Exploring a Framework for Understanding Young Innovative Learners Engaged in Musical Activities in a Technologically Evolving Age

by

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Abstract

As new forms of musical learning have arisen in the 21st century, researchers, educators, and the wider community are seeking ways to describe how youth are learning and engaging with music in a technologically evolving digital age. This exploratory research aims to provide a framework for understanding innovative learners engaged in musical activities that can inform both research and practice in music education. First, a framework for understanding innovative learners is proposed based on three broad and interrelated areas: connecting, self-directed learning, and multimodal meaning making. These three areas align with current Canadian perspectives on 21st century learning and innovation and were derived through a review of relevant theoretical and empirical literature. Next, an interview study was conducted with 93 participants aged 11 to 18 years (females = 35; males = 58) attending elementary, middle, and secondary schools in the Greater Vancouver area of British Columbia, Canada. The participants' perspectives on their engagement with musical activities (initiators, sustainers, benefits) was explored and considered in relation to personal, social, and systemic factors. A content analysis was used to identify the prevalence of innovative learners using the proposed framework. Finally, 11 case studies involving rich and detailed descriptive vignettes explored further how participants who were identified in the interview study as innovative learners were engaging in musical activities within their digitally infused musical lives. The findings indicate that while many of the participants exhibited at least one or some of the three broad and interrelated areas associated with 21st century learning and innovation, the 11 participants who were identified as innovative learners were situated in all three areas of the proposed innovative music learner framework in diverse ways. These innovative learners' transformative music engagement was deeply immersive, fluid, and interconnected, and unlike previous generations of music learners. Young people's involvement with these evolving technologies and digital devices suggests a new landscape for how they navigate and describe their musical learning within today's digitally infused musical landscapes.

Keywords: music education; innovative learners; 21st century learners; multimodal meaning making; informal music learning; transformative music engagement

Dedication

This thesis is dedicated to the three people in my life that have supported me through this adventure and that have always provided me with the love, strength and encouragement to make my dreams come true.

To my parents, Raffaele and Maria, for your love and support throughout my life, and providing the foundation and faith that I can achieve anything – for this I am forever grateful, and without you both I would not be the person I am today;

and

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Glossary

Crowd-sourcing	Online crowd-sourcing is a cultural phenomenon that has been fuelled by the advent of the Internet, where information easily can be contributed by anyone with access to the Internet. The locations of crowd-sourced knowledge can vary from wikis to website that host collaborative image sharing. It is a collaborative process that allows the contributors to use online personas or have anonymous contributions without judgment on their age, ethnicity, or background (see Howe, 2006). The contributions of the Internet community lead to sharing, editing, and appropriating knowledge, many times with the goal of collective problem solving (see Brabham, 2008).
Innovative learner	The term *innovative learner* describes people who are currently situated within the sociocultural contexts described within 21st century frameworks for learning and innovation (e.g., C21 Canada, 2012). While the term "innovative" pre-dates the evolution of the digital age that contemporary young people are engaging in, it is evident in the many educational frameworks within Canadian contexts of learning within the 21st century, that the definition of the term *innovative learners* has now shifted to incorporate the saturation of digital technologies as a part of being a learner in the current day, as well as being tied to learning and success in young people's lives, and futures. Even with the prolific use of the term in various frameworks for education and learning, the term lacks a solid definition within existing contexts. The use of the term *innovative learner*, as a whole, provides a redefinition of the combined terms considering the integration of interconnected and infused technologies in everyday life. The use of the term *innovative learners* does not define a learning style or environment, nor does it define a style of teaching. It provides the basis to begin the discussion of young people within our interconnected digital age, that have gone beyond simply being "digital natives" (Prensky, 2001, p. 1) with the capacity to be innovative within a technological society, and has been adapted in this research to describe the sorts of young people that are engaging in deeply interrelated forms of learning, multimodally connecting, and framing their meaning making within a digital age. The proposed framework for innovative learners explores the forms of learning young people are describing when they talk about their engagement in their musical activities.

iOS	The term iOS refers to Apple's operating system for mobile devices (e.g., iPod, iPhone, iPad, Apple Watch). Further, this term denotes that something is a mobile Apple product, such as an iPhone is an iOS device, even if it is not named commencing with the letter "i", as seen in the Apple Watch or AppleTV.

“We were very lucky — we grew up in a generation where music was an incredibly intimate part of that generation. More intimate than it had been, and maybe more intimate than it is today, because today there’s a lot of other alternatives. We didn’t have video games to play. We didn’t have personal computers. There’s so many other things competing for kids’ time now. But, nonetheless, music is really being reinvented in this digital age, and that is bringing it back into people’s lives. It’s a wonderful thing. And in our own small way, that’s how we’re working to make the world a better place.”

Steve Jobs - Rolling Stone, Dec. 3, 2003

Chapter 1.

