likely to listen to recordings
	Risk of novelty factor	Novelty does not seem to be a significant factor	Novelty does not seem to be a significant factor

Appendix D: Student Interview Guide – Pre-intervention – Cycle 1

1. Tell me about the things you enjoy about playing piano and things that you don't like so much?
2. What is your favourite way of learning pieces? (Reading notation, playing by ear, using online tutorials)
3. What is your favourite style of music to play on the piano?
4. Why do you like it?
5. Remember last year when we learnt some pop songs, did you find anything interesting about how we learnt those pieces? How did you feel about how we learnt them?
6. I helped you with that, but have you tried learning any similar pieces on your own since then?
7. How did you get on with that? / How come you didn't try to learn another piece?
8. What skills do you think you need to learn new pieces on your own, without the help of a teacher?
9. Do you think you have those skills now?
10. What skills do you need your teacher to help you with?
11. Imagine it is summertime and you have no lessons, but you wanted to learn a new piece on the piano. How would you start learning it?
12. If you were told that you were going to stop learning piano next week, how would you feel about that?
13. I want you to imagine that you have just finished your grade 8, what are you going to do about learning piano? What will you play?
14. How do you feel about learning a new piece by ear?

Appendix E: Parent Interview Guide – Post-intervention – Cycle 3

Thanks for agreeing to take part in this discussion with me. So, I'm going to ask some questions on how your child (name) started playing piano and what you might have noticed about their development, the music exams and then their enjoyment of music – does that sound okay to you?

1. So, let's go back to the beginning, if you don't mind. Can you tell me why your child began piano lessons?
2. Can you take me through some aspects of your child's (name) piano practise now? How does (name) go about piano practise at home? How often do they practise?
3. In your view, what do you think they enjoy practising most; for example, any particular pieces, their scales, theory, etc? Why do you think this is?
4. What don't they seem to like to practise?
5. Have you any idea what motivates (name) to play/practise?
6. Are there particular things you notice about the way they practise, or certain pieces they play more than others? Why do you think this is so?
7. As you know, I have been using different piano teaching approaches with (name) over the past 3 years. Have you noticed any changes in their practice habits, engagement in practice and/or approach to playing during that time?
8. Have you noticed if (name) tends to play by ear much when at home? Do you know if your child enjoys learning sections of exam pieces by ear? Have they passed any comments about this over the past three years?
9. Have you noticed any improvements in their musical skills over this time?
10. Have you noticed any changes in their general enthusiasm around the piano?
11. Are there other factors (inside or outside of the lesson), that you think may have also impacted on these things?
12. Have you heard (name) play pieces outside of what I teach them in their weekly lessons?
13. How important do you feel piano examinations are for your child?
14. Would you like (name) to continue partaking in graded exams / how far would you like them to go in graded exams?
15. Do you think they enjoy partaking in examinations?
16. What skills do you think are important for your child to continue playing into adulthood?
17. Do you think being able to read notation or being able to play by ear is more important for this?
18. Are you happy with (name) learning formally (e.g., reading notation) and informally (e.g., learning by ear)? Would you have a preference for one of these skills over the other? Why?
19. Are there any other areas or skills that you would like them to improve on or focus on in their lessons in the future?
20. Do you think (name) will continue to play piano into adulthood, after they finish attending formal piano lessons?
21. Can you think of anything that might increase the likelihood of them playing into adulthood? Is there anything you would like to add or comment on with regards to your child's piano education, musical development, or engagement with playing/practising piano

Appendix F: Interview transcript – Ann – Cycle 3 – Post-intervention

Intro

So, firstly, thank you so much for being part of my research over the past three years

Oh no bother at all.

And for agreeing to this final chat about your learning. I really appreciate it because three years is a long time.

It's grand.

I am going to ask some questions about your learning experience and your musical journey since you began playing piano and your plans for the future as well. So I want you to talk for as long as you need to, okay, you have loads of time and there are no right or wrong answers. The main thing is your opinion matters so whatever your answers are is fine. Whatever you say is right.

Yeah.

Does that sound okay?

That's perfect, yeah.

Q2.03.01. Okay, so firstly, we have been learning pieces a little differently over the past three years. Can you tell me about how you used to learn piano when you began lessons and how you learn piano now?

Well before like I probably just strictly from just reading it only, you know, like, not listening to what it sounds like or what it should sound like or anything like that but now, like, I definitely feel like by having it on my ear and knowing what it's meant to sound like, like the finished piece, I definitely feel like it helps a lot more, as in speeding up the process of learning it and everything.

Oh, okay, so do you notice any big difference besides playing a piece that you hadn't really heard before compared to now; knowing it before you play it? Are there any other differences as in like how you approach learning or how the lesson goes or anything?

Well I definitely see myself putting in more dynamics in places where I normally wouldn't, like, before I would just play a piece like all sounding the exact same but now, hearing it, it makes it a lot easier to know what way a person, or professional, would play it so, yeah.

Great.

Q2.03.02. Can you tell me what you liked and did not like about how you have learnt piano over that time?

Like over the time with listening?

No, even when you began as well, what you liked or didn't like.

Oh right, yeah, well I felt like it was a longer, slower process, you know, to kind of like go through all of the notes and everything and where your fingers should be and all that. Like I know you have to sort out your fingers for listening as well, but I just feel like I'd be better, you know, at learning by ear than reading it I suppose so it made it a lot easier just to do it the way with listening.

Yeah, and what about analysing the chords as well, so technically that would be more reading than listening...

Yeah.

But how did you feel about that?

Well, no, that actually really helped as well because it was kind of like notes in a group so it would be easier to remember than just reading it straight from the page I suppose, you know?

Yeah, yeah.

Q2.01. What way of learning have you found most enjoyable; reading the notes, playing by ear or analysing the chords and patterns in the music?

Definitely by ear I'd say; by listening to it.

Okay, why? Why playing by ear?

Well because like you just know what it should sound like when you're completely after perfecting it and like it motivates you to make it sound like that sooner rather than later.

Okay, so if you were reading the notes of a piece that you knew what it sounded like, would that make a difference?

Oh yeah! Like that would make it a lot easier. It's way harder to just read a piece that you've never heard before than if you know the air of it, then it makes it a lot easier.

Yeah, so what did you enjoy about it? So, say playing by ear; what was the most fun thing about it?

Well like it was different every day, you know, like the sounds, like what you were listening to, it was different every day. It wasn't just reading the same notes on the page, like. I know... I don't know, it was just a lot more enjoyable in the sense that you weren't bored, like you know how you get bored with reading a page but like you wouldn't get bored listening.

Okay, great.

Q5.01.01. Tell me a bit about learning by ear and analysing the chords in your pieces. Do you think it has changed how you understand or think about the music as you play, when you learn it that way?

Well probably, like, I tend to go away and look at the patterns more than normal now. Like, you know, before you'd just go away and play it but like now I'd kind of be analysing it more like with the patterns and what's happening like if there's octave jumps or whatever, and by listening to it as well, I tend to listen to a piece first before I'd play it, you know?

Okay, so do you think you actually end up reading more now after you learn it by ear or is it the actual patterns on the keys you're looking at?

Yeah, well I suppose I would read more because, I don't know, like I feel more confident reading sheet music now because if you listen to it before then you just know like, you know what I mean?

Yeah, so you know if there's going to be jumps or if it goes up or down, that kind of thing.

Yeah!

Q2.07.01. At the beginning you were looking forward to learning piano by ear. So, can you tell me how you feel about learning piano by ear now?

Oh well I definitely think it's very, like it's enjoyable. It's not, you know, like, long or slow or anything, you know? You kind of, like it gives yourself little goals to hit by the end of the day, by listening to this part today or, you know, another part tomorrow, because, yeah, I just felt it motivated me a lot more than just reading the sheet music.

So would you set yourself goals with reading in the same way or, before, we'll say?

No. No I definitely just do more goals with listening [laugh].

Yeah, and why do you think that is?

Because I get bored very easily so looking at a sheet of music wouldn't be as entertaining as listening to it [laugh].

Okay. Has learning by ear changed your learning experience in the piano lesson or at home?

Well I suppose it has, I suppose, yeah...

In what way, so like in the piano lesson if I put on a recording and you have to do it by ear as opposed to me telling you to play that section, is there much of a difference?

Yeah, no, I definitely feel more confident in myself with playing when I've heard it already rather than just looking at it straight because I just feel like I'm not playing it the right way or something, you know? But it's a lot easier then when you've already heard it.

Oh okay, so you feel when you play it you know it's right, is it?

Yeah, yeah, exactly.

Q2.10. In previous years I decided which way you learnt your pieces, but this year I gave you the choice of how you would like to learn each piece or the different sections of those pieces. What are your thoughts on giving students choices like this?

Oh, I definitely think it's a very good idea because it kind of puts them in control of their learning so it would motivate them more to work harder at the way they know that they're better at, you know? Okay, yeah.

Q2.11. In what ways do you think having this choice made a difference to your learning experience this year?

Oh definitely, yeah, I definitely felt like I was, like, it was my responsibility to learn it rather than waiting for somebody else to push me to do it, like, do you get me?

Okay, and do you think that is why you went ahead, like this year in particular, you went and did a lot on your own.

Yeah.

Do you think it's because I gave you that choice or

Yeah, oh definitely! I'd say that anyway because it gave me the power to know what it should listen to, or, you know, what it should sound like so... yeah.