Introduction

1.1. Background and research aims

Today's learners are immersed within a digital-media-infused world. The emergence of rapidly evolving digital media technologies resembles Bauman's (2005) description of a "liquid modern society" where "members act change faster than it takes the ways of acting to consolidate into habits and routines" (p. 1). The rate of our society's technological evolution appears to demonstrate this liquid modernity, or "fluidity," where digital media propels communication and learning faster than it is feasible to incorporate into common nomenclature, or more specifically, into classrooms. And yet, outside school walls, digital and social media provide immediate, immersive, and participatory spaces for discovery of knowledge (Jenkins, 2006a). Considering this fluid state of our digital age, wherein the process of learning has transformed unlike any other generation (Jukes, McCain, & Crockett, 2010a; Prensky, 2006), we can see very specific learning activities happening—in how learners connect within their musical lives, how they learn via self-directed means within their musical lives (McPherson & Renwick, 2011), and how they multimodally make meaning and sense within their musical lives (Kress & Van Leeuwan, 2006)—and yet we struggle to identify a framework to describe the interrelated features of this 21st century phenomenon.

Within a technologically evolving world, where communication, expression, and learning are multimodal (e.g., Jewitt, 2006, 2008), self-directed (e.g., Laurillard, 2013, p. xvii), and situated in participatory cultures (e.g., Jenkins, 2006), young people's ways of learning have transformed in relation to a diverse array of resources involving digital media and devices. These resources have become increasingly accessible within their daily lives (e.g., state-of-the-art, multimodal, mobile, and interactive iPhones can now be

obtained for free through Canadian wireless carriers). And, as evolving yet ubiquitous technologies and digital devices have transformed 21st century learning, there has been increasing conversations by numerous scholars about the ways in which today's young learners are somehow different from previous generations. For example, Prensky (2001) notes "today's students think and process information fundamentally differently from their predecessors" (p. 1). There has also been increasing recognition of the need for educators to re-envision their understanding of young people's learning process within the 21st century to decrease the digital divide (e.g., Guo, 2014; Prensky, 2001; Swain & Pearson, 2014).

In responding to this need within Canada, a number of 21st century learning frameworks have emerged (Alberta Education, 2011; C21 Canada, 2012; Ontario Public School Boards' Association, 2013). The aim of these frameworks is to provide a vision for public education that can be used to harness the potential of technologies for teaching and learning and foster "creative and innovative minds" (C21 Canada, 2012, p. 5). These 21st century learning frameworks focus on theoretical and empirical research to support numerous principles, competences, and constructs related to models of 21st century learning. Although there are variations among the different frameworks, a number of common elements can be found, such as the need to foster creativity, innovation, and entrepreneurship through learning spaces that are more flexible and that "offer opportunities for both personalized and collaborative learning" (C21 Canada, 2012, p. 15). More specifically, the three key areas that have been identified for helping to meet 21st century learning outcomes include: 1) placing a greater emphasis on learners' experience of *connecting* both digitally and socially, 2) fostering *self-directed learning* associated with informal music learning practices and self-regulation, and 3) harnessing the potential and affordances of *multimodal meaning making* and digital literacies for communication and expression using a variety of technologies and digital devices. Within each of these three areas, multiple discrete and overlapping constructs are situated. This makes it difficult to examine them as part of an interrelated whole and compare how they are manifested across diverse learners. There is also a lack of detailed descriptions of what these areas look like from young people's own perspectives. Further, there is no research focusing specifically on identifying the constructs that are most relevant for understanding how youth are learning and

engaging with music in a technologically evolving digital age. Young people are transforming the nature of what it means to be musically knowledgeable in contemporary society, where they are employing complex and participatory forms of interaction, expression, communication, and learning of music in ways that are relatively unexplored by educators, researchers, and those that construct curriculum and policy.

If we are to better understand the extent to which young music learners are exhibiting 21st century learning and innovation, research is needed that can help identify the constructs and interrelated areas that characterize *innovative learners*[1] from their own perspectives and within the context of their own musical lives. There is a strong consensus among contemporary educational theorists that the ubiquity and influence of digital and social media have led to transformations in learning that are unlike anything we have seen before (e.g., Jukes, McCain, & Crockett, 2010a; Jukes, McCain, & Crockett, 2010b; McFarlane, 2015; Prensky, 2006). In music, this has become especially apparent in informal music learning spaces or places where musical learning takes place outside of the classroom (Green, 2007). Therefore, a key aim of this research is to disentangle (at least temporarily) the interrelated areas that are evident among the current generation of musical learners in order to provide rich descriptions of what these learners look like when engaged in musical activities within the context of their everyday lives. It is important to discuss that this research does not intend to address what young people are in fact learning; rather the significance of this research is on identifying the forms of learning (connecting, self-directed, and multimodal) related to the innovative learner framework, that the young people themselves are describing within their real life contexts. To address this aim, a framework is proposed for understanding how innovative learners are learning and engaging with music in a technologically evolving digital age. By providing a detailed exploration of what contemporary music learners are doing, the extent to which they are exhibiting areas

[1] The term *innovative learner* is used to describe people who are currently situated within the sociocultural contexts described within 21st century frameworks for learning and innovation (e.g., C21 Canada, 2012), where continually evolving technologies are intermeshed within the notion of being a contemporary learner. Going beyond just involvement in technologically-infused activities, the term *innovative learner* goes on to describe the interrelated ways that young people are engaging in learning, multimodally connecting, and multimodally making meaning within a digital age, unlike previous generations. A detailed explanation of how the term *innovative learner* is used within this thesis can be found in the Glossary on page *xvi.*

within the framework, and then using the framework to identify young people who might be considered innovative learners, this research may help music educators better understand the kinds of learning opportunities that are likely to be taken up and used by innovative learners and those on the cusp of becoming innovative learners in order to help these young people reach their full potential within today's digitally infused musical landscapes.

To assist with the identification of innovative learners among young people engaged in musical activities, a framework based on three broad *areas of 21st century learning* is proposed following an initial review of related literature and existing 21st century learning frameworks in Canada (Alberta Education, 2011; C21 Canada, 2012; Ontario Public School Boards' Association, 2013). While there is a large amount of research devoted to each of these areas and constructs in education and other disciplines, there has been a paucity of research examining their interrelatedness and how they are taken up and used by young people in their musical engagement with contemporary digital technologies. The literature review that follows explores each of the broad interrelated areas and associated constructs identified within the proposed framework for understanding innovative learners to reveal the significance of each for young people's musical engagement. The proposed framework is then used to guide the identification process of innovative learners in an exploratory study examining the extent to which innovative learners are apparent among young people engaged in music. The findings from the exploratory study are then used to suggest future areas for development to the proposed framework.

To clarify the research process further, the research components of this thesis are divided into three parts. In the first part, the focus is on reviewing the literature related to the proposed framework for understanding innovative learners. The literature review that is presented in the thesis is organized with respect to the proposed framework (i.e., the proposed framework is presented first, though the development of the framework emerged through an in depth investigation of relevant literature, which then led to the operational definitions of the interrelated areas, and associated constructs). It should be noted that a long cyclical and iterative process took place in the development and refinement of the proposed framework. This process consisted of compiling an initial review of relevant literature and existing frameworks for 21st century

learning and innovation in Canada, and undertaking a form of thematic analysis of the literature and frameworks in order to identify broad areas and constructs that feature prominently. The proposed framework underwent a number of revisions and refinements through discussions with the thesis supervisor, other researchers, and doctoral students, and through talking with young music learners about their musical activities, and viewing young people's musical engagement on the Internet, to ensure consistency in approach and interpretation. Finally, it is also important to note that although many of the areas and concepts within the proposed framework overlap and are interrelated, they have been separated here to provide clarity and focus to the literature review and to facilitate the identification, interpretation, and discussion of these areas and constructs in relation to findings from the exploratory study that follows. A key aim of the research is to examine the extent to which young people engaged in musical activities exhibit characteristics associated with the proposed framework for innovative learners and to use this as a basis for a deeper exploration of the diverse ways that innovative learners in particular are engaging in musical activities.

In next part of the research, an interview study (*Youth Participation in Music*) was conducted with 93 participants aged 11 to 18 years (females = 35; males = 58) attending elementary, middle, and secondary schools in the Greater Vancouver area of British Columbia, Canada. The interview study used a Music Engagement Map protocol (Appendix A), which was developed by Dr. O'Neill for the *Youth Participation in Music* project, was based on Rose-Krasnor's (2009) Youth Engagement Framework. The protocol was designed to investigate young people's involvement in their most meaningful musical activities, what got them started in their musical activities, what kept them involved in their musical activities, and what they saw as the benefits or impacts of their musical involvement, all situated within their personal, social, and systemic contexts.

A subsequent, and separate, exploratory study was later conducted using a content analysis approach and the integration of quantitative (descriptive statistics) and qualitative data, to identify the prevalence of the areas that innovative learners exhibit within the proposed framework. Each of the participants' interviews were coded to determine if they were exhibiting aspects of each of the three interrelated areas, and associated constructs. From this analysis, participants that exhibited all three interrelated areas from the framework for innovative learners were then identified as innovative learners.

In part three of the research, case studies involving vignettes based on 11 participants identified as innovative learners in the interview study are explored through rich, detailed descriptions and interpretations of their digitally infused musical lives. Emergent themes associated with the proposed framework are also unpacked. Together, the three parts of this research, along with the discussions in Chapter 6, may help to bridge the gap between what educators, researchers, and policy makers already know, and the insights that might be gained through a deeper understanding of innovative learners and how they are engaging in musical activities in their everyday lives within a technologically evolving digital age.