Yeah, but we'll say even previous years if I gave you the recordings, I don't think... like you didn't really go on ahead.

No, I wouldn't really... yeah, when I think about it like that like it wouldn't really have made much of a difference, but I don't know, because it was there like up in the different sections it just made it a lot easier.

Yeah.

Q2.08.01. In the previous two years you used a CD and Cadenza to listen to the recordings at home but this year I put them on Google Drive so you could download it from there on to your phone or tablet. Can you tell me about your experience of using those three different platforms?

Well, I definitely preferred having the files on my phone because it was just a lot handier and I could connect it to my speaker then and it would just, you know, it would be a lot handier rather than the CD. Although the CD did come in handy to be fair but I definitely preferred having it on my phone and then Cadenza, I just kept forgetting about it, ugh, just some weeks it just completely jumped out of my head like but, yeah...

Yeah, yeah. Why do you think Cadenza didn't work?

I don't know, I'd say it's just me being lazy. I was probably too lazy to put in my login details and then one thing led to another I didn't do it at all, you know?

Yeah. I suppose the fact that you did have to log in probably just made it a bit more awkward.

Yeah [laugh].

Do you think if I used Google Drive in previous years you would have gone ahead in the pieces then, or, no?

Well I don't know, I feel like being with the Coronavirus and everything it gave me more time to think about what I was doing and like, you know, I didn't have to get everything done by a certain day or anything, I could kind of do it at my own ease and then I feel like that helped me to progress in it more.

Okay, okay. That's good because sometimes the opposite happens to people, you know, if you've too much time you do less. [Ann laughs]

Yeah, yeah.

Q2.12. This year we had to move our lessons online for the last 10 weeks due to Covid-19. How was this experience for you and did it impact how you learned your pieces compared to our normal face-to-face lesson?

Well, I definitely, I don't know, I felt very kind of nervous about going online. I don't know why like because it's basically the same thing but, I don't know, I just felt not as confident as I would feel in a lesson face-to-face, you know.

Okay, and why do you think that is?

I actually, I don't know like, just getting the iPad set up and making sure the Wi-Fi is okay and everything like, I don't know.

Okay, there's more pressure. Did it, in the actual lesson we'll say, make a difference in how you were learning your pieces; the fact that it was online and on your tablet instead of face-to-face?

Well, I feel like, well, I would say it wouldn't have motivated me as much but I got loads of work done during the online lessons, so I suppose it kind of pushed me to show off a bit during the lessons more than anything online.

Oh good. Because you were more nervous?

Probably, yeah, yeah.

Were there any benefits or disadvantages to being on ZOOM?

Well... just like worrying about if I didn't look alright, anything like that [laugh] but yeah that was more or less it.

Yeah [laugh], well no one else was watching so.

Yeah.

Were there any benefits do you think?

Well towards the end it was definitely very handy, you know, to just be able to sit down at my piano at home and just connect up to ZOOM then, d'you know?

Yeah, yeah, once you got used to it.

Yeah, exactly.

Q3.01.01. Have you learnt any pieces or songs on your own in the past year?

On my own, I actually learnt *Imagine* by John Lennon there during the start of isolation and then, yeah, that's pretty much it just other songs with chords and everything, you know, I'd just tip away at them.

Yeah, so you've done a good few with just the chords is it?

Yeah, like I'd definitely be more pushed now to actually learn something because I'm able to, you know.

Yeah, so how did you get on with, let's say, *Imagine*. How did you get that one?

Very good! Because it showed the chords, but it was actual sheet music then as well, so I printed it out like and I just worked away at it then. I had it in about a week I'd say.

Okay, so you printed off... what did you do, you just googled it...

Yeah, no, I have an App on my phone, I don't know what it's called, but I could just print it off from that then.

Okay, so how did it look? You said it was kind of sheet music?

Yeah, it was pure simple like, it wasn't very advanced or anything, but it was grand, you know?

Yeah, and was it left hand and right hand?

Oh, it was everything yeah, left hand and right hand, and then it kind of had the chords for, you know the chord box above every, kind of, every few bars, you know?

Yeah, very good. So do you think, did you work more off the chord boxes or left hand or

Probably more off the notes because all the notes were pretty much on the staff so it gave me more confidence to do it because I know if I saw notes that was miles above the staff or miles below the staff I'd just be too lazy to figure out what it is

Okay [laugh] and then what about learning by ear? Did you use your ear when you were learning that?

Oh I did, yeah, no I did of course because I know that song anyways off the top of my head but it definitely made a big difference between how I'd learn it if I did know it by ear and if I didn't know it by ear.

Okay, in what way, do you think?

It just, it sped up the process again so I wasn't getting bored or anything so it was grand like.

Yeah.

Q3.05. Imagine it is summertime and you have no lessons but you want to learn a new piece or song on the piano. How would you go about learning it?

Well, I'd definitely listen to it while I'm doing other things like maybe cleaning the house or whatever, I'd listen to it on headphones or whatever, and then I suppose the day after I'd try and have a go at it just by ear and not looking at any sheet music and then I suppose eventually I'd download the sheet music, print it out and then just go from there.

Okay, very good.

Q3.02.01. So, you mentioned before, a couple of years ago, that some skills help you learn without the help of a teacher. What are these skills and how would they help you to learn piano on your own?

Well, I don't know, I feel like I've a very strong ear so that would help me, you know, to memorise things; I'm decent enough at memorising things, so I feel like that would help me a lot as well.

Cool, so mostly by ear do you think?

Yeah and memory.

Q1.02. So, what is your favourite style of music to play on the piano?

Oh, any style?

Yeah.

Oh, probably jazz. I really liked learning *Take 5*.

Oh great, okay. Have you tried to learn any other jazz pieces?

No... [laugh]

Why is that?

I don't know, I feel like I'd be able to play a song a lot faster if it had words because it would just give me a melody line to work off. I know that Jazz pieces have melody lines as well but I feel like if it had words it would help me to memorise it a lot more.

Yeah. So, what do you like about Jazz?

I like the way it's all bouncy and jumpy and like loud in some places and then very soft in other places and, yeah...

Yeah, and would you listen to Jazz much on your own let's say on YouTube or Spotify?

Well, I wouldn't listen to it on a daily basis but often I'd throw on a bit like if I was cleaning or doing homework. If I was doing my homework now, I'd definitely put some of it on but, yeah, more or less that would be it.

Yeah, okay.

Q4.05. I want you to picture yourself playing piano in 10 years' time. How might you see yourself playing the piano then? So, at work or for leisure?

Probably for leisure more than anything but like I'd see myself giving the odd few lessons to people that I'd know, that are local or whatever like, you know, I wouldn't really be, you know, working in a proper music school I suppose. I'd just do it from home or whatever.

Yeah, so why do you think you, why do you see yourself doing a little bit of teaching?

Well, I'd probably be more comfortable with my own piano or whatever and I just feel like, like I wouldn't want to go into that for a full-time job. I just don't think that it would be for me, you know, in the long run.

Yeah.

But I would definitely, definitely keep it up for leisure throughout my life.

Yeah, great.

Q1.07. What advice would you give another student if they were learning piano for the first time?

Well, I'd say definitely anyway that if you get bored just keep going because that's one thing that definitely stopped me, from just boredom, completely just forgetting about it and just stopping practising everything. I would just say to just keep going.

Yeah, and what made you bored, or what did you find boring?

I don't know, I'd say just after school, practising late at night I'd just be bored and just want to get to bed and whatever like, you know, I'd say to practise early in the morning if you can.

Yeah.

Q1.08. What advice would you give piano teachers if they asked you for tips on piano teaching?

Well definitely before you're learning a song with someone I'd definitely say to throw it on, on YouTube or whatever, like we do, like normally. I feel like that would help with memorising it and everything.

Yeah.

Q1.09. What advice would you give teachers to help students become more independent and to improve their learning experience, so to make it more fun, in the lesson?

I would say set goals for every week and then like, you know, to say have this many scales done this week, or this many bars of a piece done, or listen to this much of a piece. Do you know what I mean?

Yeah, and do you think that would make them more independent? So, like how you are now, how you learn bits on your own?

Yeah, I suppose if they were more motivated to be independent they'd kind of work away on their own rather than waiting for somebody else to do it for them like, you know?

Okay, so the teacher would set goals for them and then they'll...

Yeah, work away and then try and go above that goal then, you get me?

Yeah, okay, so encourage them to do their own, even set their own goals I suppose.

Yeah! Yeah, exactly.

Q2.09.01. This research project is finished now but we can continue using whatever ways of learning you like next year. How would you like our lessons to go next year?

Oh, definitely by ear! A lot of it by ear anyways.

Okay.

Yeah [laugh].

And what about reading and

Oh yeah! Reading as well and analysing the chords and the patterns and everything, that would help an awful lot as well.

Okay, so do you want to stick with what we've been doing for the last few years?

Yeah, I suppose [laugh] a bit of everything, yeah.

Are there any changes that you would like to make?

No, not really. I have to say I'm very happy like with where I am now, you know, before the summer and everything.