1.2. Framework for understanding innovative learners

Multimodal ways of expression, representation, communication, and learning are inherent aspects of contemporary youth lives (Kress, 2010). Many young people are engaging in complex forms of self- and peer-initiated learning that are tied to self-regulation as a part of music learning (Green, 2007; McPherson & Renwick, 2011), both inside and outside of school. These diverse ways of communicating and learning facilitate youth empowerment and opportunities for voice (Larson, 2000; O'Neill, 2005), and from that, participatory ways of acquiring and sharing knowledge (Jenkins, 2009). Due to the ubiquitous nature of technology within contemporary daily life, these interactive spaces for music learning are now easily accessible and affordable. They provide young people with opportunities to independently seek out knowledge and to independently navigate their musical lives. They also enable young people to develop self-initiated mechanisms to acquire music knowledge and to monitor and build upon their activities and learning (McPherson & Zimmerman, 2002, 2011). These evolving and interconnected ways that young people, through technological affordances, are musically expressing, communicating, and learning do not exist as discrete or separate areas within young people's lives; rather, they are a fluid intermingling of concepts and practices. Yet, considering this interconnectivity, there is a paucity of research that considers all of these areas or forms of engagement in musical activities as a whole. This study aims to address this issue through a focus on multiple areas thought to be associated with innovative learners, and how these interrelated areas are manifest in the musical lives of today's youth.

To delineate a structure for this research, and to address the most relevant literature, a framework for understanding innovative learners is proposed based on key areas associated with 21st century learning and innovation (see Figure 1.1). The framework draws on the interconnected, non-formalized, deeply meaningful, relevant, and multimodal ways that young people are fluidly communicating, engaging, and learning music within the context of their everyday lives. Recent 21st century learning frameworks in Canada offer variations on a 'vision' for learning and teaching in a digital age (Alberta Education, 2011; C21 Canada, 2012; Ontario Public School Boards' Association, 2013). The Province of British Columbia describes innovation briefly within its *BC Education Plan: Focus on Learning* Report, incorporating it into competency goals for young learners, and as the title of the strategy to support personalized learning approaches in teaching practices (British Columbia Ministry of Education, 2015, p. 1). Yet, this report is primarily focused on "personalized learning" in this 2015 update (British Columbia Ministry of Education, 2015, p. 1), rather than a model of learning for all Canadians in the 21st century, as seen in the C21 Canada (2012) report surrounding 21st century learning and innovation. Other frameworks, such as 'connected learning' focus on the need for youth to see a clear connection between school and life beyond the classroom (Ito, Gutierrez, Livingstone, Penuel, Rhodes, Salen, Schor, Sefton-Green, & Watkins, 2013). The organizing principles of these frameworks for learning in a digital age emphasize different areas and aspects of teaching and learning, making it challenging to find a common focus. Each of these frameworks provides its own perspective, and due to this, there is no singular overarching framework that can be adopted. However, when examined through the lens of 'innovation,' a pattern of three broad areas for learning and teaching are common across many frameworks. These areas include *connecting*, *self-directed learning*, and digital literacies or what is referred to here as *multimodal meaning making*. Although these areas are not exhaustive features of 21st century learning frameworks, they represent significant areas that also resonate with current directions in theory and research focused on young people's learning and innovation in a digital age. They also appear to relate well with what many young people are doing musically "beyond the walls of K–12" (Webster, 2014, p. 208). These areas are therefore likely to provide useful insights into young people's everyday musical lives from the perspectives of youth themselves.

A main consideration in proposing a framework for innovative learners is the identification and selection of significant constructs or conceptual elements associated with each of the three areas within the framework. The constructs that were selected were chosen to provide a diverse range of elements that represent important features of today's youth and their musical engagement. Although the list of constructs selected is not exhaustive of all the possibilities, they were selected to include those that feature prominently in current literature and that are capable of offering an insight into what Webster (2014) describes as "the pervasive role that music plays in the lives of today's youth and our continued attempt to make better systems of instruction to take advantage of this reality" (p. 206). A further consideration involved examining the assumptions of how we identify, define, and use constructs in research and to ensure that the constructs selected for the proposed framework are adequately defined or delineated. Common errors include defining constructs in ways that are too general, too narrow, lacking in face validity, misidentified, or attributed to a single construct when it is actually multiple constructs (Cook, Zheng, & Blaz, 2009). What is of particular importance is that researchers define or delineate adequately the constructs they are using so the measures that correspond to particular constructs are clear, transparent and have face validity. The literature review that follows in Chapter 2 aims to provide the necessary background to delineate clearly and coherently each construct being used in the proposed framework for understanding innovative learners.

As indicated in Figure 1.1, the proposed framework for innovative learners includes three broad, interrelated areas and six main constructs, as follows: 1) *connecting* (constructs #1 connectedness and #2 participatory culture), 2) *self-directed learning* (constructs #3 self-regulation and #4 informal music learning), and 3) *multimodal meaning making* (constructs #5 multimodal literacies and #6 multimodal music resources).