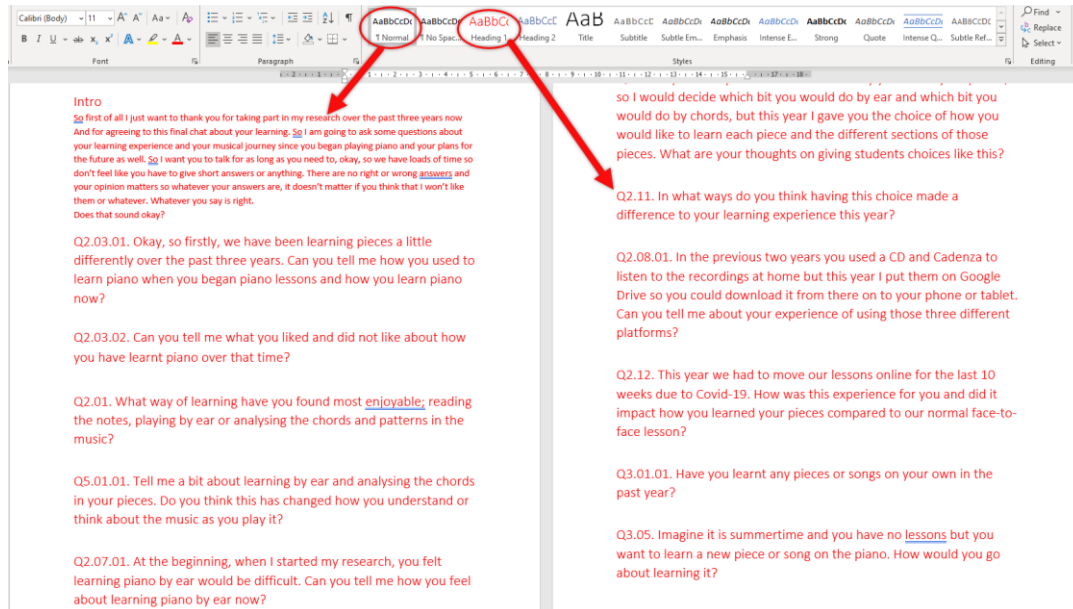
Yeah, okay, perfect. Is there anything else you want to add?

No, I'd say that's it now.

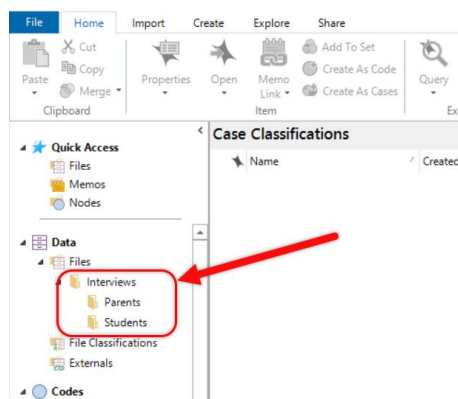
Okay, perfect. Thank you so much!

Appendix G: NVivo Step-by-Step Analysis Process – Initial Set-up of Interview Data

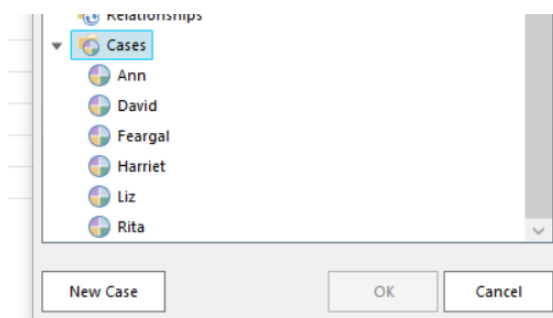
1. Interview transcripts were prepared with Heading Styles (Heading 1 & Normal). The questions were divided into 5 categories: 1) Value, 2) Learning experience, 3) Musical Skills, 4) Lifelong Learning, 5) Musical Knowledge, and numbered appropriately.



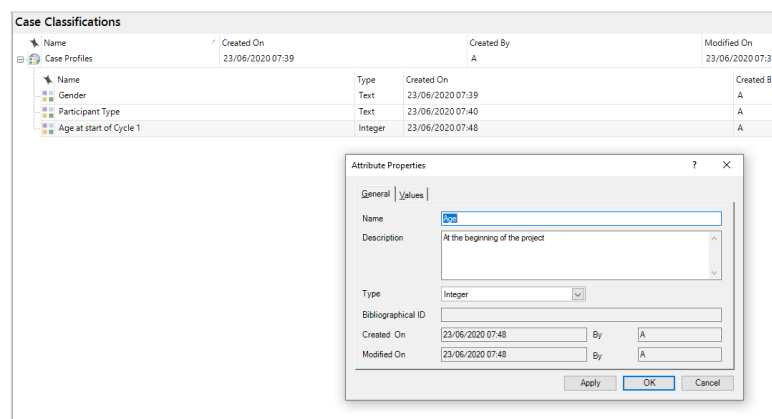
2. Set up folders for sources e.g. Interviews > Students



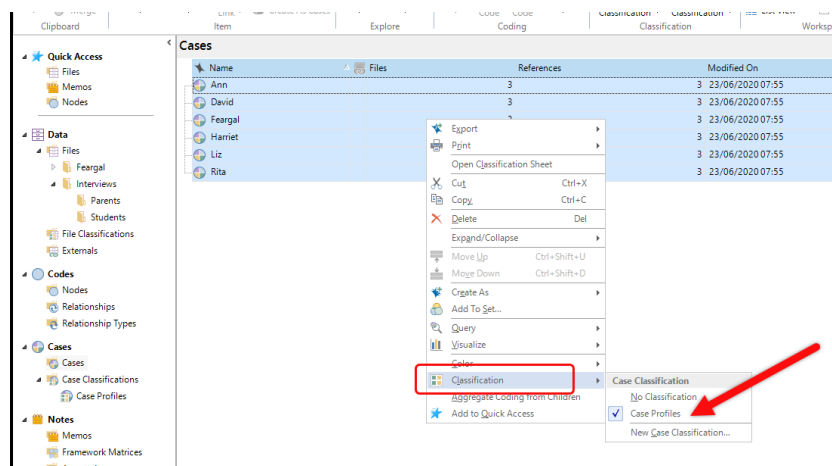
3. Imported interviews into folder and assigned them to their own individual case nodes



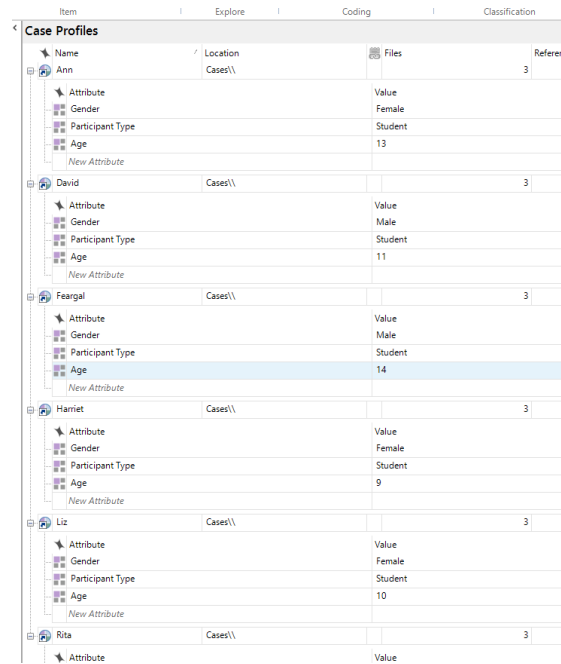
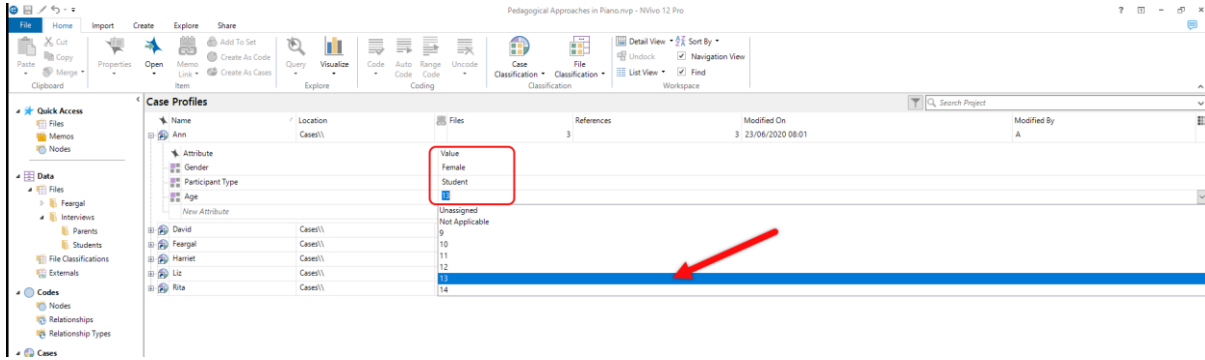
4. Set up and assigned attributes. This was an initial data management technique recommended in the literature. In educational qualitative studies, in particular those involving children and adolescents, they suggest there are ‘marked differences between the ways children of both genders process information’ (Saldaña, 2013, p. 72). Therefore, these attributes were assigned to help identify any marked differences.
 - a. Gender
 - i. Male
 - ii. Female
 - b. Participant Type
 - i. Student
 - ii. Parent
 - iii. Teacher researcher
 - c. Age (at the beginning of the project)
 - i. 9
 - ii. 10
 - iii. 11
 - iv. 12
 - v. 13
 - vi. 14