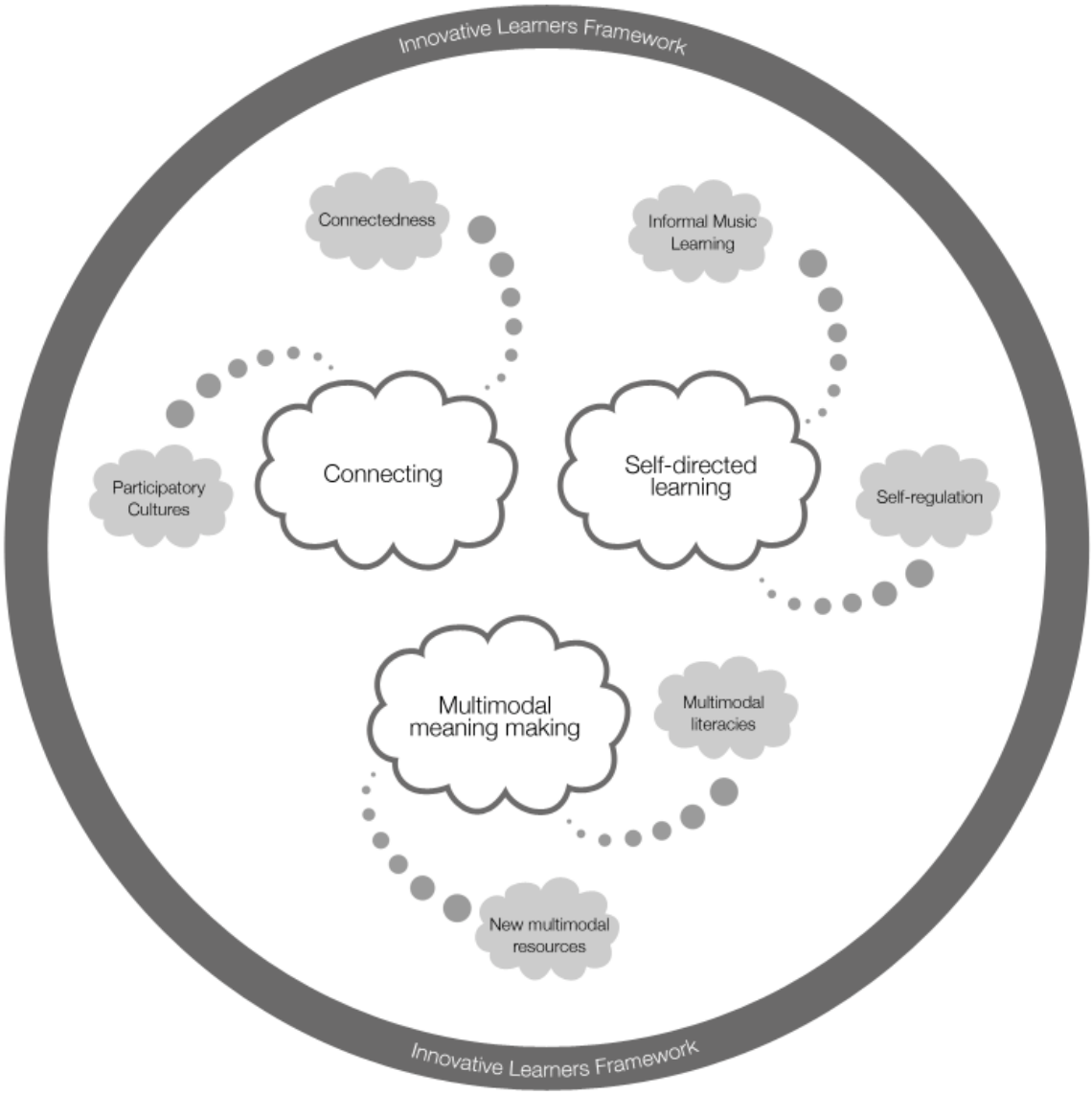

Figure 1.1. Proposed framework for understanding innovative learners

The following provides a more detailed overview of the proposed framework, which is further described in relation to the relevant literature reviewed in Chapter 2.

- *Connecting* tackles the systemic ecologies of an interconnected and digital society, in which the constructs of connectedness (e.g., OECD, 2012) and participatory cultures (e.g., Jenkins, 2009) are emphasized in how young people connect within their musical lives. This area describes a combination of in-person and virtual participation, interaction, and communication as a part of how young people are engaging in their daily lives (Jenkins, 2009). Within this area, gender differences are often apparent, in which girls are more likely to report greater connectedness, as well as social reliance on others when

seeking help (e.g., Garland & Zigler, 1994; Karcher & Lee, 2002). [*This area and its constructs also address the way that digital advances in the 21st century have burgeoned a media convergence culture, where old and new media are intermeshed, in which these technologies have provided young people with a complex array of possibilities for musical communication, engagement, and learning, in tandem with traditional music learning techniques*.]

- *Self-directed learning* directly addresses how young people are taking initiative, "with or without the help of others," to assess and evaluate their learning needs and outcomes, and go forth and implement these strategies for their personally relevant learning (Knowles, as cited in Wulff, Hanor, & Bulik, 2001, p. 153). The two constructs within this area are rooted around young people's informal learning (musically, and as a whole), in which the constructs focus on self-regulation in musical learning (e.g., McPherson & Renwick, 2011), and informal music learning (e.g., Green, 2007). This area is where young people demonstrate a self- and/or peer-based passion to acquire knowledge and skills in an area they are interested in, extending beyond the confines of traditional or formalized education (Green, 2007), and into the technologically infused age.
- *Multimodal meaning making* converges around the multimodal ways that young people are engaging and making meaning and sense within their daily lives, where the focus is on constructs associated with multimodal literacies (e.g., Jewitt & Kress, 2003), and multimodal musical resources available within young people's digitally-infused lives (e.g., Kress & Van Leeuwan, 2006). Further, this area encompasses multimodal interactions, meaning-making and literacies, both in and through digital media (Kress, 2010), where multimodal meaning making provides a way for youth to connect and develop a sense of self beyond the traditional literacies of text. These literacies account for all the different ways in which meaning can be created and communicated. These various modes of meaning-making are situated in cultural, social, and historical contexts, and include the modal resources of "image, gaze, gesture, movement, speech and sound effect" (Kress & Jewitt, 2003, p. 1), where young people are building on these multimodal resources to invent new and complex forms of musical creations.

Chapter 2 provides a detailed review of each of these three areas to better unpack the constructs associated with innovative learners. After unpacking these areas and their six constructs within the context of established theory and research, an interview study followed by 11 case study-style vignettes will examine the extent to which young people engaged in musical activities exhibit the constructs associated with the proposed framework and how these constructs manifest themselves among diverse innovative learners within the context of their musical lives.

1.3. Research questions and contexts

This exploratory research focuses on how young people describe their musical worlds within a digital age in order to address two main research questions:

> 1) What are young learners who are engaged in musical activities really doing within the contexts of their daily lives, and how might today's digital technology mediate these activities?
>
> 2) How are young learners, identified as innovative learners, engaging in these musical activities with digital technology actually using a combination of (1) connecting, (2) self-regulation, and (3) multimodal exploration to frame their meaning making?

To address the research questions, one-on-one interviews were conducted with 93 young people aged 11 to 18 years (females = 35; males = 58) attending elementary, middle, and secondary schools in the Greater Vancouver Regional District. The interviews focused on eliciting detailed descriptions from young people about their musical lives. To obtain a comprehensive response from the participants, the interviews were structured around understanding more about young people's favourite musical activities, drawing on Rose-Krasnor's (2009) theoretical framework of youth engagement to explore the personal, social, and environmental factors and influences that initiate participants' involvement in activities, sustain their involvement over time, and that participants' perceive as the benefits or impacts emerging from their engagement in musical activities. A content analysis approach, involving the integration of non-inferential descriptive statistics and qualitative data, was used to identify the prevalence of innovative learners using the proposed framework. The six constructs within the framework were further explored through case studies of innovative learners identified through the interview study. As Yin (2003) describes, a case study allows for the investigation of "contemporary phenomenon within its real life context" and when it is not clear where the boundaries exist between the phenomenon and the context (p. 13).

Due to the continually evolving and ubiquitous nature of technology within our society, and the constant new developments and changes that these technologies

undergo at what seems to be an insurmountable pace, it is assumed within this thesis that the discussions of technology refer to the developments and innovations that are available to the general public and that young people have access to at the time of publication (not including emergent technological developments that are within beta testing or research and development, such as advanced augmented reality or fully immersive wearable technology). Further, the data is situated within the current temporal contexts of a digital age, which in 2014 presents a gamut of new developments in both technological advances, as well as discussions about the use of digital technology within daily life, and further within educational contexts.

As mentioned, the research was conducted in Canada, therefore it is pertinent to note that the geographic location of the learners in this study provide a specific context that is particular to young people between the ages of 11-18 years of age within British Columbia, Canada. In British Columbian elementary schools (Grades K to 7), music lessons are a part of the curriculum, in which music learners typically sing, play instruments (e.g., ukulele or recorder), learn rhythmic patterns, collaborate with their peers, and perform within their classroom contexts (Province of British Columbia Ministry of Education, 2010). Moving into secondary school (Grades 8 to 12), the students in Grade 8 and 9 are offered one music class as a part of the "ministry-authorized courses," though moving into Grade 10 and onwards, learners have a variety of courses available to them, such as Concert Choir, Vocal Jazz, Composition, or Guitar (Province of British Columbia Ministry of Education, 2004, p. 6). The students have flexibility in their later school years in whether they are involved in music as a part of their courses, as they can take other non-music courses to fulfill their Fine Arts/Applied Skills credit requirements. While there are curriculum plans and expected outcomes in place, music education within classrooms is not equal across all of British Columbia. There are some school districts that have more established music programs, or private schools that offer a more comprehensive music offering.