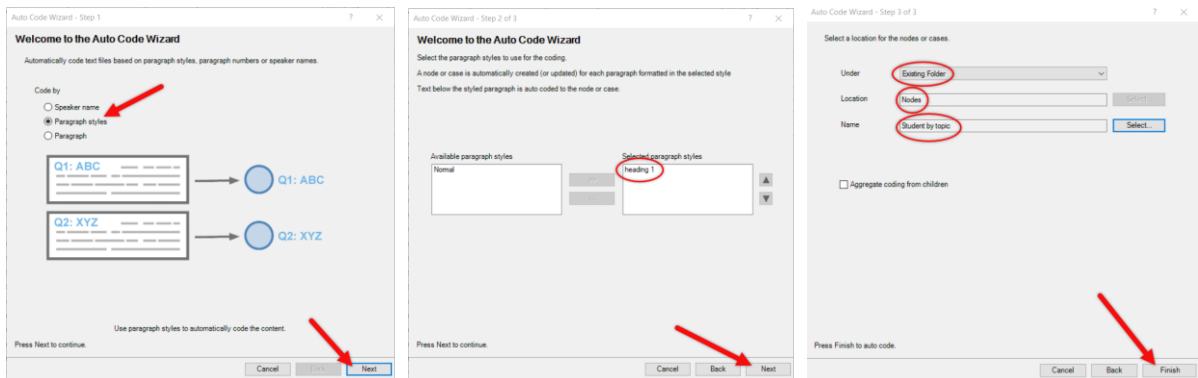
5. Linked the classification sheet to the cases



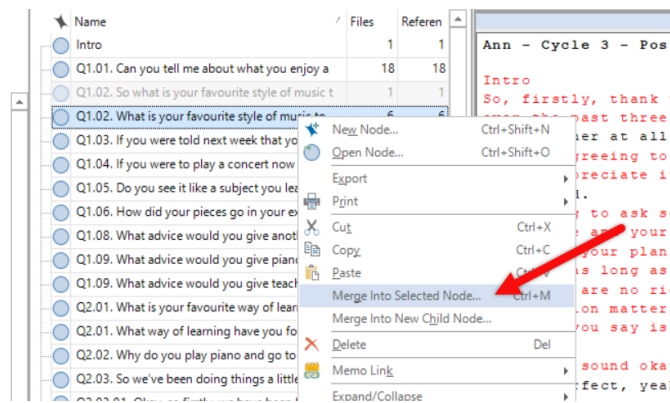
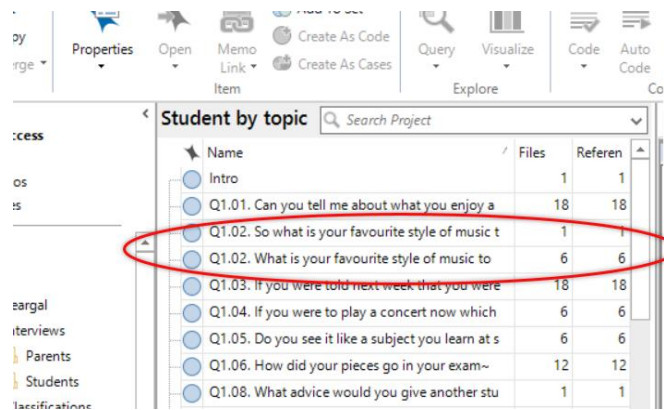
6. Populated the cases with the relevant information on a case-by-case basis



7. Auto coded interviews. This is a form of structural coding which allowed me to examine and compare multiple participants responses to the same question with ease in NVivo. ‘Using the autocoding facilities offered by software in this way makes good sense in that it deals very efficiently with the rather tedious task of this type of routine coding, leaving you more time to work through and think in detail about the content of the responses’ (Bazeley, 2021, p. 205).



8. Merged relevant nodes with inconsistent wording together by cutting the node that is different and selecting the node I wished to merge it with, then clicked 'merge into selected node'. This left a clean, organised list of questions from the 4 rounds of interviews, ready for manual analysis.



Name	Files	Referen	Created	Created	Modifie	Modifie
Intro	6	25/01/	A	25/01/2	A	
Q1.01. Can you tell me about what you enjoy about playing piano~	18	18 23/06/	A	24/06/2	A	
Q1.02. What is your favourite style of music to play on the piano~	12	12 23/06/	A	25/01/2	A	
Q1.03. If you were told next week that you were going to stop going to piano lessons, how would you feel~	18	18 23/06/	A	24/06/2	A	
Q1.04. If you were to play a concert now which piece would you play~	6	6 23/06/	A	23/06/2	A	
Q1.05. Do you see it like a subject you learn at school~	6	6 23/06/	A	24/06/2	A	
Q1.06. How did your pieces go in your exam~	12	12 23/06/	A	24/06/2	A	
Q1.07. What advice would you give another student if they were learning piano for the first time~	6	6 25/01/	A	25/01/2	A	
Q1.08. What advice would you give piano teachers if they asked you for tips on piano teaching~	6	6 25/01/	A	25/01/2	A	
Q1.09. What advice would you give teachers to help students become more independent and to improve their learning experience in the classroom~	6	6 25/01/	A	25/01/2	A	
Q2.01. What is your favourite way of learning pieces~	24	25 23/06/	A	24/06/2	A	
Q2.02. Why do you play piano and go to lessons~	11	11 23/06/	A	24/06/2	A	
Q2.03. So we've been doing things a little differently lately; we learnt a little by ear and by learning patterns first. Is there anything you liked about learning those ways	18	18 23/06/	A	24/06/2	A	
Q2.04. Did you find either of those ways challenging~	12	12 23/06/	A	23/06/2	A	
Q2.06. Do you think you learnt faster or slower~	10	10 23/06/	A	23/06/2	A	
Q2.07. How would you feel about learning a new piece by ear~	17	17 23/06/	A	24/06/2	A	
Q2.08. Did you have any issues with playing with the CD~	17	17 23/06/	A	24/06/2	A	
Q2.09. Which ways of learning would you like to continue using~	18	18 23/06/	A	24/06/2	A	
Q2.10. In previous years I decided which way you learnt your pieces, but this year I gave you the choice of how you would like to learn each piece and the different sec	6	6 25/01/	A	25/01/2	A	
Q2.11. In what ways do you think having this choice made a difference to your learning experience this year~	5	5 25/01/	A	25/01/2	A	
Q2.12. This year we had to move our lessons online for the last 10 weeks due to Covid-19. How was this experience for you and did it impact how you learned your pi	6	6 25/01/	A	25/01/2	A	
Q3.01. So have you learnt pieces on your own on piano~	18	18 23/06/	A	23/06/2	A	
Q3.02. What skills do you think you need to be able to learn pieces on your own~	14	14 23/06/	A	24/06/2	A	
Q3.03. Do you think you have the skills now to learn pieces on your own~	10	10 23/06/	A	23/06/2	A	
Q3.04. What skills do you think I need to help you with~	11	11 23/06/	A	24/06/2	A	
Q3.05. Imagine it is summertime and you have no lessons but you want to learn a new piece or song on the piano. How would you go about learning it~	12	12 25/01/	A	25/01/2	A	

Appendix H: Codebook – Nodes//Phase 1 – Open Coding

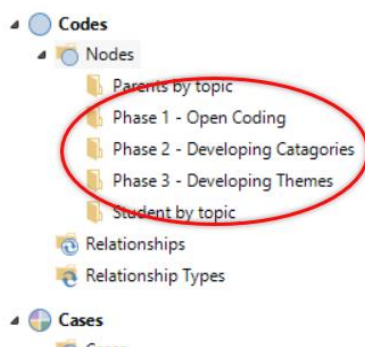
Name	Description
Autonomy	Student having a choice or taking charge of their own learning, for example, the content and/or the approach to learning
Autonomy, lack of	Occasions when the student had no control over what or how they learn – someone else decides for them
Benefits of playing piano	Anything about playing piano which students see as adding value to their lives or the lives of others
Boredom	Being bored with playing piano or a way of learning piano
Challenge	Finding something challenging, either a learning approach or developing a musical skill
Change	Comments on changes in learning or teaching approaches, both positive and negative. Something being 'different'.
Composing	Students making up their own pieces or suggestions of them composing
Confidence	Showing confidence in their ability to learn pieces either on their own or with a teacher
Confidence, lack of	Showing a lack of confidence in their ability to learn, either with a teacher and on their own
Covid	Anything to do with Covid, particularly its impact on learning
Dominant Ideologies	Evidence of students being influenced by dominant ideologies i.e., the importance of notation and literacy over ear playing and improvisation or compositional skills
Enjoyment	Something fun, interesting, or enjoyable to the student with regards to piano. What they liked
Exams	Partaking in or preparing for exams, both RIAM and Pop. Suggestions of how far they wish to go in their exams
'Finish it off'	In Vivo Code - Getting to Grade 8 or Diploma level with exams, or as Ann said "finish it off"
Nerves	Nervousness or anxiety about exams, either in preparation for it or during the formal exam. Also, any changes in nerves when it comes to exams e.g., used to be nervous but not anymore.
Pop Exams	Notable comments on sitting or preparing for the popular music examinations.
RIAM	Notable comments about sitting or preparing for the Royal Irish Academy of Music examinations
Familiarity	Being familiar with a piece prior to learning it, either from listening to it privately at home or with friends, e.g., pop music, or listening to it for a short time prior to learning a new piece. This can also include being unfamiliar with a piece prior to learning it and the effects this had on learning
Future plans	Any mention of what students see themselves doing in the future, either still playing piano or not.
Becoming a well-rounded musician	Any reference made to being good at both reading and playing by ear when an adult and finished formal piano lessons.
Not playing piano	When a participant mentions not playing in the future, as an adult or after formal lessons cease
Play professionally	Getting paid to play piano, such as performing at weddings, funerals or at a hotel as background music