These geographic differences can create a disparity in the types of music curriculum that is available to students at a particular school. Yet, the size of a school doesn't always dictate better music programs. In the case of more rural regions of British Columbia, while there may be declining enrolment, there may be more secure and defined music programs in the classroom due to an increased involvement and interest

by the community (Prest, 2013). From a cursory overview of music education in British Columbia, there are well-defined curricular outcomes intended for students in elementary and secondary school, though more advanced music lessons, or diversity in musical learning opportunities are only designed for senior secondary learners. Further, "large ensembles" are quite commonly what comes to mind when mentioning "music education" (Mantie, 2012, p. 99), therefore the notion of formal music education takes on particular connotations within Canadian contexts. Upon looking at the music programs offered through the Vancouver Regional School District or the music curriculum outcomes from the province of British Columbia, this concept of the large ensemble focuses more on programs like orchestra, strings, or vocal choir, rather than marching band as could be found when searching the literature for music programs or music teacher education in the United States (e.g., Wang & Humphreys, 2009). An increasing form of music education within local schools in the Greater Vancouver Regional District is Rock Band-style programs (Coquitlam, BC), in which the students learn how to construct, play in, and perform as a part of a rock band. These sorts of programs are not consistent across all schools, with some school districts focusing on other musical forums such as String programs (Vancouver, BC), or others only covering the basic curriculum requirements. Some of the schools within this study had very comprehensive rock school or orchestra programs within their course offerings, though the range of music provision across the participants in the study was diverse.

Outside of formal music education, young people, such as the participants in this study, have the opportunity to seek out music learning through private music schools or teachers, as well as community music programs through parks and recreation classes, or other community or social events such as church. As will be discussed later in Chapter 2, there has been an increase in young people seeking out music skills and knowledge through informal ways of learning (e.g., Green, 2007).

1.4. Key terms and definitions

As the use of particular terms to denote certain technological concepts may evolve through time or changing uses, (e.g., the term *smartphone* has evolved over the past decade to adapt to changing multimodal technologies, this thesis will attempt to

provide explanations of potentially ambiguous terms, but cannot guarantee that all terms will be covered, nor that the definitions of certain terms may be out of date by the time of print or reading.

In addition to the evolving nature of technological terms, Webster (1990) notes that the use of the word "creativity" has become problematic over time. It has been over used, in a plethora of contexts, in which the "meaning and power, especially in terms of music and children" (p. 22) has been lost. However, it is possible to provide a basis for where creative thinking is situated within music learning contexts using Webster's (1990) description. Webster notes that creative thinking is characterized by the "emphasis on the role of musical imagination," the "theoretical modeling of the creative process," "new approaches to the measurement of creative aptitude," the "systematic observation of creative behaviour," and perhaps more importantly for the present research, the use of technology to stimulate creative thought (p. 23). This description of creative thinking offers a very clear explanation of where it is situated within musical learning, and further, I posit that it is also deeply embedded within each of the constructs of *innovative learning.* Therefore, a key assumption of this research is that creative thinking, as described by Webster, is continually operating within all three interrelated areas of the proposed framework for innovative learners. To reiterate, within this research, the concept of creative thinking is not discounted, nor treated as a separate component of an innovative musical learner; rather, it is assumed to be a central feature underpinning of all areas that embody an innovative learner.

Finally, it is essential to note that just as creative thinking is embedded within each of the constructs within the framework for innovative learners, the presence of digital technologies is also deeply rooted. In other words, both creative thinking and digital technology are at the heart of each interrelated area and discussion about the music engagement of innovative learners within our current society.

It can be difficult to provide consistent definitions for many of the terms that are used to discuss technology and emerging forms of 21st century learning, as certain terminology may differ based on prior assumptions or contexts. To assist in the reading of this thesis, terms that may require definition or explanation are documented here:

Young people and youth within the contexts of this thesis refer to people under the age of 25 years that could be considered as "digital natives." A digital native is a person born during or after the digital age (Prensky, 2001), and where technology is a ubiquitous aspect of human daily life in first world countries. The delineation of young people or youth as being under the age of 25 years is to accommodate UNESCO's (n.d.) fluid description of youth as defined until age 24 years, after which they have tended to complete their compulsory education or have become financially independent from their parents/guardians. Within this discussion, no lower end of the age to define *youth* is given since young people are becoming increasingly literate in digital technology from an early age and are developing advanced multimodal literacies – often before textual or written literacies are developed. Further, as the inculcation of these social and multimodal technologies in daily life enculturates young people to use these technologies from early ages with ease, it is surmisable that with advancements in user-friendly and smaller form-factors, even toddlers could be considered part of this demographic in future studies.