Playing for leisure	Playing piano in the future for the student's own enjoyment, benefit and/or wellbeing. Only playing for others in an informal setting like family and friends. Not paid performances
Teaching	Teaching piano in either one-to-one lessons or using it in a teaching environment e.g., as a primary school teacher accompanying a choir
Genres	Pop, Rock, Classical, Jazz, Traditional music, etc.
Goals	Setting goals while learning piano. This does not include students mentioning their future goals for learning piano, for example to become a teacher, as this is covered under the 'future plans' node.
Independence	Skills needed to be or become independent at learning piano. Anything that shows a student is, or is becoming, independent.
Knowledge	Obtaining or having musical knowledge including aural knowledge like playing a piece from memory, understanding a piece and its structure or character, or sharing knowledge with others
Deep knowledge of piece	Being able to start at any point in the music, understanding the structure of it, playing from memory
'Hear it in my head'	Students mentioning how they can hear the music in their head as they play
Playing from memory	Learning a piece from memory and being able to play without notation
Sharing Knowledge	Teaching others in the future because of a desire to share what they know, or helping friends with piano now, like showing them how to do play chords
Learning Approaches	References to different approaches to learning piano such as learning by ear, through notation or by analysing the music (chords and/or patterns)
Combination of approaches	Combining two or more approaches, e.g., learning by ear and reading notation
Learning by chords or analysing the piece	Learning a piece or section of a piece by analysing it, figuring out the chords and/or any patterns in the piece, either in the piano lesson with the teacher or independently
Learning by ear	Learning a piece or section of a piece by ear, either in the piano lesson with the teacher or independently
Learning by notation	Learning a piece or section of a piece by notation, either in the piano lesson with the teacher or independently
Rote Learning	Copying/imitating a teacher or a YouTube tutorial, predominantly visually, when learning a piece
Lifelong Learning	Continuing to play piano and learn new pieces as an adult, after formal lessons cease
Listening	Listening to other people play piano and/or noticing detail in their performance of the piece such as varied dynamics. Listening to a piece or section of a piece, including when trying to learn it; either exam pieces or own chosen leisure pieces.
Making Connections	Connecting two or more musical elements or approaches to learning, e.g., knowledge of arpeggios with the harmony in a piece of music
Motivation - Extrinsic	Anything which suggests that the student is playing for external reasons and is motivated by praise, rewards, exams, or the potential to make money
Motivation - Intrinsic	Anything which suggests that the student is playing for themselves and is intrinsically motivated to play/learn piano
Musical Values and Interests	What students feel is important to them about playing and listening to music, and what interests them to play and/or listen

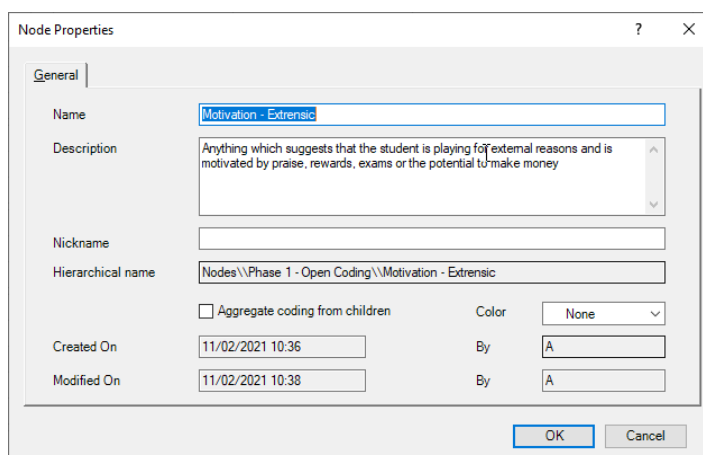
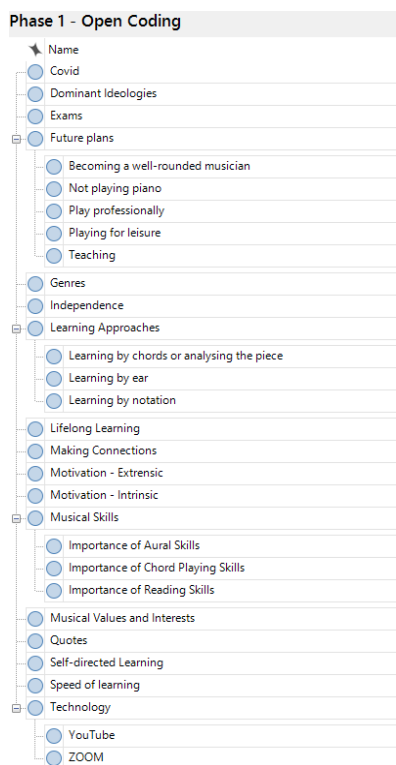
Negative Experience	Past experiences or hypothetical future experiences which negatively impact a student either personally or in their learning
Obstacles	Giving up learning a piece or section of a piece, having difficulty with learning, or playing the piano. Anything which may prevent a student from learning or impede their learning
Other instruments	Learning to play other instruments such as guitar, tin whistle or singing, etc.
Practice	Anything which gives details of how students approach practising, their frequency of practice and any other interesting observations made. Comments such as 'I learnt it by reading it' is more a general learning approach as opposed to a detail about how exactly they approached their practice so these will be excluded
Quotes	Any quote which stands out as important and representative of the study
School	Mentions of studying music in school or just school in general
Self-directed Learning	Taking initiative to learn something on their own without being asked to do so and without help
Skills	Any mention of aural, sight reading, performance or technical skills
Aural Skills	How having good aural skills can help you learn pieces, be independent, or help you learn, or wanting to have strong aural skills
Chord Playing Skills	How having good chord playing skills and understanding of chords can help you learn pieces, be independent, or help you learn, or wanting to have strong chord playing/reading skills
Reading Skills	How having good reading skills can help you learn, wanting to be better at sight reading, needing to be good at reading to learn pieces on your own, etc.
Non-Musical Skills	Skills necessary for learning piano and/or lifelong learning such as patience, will-power, determination, etc.
Skill Development	Progress in a student's skill development, for example getting better at playing by ear, reading, or attention to detail in pieces; performing better
Social Playing	Playing in a social setting either in front of others or with other peers.
Speed of learning	Learning a piece faster or slower, particularly when mentioning a certain approach to learning said piece.
Student-Teacher Relationship	Reference to the relationship a teacher and student have either positive or negative and the effect, if any, this has on learning
Teacher dependence	Needing a teacher to learn a new skill or piece. Being reliant on a teacher to tell them what or how to play
Technology	Use of technology inside or outside of the classroom, both for this project and to learn or listen to other pieces
Shared recordings	Three different platforms were used for sharing recordings with the students: CDs, Cadenza and Google Drive. A different one for each cycle as there were issues with the previous one(s). This looks at any comments on the use of these
YouTube	Using YouTube to listen to or learn pieces from. This includes watching synthesisia piano videos
ZOOM	Positive and negative comments on the use of ZOOM during the final 10 weeks of lessons in Cycle 3

Appendix I: Manual Interpretive Coding Process

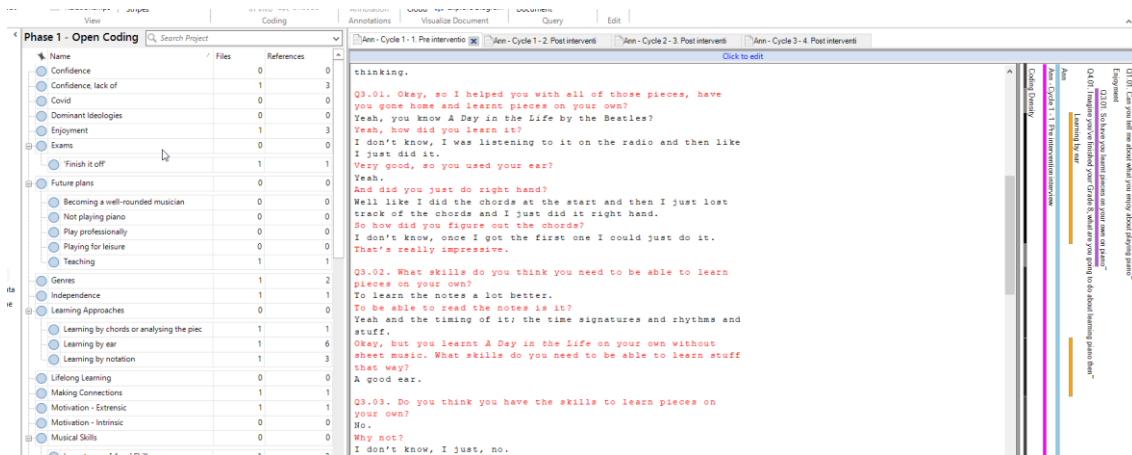
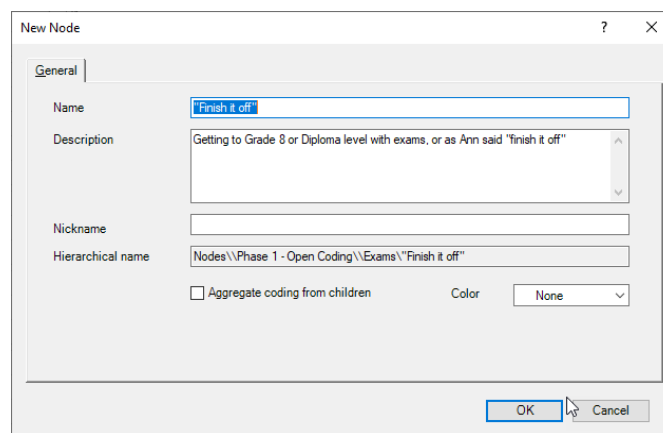
1. Consistent with my thematic analysis approach, I created 3 folders under Codes>Nodes for my 3 phases of analysis:
 - a. Phase 1 – Open Coding
 - b. Phase 2 – Developing Categories
 - c. Phase 3 – Developing Themes



2. Before phase 1 coding commenced, I read through all of the data and the manual analysis carried out on Cycles 1 and 2, and took further notes.
3. I opened the first pre-intervention interview with Ann from Cycle 1, then selected the ‘Phase 1 - Open Coding’ folder and began coding into this folder; creating nodes (deductively and inductively), naming them and giving a ‘description’ of the code to give ‘guidance regarding its application.’ (Mihas, 2019, p. 3).



Using student's own words with In Vivo coding, like when Ann was talking about how far she wanted to get in piano examinations and said she wants to “finish it off”



To add text to each node I first highlighted the section of relevant text, in addition so some of the surrounding text to maintain context (Braun and Clarke, 2006), and dragged and dropped it into the relevant node(s).

4. After coding the student interviews individually, I went over the interviews question by question, and then followed the following process to ensure coding was rigorous:
 - a. Reviewed the coding stripes on each interview transcript for open coding selected.
 - b. Searched all interviews for key words (using the nodes) to check if anything was missed.
 - c. Reviewed each node and the data coded to ensure each excerpt corresponded with the description provided and nothing was left out or assigned to the wrong node.
 - d. Checked the weighting of the coding.

Note: Throughout this coding process I wrote analytical memos on significant points made by the students and key themes that seemed to emerge, in addition to thoughts I was having as I read through the data in different ways. This aided in the analysis process.

5. Once I was certain everything was coded correctly in the first phase of coding, I began the second phase of coding. The aim of this phase is ‘to develop a sense of categorical, thematic, conceptual, and/or theoretical organization from your array of First Cycle codes.’ (Saldana 2013, p.207).

Creating categories and themes was an iterative process which required going back and forth between the different phases of coding. The categories that emerged are seen below:

Phase 2 - Developing Categories		
Name	Files	References
Autonomy		29
Autonomy		17
Autonomy, lack of		8
Benefits of playing piano		19
Exams		17
Future plans		20
Motivation - Externally regulated		17
Motivation - Internally regulated		20
Musical Values and Interests		25
Competence		31
Challenge		20
Confidence		18
Independence		24
Knowledge		24
Lifelong Learning		22
Making Connections		17
Self-directed Learning		25
Skills		30
Learning Experience		30
Boredom		9
Challenge		20
Change		19
Dominant Ideologies		13
Enjoyment		25
Familiarity		16
Genres		22
Goals		15
Learning Approaches		24
Listening		22
Negative Experience		14
Obstacles		22
Practice		10
Speed of learning		20
Technology		1
Relatedness		18
Social Playing		4
Student-Teacher Relationship		5
Teacher dependence		16

6. These were analysed further and key themes emerged from the data: 1) the impact of alternative pedagogical approaches on 1) musical skills and knowledge; 2) motivation; 3) engagement; and 4) independence. A number of secondary themes emerged including 1) the role of the teacher; 2) examinations, and 3) Challenges with technology. To ascertain their validity the themes were reviewed and the entire data set read again to ensure these themes worked.

Appendix J: Information Sheets and Consent Forms (Pre-Cycle 1)



Teaching approaches in piano: An investigation into their role in students' learning experience and musical accomplishments

Participant (Student) Information Sheet

I, Aoife Chawke, am a research student of Mary Immaculate College and I am asking you to be part of my research study. I am doing this research study to learn more about how students learn piano, the ways of learning students find most fun and interesting, and students overall experiences of learning how to play piano.

What I am asking you to do:

I would like to start with talking to you, just the two of us, about learning the piano and parts of playing piano which you feel are hard or easy. This will take 10-15 minutes. We will then have our piano lessons as normal, but I will try new ways of teaching you your exam pieces like playing by ear and using chord charts. After 6-8 weeks (just before your exam) I will talk to you again about these piano lessons, about what you liked and did not like, and what you found hard or easy. After this I may ask you to be a part of a small group discussion where we will talk about similar topics to those we talked about in our one-to-one talk. This will also be your choice and if you are not happy talking to me in a group you do not have to take part if you don't want to.

These talks will be audio recorded but the recordings will only be listened to by me and I will then include samples from them in my written research. Every student will be given a fake name and, when writing my research I will call each student by their fake name to protect their identity.

How will your information be used?

I will keep the information you give me during the study private and all of the recordings will be kept locked up and password protected. The information you give me will be put together with the other student's information and I will include it in my final research project. All of the students will be given fake names so nobody will know who you are when they read it. Samples of recordings from your lesson may be used to show your progress over the 6-8 weeks to other teachers and researchers, but I will make sure that they do not know who is playing in these recordings.

Do you have to be in the study?

No, you do not have to be part of this study, it is your choice. You can say no now, or you can change your mind and say no at any time during the study. I will not mind if you do this and you do not have to give me a reason for leaving the study. If you choose not to be a part of this study our lessons will continue as normal. If you decide not to be in the study at any time one of your parents can contact me or you can let me know during class time.

Will being part of this study hurt or help you in any way?

Being part of this study will not harm you. There are positives to taking part, however, as you will learn new music in fun and interesting ways. You will also be helping me, and other piano teachers, to learn more about students and how they like to learn.

Contact details:

If at any time you have any questions with this study my contact details are:

Aoife Chawke
085-7082009
aoife.chawke@mic.ul.ie



Participant (Student) Consent Form

Title of Study: Teaching approaches in piano: An investigation into their role in students' learning experience and musical accomplishments

- I have read and understand the participant information sheet.
- I understand what the study is about, and what my information will be used for.
- I understand where the research will be carried out.
- I understand that my name will not appear on any part of this study.
- I understand what I am being asked to do for the study.
- I understand that I do not have to be a part of this study if I do not want and I can stop taking part at any time without giving any reason.

This study involves audio recording. Please tick the appropriate box

- I am aware that my lessons and what I say will be audio recorded and I agree to this. However, if I feel uncomfortable at any time, I can ask that the recording equipment be turned off. I can have a summary of the discussions if I want to review it. I know what will happen to these recordings once the study is finished.
- I do not agree to be audio recorded in this study.

After considering the above statements, I consent to my involvement in Aoife Chawke's research study.

Name of participant: (please print) _____

Participants Signature: _____

Date: _____

Researcher's Signature: _____

Date: _____



Teaching approaches in piano: An investigation into their role in students' learning experience and musical accomplishments

Parent/Guardian Information Sheet

Purpose of the study

Piano tends to be taught in a traditional way in Ireland, with many students undertaking graded examinations at the end of the year. This study will investigate these traditional methods of teaching and learning, and introduce alternative, and possibly more motivating and interesting, approaches for students to learn new repertoire, while still preparing for their graded examination. By analysing these different approaches and allowing students' to discuss their opinions and experiences, a greater knowledge of students' learning experience and skill attainment in the piano lesson will be obtained, which will, in-turn, help future educators, researchers and curriculum designers address any issues raised in the findings of the study.

Who is undertaking it?

My name is Aoife Chawke and I am a Postgraduate student attending Mary Immaculate College. I am presently completing an MA by research in the Department of Arts Education and Physical Education under the supervision of Dr Gwen Moore. The current study will form part of my thesis.

What are the benefits of this research?

It is hoped that the data gathered from participants will (a) improve our understanding of how students learn and their experience of learning repertoire and preparing for examinations, (b) enhance our knowledge of the most interesting and motivating teaching methods for students learning the piano while still ensuring progression on their instrument, (c) encourage the inclusion of students' musical interests and values in their piano learning, and (d) create more opportunities for students to participate in self-directed learning and a capacity for lifelong learning.

Exactly what is involved for you child?

The study will involve:

- a. Interviewing your child before new approaches to piano teaching are introduced. This interview will take 10-15 minutes.
- b. Audio-recording of 6-8 lessons.
- c. Interviewing your child individually and, if necessary, as part of a group discussion after the project has finished. This will be audio-recorded.
- d. Your child will also be asked for his/her permission to take part in any of the above.

After the initial interview your child's piano lessons will continue as normal but with new teaching methods used to teach their examination pieces. This will be over a 6-8-week period. After this a follow-up interview will be conducted about the student's experiences over the previous weeks. If necessary, after these interviews, a number of these students may be asked to partake in a focus group to obtain further information, but again, these will be completely voluntary.

The interviews will be conducted outside of class time at a time that is convenient to you. The research will be conducted in the Croagh School of Music and will be audio recorded. The recordings will be listened to and transcribed by the researcher only, and analysed for inclusion in the thesis. This information will be used for research purposes only. Examples of our child playing may be used when publishing research articles or presenting at conferences. However, children's names will never be used in the writing up of the study. Your child will only be asked questions about the project and no personal or sensitive questions will be asked.

Right to withdraw

Every participant's anonymity is assured, and participation is voluntary. You, or your child, are free to withdraw from the study at any time without giving a reason and without consequence.

How will the information be used?

The data from your child's participation will be combined with that of the other participants in this study and presented in the thesis. Excerpts from your child's lesson may be used to show their progress over the 6-8 weeks to other teachers and researchers but your child anonymity will be kept at all times and every effort will be made to ensure there will be no clue to their identity in these excerpts.

How will confidentiality be kept?

All data gathered will remain confidential and will not be released to any third party. A pseudonym will be created for each participant, and it is this name, rather than the participant's name, which will be held with their data to maintain their anonymity.

What will happen to the data after research has been completed?

In accordance with the MIC Record Retention Schedule all research data will be stored safely for the duration of the project plus three years. It will then be destroyed.

Contact details:

If at any time you have any queries/issues with regard to this study, my contact details are as follows:

Aoife Chawke
085-7082009
aoife.chawke@mic.ul.ie

If you have concerns about this study and wish to contact someone independent, you may contact:

Dr Gwen Moore (*Supervisor*)
Director of Teaching and Learning
Mary Immaculate College
South Circular Road
Limerick
061-204945
gwen.moore@mic.ul.ie

Mary Collins
MIREC Administrator
Research and Graduate School
Mary Immaculate College
South Circular Road
Limerick
061-204980
mirec@mic.ul.ie



Parent/Guardian Consent Form

Title of Study: Teaching approaches in piano: An investigation into their role in students' learning experience and musical accomplishments

- I have read and understand the parent/guardian information sheet.
- I understand what the study is about, and what my child's data will be used for.
- I understand that my child's anonymity will be protected and their name will not appear on any research data from this study.
- I understand that my child's participation is voluntary and that I can withdraw my child's participation from the study at any stage without giving any reason.

This study involves audio recording. Please tick the appropriate box

- I am aware that my child's participation in this study will be audio recorded and I agree to this. However, should I or my child feel uncomfortable at any time I/my child can ask that the recording equipment be turned off. I am entitled to an anonymised summary of the discussions if I or my child wants to review it. I am fully informed as to what will happen to these recordings once the study is finished.
- I do not agree to my child being audio recorded in this study.

After considering the above statements, I consent to my child _____ (name) involvement in Aoife Chawke's research study.

Name of child: (please print) _____

Name of parent/guardian: (please print) _____

Parent/guardian Signature: _____

Date: _____

Researcher's Signature: _____

Date: _____

Appendix K: Sheet Music – Ann – Cycle 1 – *Étude* by Stephen Heller

Etude

Stephen Heller

Adagio e molto espressivo

The musical score is written for piano in G major and common time. It consists of five systems of two staves each (treble and bass clef). The first system (measures 1-3) features a treble staff with a melody of eighth-note triplets and a bass staff with a simple accompaniment of quarter notes. The second system (measures 4-6) continues the triplet melody in the treble and adds a more active bass line. The third system (measures 7-9) shows the treble staff moving to a higher register with more complex triplet patterns, while the bass staff continues with rhythmic accompaniment. The fourth system (measures 10-12) features a more melodic bass line with triplets and a treble staff with sustained chords and single notes. The fifth system (measures 13-15) concludes with a return to a triplet melody in the treble and a bass line with accented notes. Dynamics include *pp* (pianissimo) and *p* (piano). Performance markings include *cantabile* and various slurs and phrasing lines.

pp

p *3 cantabile*

4

7

10

13

16 *riten.* *a tempo*

19 *cantabile*

22 *mp*

25 *riten.*

28 *a tempo* *pp*

30 *pp*

Appendix L: Resource Sheet – Ann – Cycle 1 – Étude – Accompaniment in Block Chords

Etude

Accompaniment in Block Chords

The musical score is written in 4/4 time with a key signature of one sharp (F#). It consists of eight staves of music, alternating between the right hand (RH) and left hand (LH). Fingerings are indicated by numbers 1-5 above or below notes.

- Staff 1 (RH):** Measures 1-4. Fingerings: (5 3 1), (4 2 1), (5 2 1), (5 4), (5 2 1), (5 3 1).
- Staff 2 (RH):** Measures 5-8. Fingerings: (4 2 1), (5 2 1), (5 4), (5 2 1), (5 3 1).
- Staff 3 (LH):** Measures 9-12. Fingerings: (1 2 4), (1 3 5), (1 3 5), (1 2 5), (1 2 4).
- Staff 4 (RH):** Measures 13-16. Fingerings: (5 2 1), (3 2 1), (4 2 1), (5 2 1), (5 2 1), (4 2 1), (5 2 1).
- Staff 5 (RH):** Measures 17-20. Fingerings: (5 2 1), (4 2 1), (5 2 1), (4 2 1), (5 2 1), (5 4), (5 4).
- Staff 6 (RH):** Measures 21-24. Fingerings: (5 2 1), (5 3 1), (5 3 1), (5 2 1), (5 2 1), (5 3 1), (5 3 1), (5 2 1), (5 3 1), (5 4 1), (5 4 1).
- Staff 7 (LH):** Measures 25-28. Fingerings: (5 3 1), (5 3 1), (5 3 1), (5 3 2), (5 3 1), (5 4 2), (5 2 1), (5 4 2), (5 4 1), (5 4 2), (5 3 1), (5 4 2), (5 4 1), (5 2 1).
- Staff 8 (LH):** Measures 29-32. Fingerings: (1 3 5), (1 3 5), (1 2 5), (1 2 5), (1 2 4).

Appendix M: Simultaneous Learning Practice Map

Practice Map
Map out the ingredients of the piece

|

Rhythm

Articulation

Key/Scale **Time Signature** **Common Intervals**

Chords **Dynamics**

Character **Theory**

Tempo

Title:

Character:

Appendix N: David – Cycle 1 – Summary of Teaching & Learning

Lesson	Lesson date	Piece	What was covered?	Approach used	Reflection on learning	Reflection on teaching	Length of class	Start time
1	22/02/2018	<i>Allegro</i>	LH - Section 1-5 on resource sheet	Analytical	David picked it up quite quickly and learned 2/3 of the LH in a relatively short amount of time. Found some articulations difficult and often detached notes where there was a slur but repetition and hearing me sing/play helped with this.	I spent quite a lot of time talking but that is the nature of musical analysis. Spent some time explaining the time signature and asking David other time signatures to ensure he understood it. I felt I covered the notes, rhythm and articulation of each section thoroughly and was happy with how we made connections between arpeggios and the patterns on the LH. I gave him some answers, like I told him to hop the staccatos (he knows staccatos well so did not need to do this) but mostly encouraged him to work them out by asking probing questions.	0:14:48	00:14:48
2	08/03/2018	<i>Allegro</i>	RH - Bar 1-8	HeLP	Took a while to get the first riff but very impressive how David recognised the double notes and generally picked it up by ear very quickly with relative accuracy. Wasn't 100% secure when leaving but had recording	Went through it too fast overall; should have spent more time having David replay each riff before moving on. Gave him the harmony note C on RH bar 7 but should have helped him figure it out himself and didn't correct him enough at the end when he played through it all (only once)	0:18:34	00:00:00
			LH - Section 1-5 on resource sheet	Analytical	He was unsure of what we had covered 2 weeks ago, particularly No.1 but after hearing me play it a few times he played it with the correct notes and articulation. When asked about the pattern of No.2 he remembered it was an arpeggio. No.4 was very good (he liked the rhythm)	Filled in more of the practice map with David focusing on the articulation and rhythm. Decided not to go further because last weeks work not learned/forgotten		00:12:01
3	12/04/2018	<i>Allegro</i>	RH - Bar 1-8	HeLP	After 5 weeks between lessons due to Easter holidays and David being sick we needed to go over everything again. Having said that he picked it up again quite quickly and easily	Slightly rote teaching here, not just by ear. Also told him fingering for bar 2 instead of encouraging him to figure it out	0:13:17	00:00:00
			HT - Bar 1-4	HeLP	Didn't seem to have any issues with this, was just a little hesitant	Went through this too fast but it was easy		00:03:10
			HT - Bar 5-8	Analytical (w/some listening & rote)	David seemed to rely more on listening and copying me rather than actually analysing how the music went together here. He noted how the LH sounded like it was in the wrong place which is a reasonable observation as it often came in on the half beat. This showed he was using his aural awareness here.	Again, moved too quickly particularly bar 7-8 HT as LH wasn't covered previously		00:04:30

Lesson	Lesson date	Piece	What was covered	Approach used	Reflection on learning	Reflection on teaching	Length of class	Start time
4	19/04/2018	<i>Allegro</i>	HS - Bar 1-8	HeLP & Analytical	David did not do much practice again so only revised this HS this week	Filled in a new practice map as other one was lost but this was a good exercise as it helped solidify David's understanding of the	0:16:44	00:00:00 - 00:04:29
			HT - Bar 9-12	Analytical, HeLP & Rote	Eventually got it HT very slowly but predominantly did this by listening and trial and error. Did not seem overly engaged in the process	Tried putting this HT too quickly but backtracked and went back to HS work before trying HT again. Really felt the pressure of the imminent exam and this led to uninspiring teaching		00:00:00 - 00:12:15
5	26/04/2018	<i>Allegro</i>	HT - bar 1-4	HeLP & Rote	Learning by ear made this easier to put HT than reading did; the sheet music seemed to distract David, although I'm sure rote learning was involved also as he could see me demonstrating.	David decided to use the music initially but this seemed to put him off so I decided to take away the music so he could focus on using his ear more, this seemed to work better. Should have spent more time at the start asking him to play HS before putting HT instead of taking his word	0:14:54	00:00:00
			HT - bar 5-8	Rote	While David seemed engaged and focused, I don't think there was much deep learning here but rather copying what I did/doing what I told	Not very inspiring teaching here - very teacher led with me telling/explaining what to do. Also rushed through it and it needed to be played		00:06:25
			HT - bar 9-12	Analytical & Rote	Started RH shakily but played well after a couple of attempts. Seemed to be secure HS by the end but only played bar 9-10 HT in class	Spent time going over it HS which was better than the previous sections from an approach perspective but ran out of time so didn't get to go over it all HT. Still expected David to have it all HT for next week which may have been		00:10:16
6	01/05/2018	<i>Allegro</i>	HT - bar 1-8	HeLP, Analytical & Rote	Started confidently but needed some help with fingering and got more hesitant as he progressed. Spending more time on bar 5-8 seemed to help David and he played it much more confidently at the end HT than ever before	Breaking bar 5-8 down into 1 bar sections and spending more time HS before doing this really paid off. Using a combination of me singing the melody line and demonstrating, along with David listening and reading worked well here also. I did much better at working at David's skill level and not pushing it too far like in	0:15:02	00:00:00
			RH - bar 9-16	HeLP	David played bar 9-12 RH with confidence and breaking bar 13-16 down into half bar sections worked well for David, he played these by ear with ease and I could see his confidence and enthusiasm build here. It was well within his skill level and he appeared to be fully engaged in the learning process for this section	I learned from the previous weeks and played the last 4 bars on my piano app in half-bar sections instead of the full 2 bar riff. This was the right choice as David made much better progress and I was confident he knew this section from memory at the end of the few minutes we spent on it. I don't think I would have gotten the same result from David if I had played the full riff; it would more likely have taken much longer for David to get it by ear this		00:08:10
			LH - bar 9-16	Analytical	David played bar 9-12 relatively well and saw the connection between bar 9-10 and 11-12. Despite me rushing through the analysis of bar 13-16 David sight read this well and was relatively accurate with both pitch and rhythm	I made the connections for David in bar 13-16 due to time constraints. While this may have been necessary I should have spent those extra couple of minutes asking David to analyse the music and guide him rather than giving him the		00:12:34

Lesson	Lesson date	Piece	What was covered?	Approach used	Reflection on learning	Reflection on teaching	Length of class	Start time
7	03/05/2018	<i>Allegro</i>	HT - bar 1-8	<i>Played from memory</i>	Although this lesson was only 2 days after the previous one David made good progress, and while it was not perfect he easily corrected his mistakes once I reminded him of how it was played.	I just corrected what I needed to here but I did not spend much time as I felt David knew what to do, but encouraging him to play slower helped. I think listening to the piece at home would help David here but I did not think of this at the time.	0:22:11	00:00:00
			RH - bar 9-16 & HT - bar 9-12	Analytical & HeLP	I needed to correct a couple of fingerings but other than that he did well. He preferred reading to trying it HT by ear, although I felt he did better by ear.	Should have spent longer on putting bar 11-12 HT but otherwise we spent sufficient time on the rest and I felt the way I broke it up and worked on it bit by bit worked well.		00:03:06
			HT - bar 13-16	Analytical	David didn't remember the LH initially but after we went through it it came back to him. Putting it HT was relatively easy; after hearing me play through it and talk through it twice he sight read it accurately. Having an aural knowledge of it and being able to read it appeared to have helped with this.	I was happy with how this went and we got it HT quite quickly and easily. I played it slowly and highlighted the divisions which I feel helped David get an aural and intellectual understanding of these few bars before he tried playing it himself.		00:16:51
8	17/05/2018	<i>Allegro</i>	HT - bar 1-16 (all)	HeLP & Analytical	A little messy at first but a great improvement this week. While the second half in particular still needed attention, David is starting to play the entire piece through and started working on more detail, putting in the articulation and dynamics. He also played it predominantly from memory HT.	Other than needing to go over bar 9-12 and 13-16 again HT I felt my teaching went well here and I got a lot covered, including more detail work. This was a positive and productive class.	0:11:51	00:00:00
			Theory	Analytical	David knew most of the theory, just needed to be reminded of tenuto, ledger lines and an upbeat. He would have come across all of these before.	Covered everything I needed to here.		00:09:39
9	23/05/2018	<i>Allegro</i>	HT - bar 1-16 (all)	<i>Played from memory</i>	Some hesitations towards the end but overall has improved further and David took direction well as to the more detailed elements such as dynamics etc.	Should have asked David to play through it once more once we went over the different bits that needed some more attention but I had to ensure everything else was covered in this lesson so it would have been unfair to focus on this piece more than the others.	0:02:16	00:00:00

Appendix O: David – Cycle 3 – *The Entertainer* (arrangement) by Scott Joplin

The Entertainer

Scott Joplin

1. *Andante* *mf*

1. 2. 1. 2. 3. 1. 2. 1. 2.

5 2 3 1

Detailed description: This system contains the first four measures of the piece. The right hand (treble clef) features a melody with eighth and quarter notes, including a triplet of eighth notes in the third measure. The left hand (bass clef) provides a simple accompaniment of quarter notes. Fingerings are indicated by numbers 1-3. A first ending bracket spans measures 1-4, and a second ending bracket spans measures 2-4.

3. 1. 2.

5 2 3 3 1 2 1 3

Detailed description: This system contains measures 5-8. The right hand continues the melody with eighth notes and quarter notes. The left hand accompaniment remains consistent. Fingerings are indicated by numbers 1-3. A first ending bracket spans measures 5-8, and a second ending bracket spans measures 6-8.

4.

9 1 2 3 2 1 3

Detailed description: This system contains measures 9-12. The right hand melody continues with eighth and quarter notes. The left hand accompaniment consists of quarter notes. Fingerings are indicated by numbers 1-3. A first ending bracket spans measures 9-12, and a second ending bracket spans measures 10-12.

5 = bar 1-16

13 *cresc.* *f* 6.

1 1 2

Detailed description: This system contains measures 13-16. The right hand features a sixteenth-note triplet in measures 13-15, followed by a quarter note in measure 16. The left hand accompaniment consists of quarter notes. A *crescendo* hairpin is shown over the first three measures of this system. A first ending bracket spans measures 13-16, and a second ending bracket spans measures 14-16. The word *Fine* is written above measure 16. The dynamic *f* (forte) is indicated at the start of measure 16.

7.

17 5 4 2 2 1 2 3

Detailed description: This system contains measures 17-20. The right hand features a sixteenth-note triplet in measures 17-19, followed by a quarter note in measure 20. The left hand accompaniment consists of quarter notes. Fingerings are indicated by numbers 1-5. A first ending bracket spans measures 17-20, and a second ending bracket spans measures 18-20.

21

8.

25

9.

29

10.

11 = bar 29-32

D.C. al Fine

12 = bar 17-32

Appendix P: David – Cycle 3 – *Nuvole Bianche* (arrangement) by Ludovico Einaudi

Nuvole Bianche

Ludovico Einaudi

1. $\text{♩} = \text{c.40 allarg.}$

42

mp 2. $\text{♩} = 78 \text{ poco accel.}$

42

3. *p*

42

4. $(\text{♩} = 80)$
poco cresc.

42

5.

42

7. $\text{♩} = 84$

42

6 = bar 1-20

mp

11 = bar
21-34

22. 8.

23. 9.

24. 10.

25. 12. rit. a tempo poco a poco accel.

26. 13.

27. 14.

28. 15. (= 94)

29. 16.

30. 17.

18 = bar 35-50

48. Musical score for system 19, measures 48-50. The system consists of two staves (treble and bass clef) in a key signature of three flats. The music features a steady eighth-note accompaniment in the bass and a more active melody in the treble.

51. Musical score for system 20, measures 51-52. The system consists of two staves. A tempo marking of $\text{♩} = 96$ is present at the beginning of the system. The music continues with similar rhythmic patterns.

53. Musical score for system 21, measures 53-54. The system consists of two staves. The musical notation continues across these two systems.

55. Musical score for system 22, measures 55-56. The system consists of two staves. The musical notation continues across these two systems.

57. Musical score for system 23, measures 57-59. The system consists of two staves. A *molto rit.* marking is present above the treble staff. The system concludes with a fermata on the final note of the treble staff.

22 = bar 51-59

60. Musical score for system 24, measures 60-63. The system consists of two staves. A tempo marking of *a tempo* = 88 is present. The treble staff has a *sen. ten.* marking. The bass staff features a simple harmonic accompaniment with chords.

64. Musical score for system 25, measures 64-65. The system consists of two staves. A tempo marking of *a tempo* is present. The treble staff has a *sen. ten.* marking. The system concludes with a fermata on the final note of the treble staff.

25 = bar 60-65

Appendix Q: Motivation for MuSIKE Model – Logo Prototype