The *21st century* often describes the mark of the calendar year of 2000, at which the 20th century concluded. For the purposes of this discussion, the 21st century also includes the emergence of a digital age, where technological innovations have become omnipresent in daily interactions, communication, and everyday life.

Digital age describes the shift from traditional industry and into a technological society, in which computers and the Internet emerged as the primary format for industry, as well as fostering growth in communication and job markets. The digital age can also be termed the information age, or the digital revolution.

Digital media describes one of two things: the first being physical devices that can contain digital data, broadcast digital content, or provide a forum for digital content or data to be displayed, created, edited, or consumed; the second type being any type of content that is stored in a digital format, including any form of multimodal content (e.g., textual, visual, audio, spatial).

Innovation (within contexts of digital media) describes the transformation, introduction, or revolution of novel things, concepts, or ideas that have the potential for positive progress and outcomes.

1.5. Summary

This dissertation is organized into six chapters. Chapter 1 introduces the idea of how young people in current society are musically and digitally engaging in their daily lives, which as a result requires further investigation into understanding the extent to which young music learners exhibit constructs thought to be associated with innovative learners in the 21st century, and what they look like within the context of today's youth and their musical lives.

Chapter 2 presents a literature review of the three areas and the six constructs that characterizes 21st century learning and innovation that are used in the proposed framework for innovative learners within our 21st century digital age. Further, the ways that these constructs are connected to innovative learners and their musical lives will be discussed.

Chapter 3 goes on to discuss the research participants and the cursory ways that they are engaging in music and digital technologies, as well as the contexts for their daily digital and musical interactions. This chapter also presents the research methodology used, how innovative learners were coded, compiled, and addressed, as well as a description of the data and the materials used in the study, data collection, and analysis procedures.

Chapter 4 presents the findings relating to the participants involvement in musical and technological activities, what the participants are doing within their musical daily lives, and the extent to which the participants exhibited aspects of the proposed framework for innovative learners. This chapter provides a descriptive analysis and discussion surrounding the framework as a whole, and the combination of different areas within the framework that the participants exhibited. Finally, the framework is used to

identify participants as innovative learners for inclusion in the more detailed case studies that follow.

Chapter 5 presents qualitative vignettes in the form of rich and detailed descriptions of the music engagement of 11 innovative learners identified within this study, and how they are exhibiting the areas and constructs within the proposed framework for innovative learners. Further, this chapter addresses the interpretations of these vignettes through the framework, and the emergent themes that materialized from the qualitative analysis.

Chapter 6 presents the conclusions drawn from the findings, and offers directions for future research based on this exploratory research and proposed framework. This chapter also looks at the potential implications for theory, knowledge, practice, policy, and curriculum development in music education. Finally, in detailing how young people are musically engaging in their technology-infused lives, the extent to which they are exhibiting areas of the proposed framework for innovative learners, and what musical engagement looks like from the perspectives and words of the youth themselves, this research hopes to provide a framework for educators, researchers, and policy makers to be able to identify and create new learning opportunities for young music learners growing up in today's digital with the aim of helping them reach their full potential. The hope is to provide learning pathways and future possibilities for promoting music learning within existing frameworks for 21st century innovation and learning that build on the findings of this study.

Chapter 2.

Literature

2.1. The constructs associated with innovative learners

Within the 21st century digital age, researchers and practitioners are interested in what innovative learning looks like; however, identifying and describing possible new forms of musical learning and ways that young people are engaging in musical activities can be challenging. Although the areas that characterize learning and innovation in the 21st century are not necessarily new (e.g., the interrelated areas of *connecting, self-directed learning,* and *multimodal meaning making* are already well-established within the literature), these areas are taking on a new significance in recent years as they align with current Canadian frameworks of 21st century forms of learning, engaging, and innovation (Alberta Education, 2011; C21 Canada, 2012; Ontario Public School Boards' Association, 2013). In particular, three broad and interrelated areas associated with innovative learners are presented and discussed in this chapter. Although each of the three areas will have aspects that overlap, they are separated here for clarity and to highlight their particular significance for young people's music engagement in today's digital age. The construction of the literature review and, as will be discussed later in Chapter 3, the development of the framework for innovative learners, were intertwined, and highly cyclical and iterative in nature. Both evolved in tandem due to continual investigations into the relevant literature associated with young music learners in the 21st century. Further, the compiling of the literature, as well as the identification of the interrelated areas and constructs, emerged through a form of thematic analysis of the literature.

As the conceptualization of an innovative learner is extremely interrelated, complex, and contextual, it can be difficult to visualize what this sort of young person

might look like within the context of their musical daily life. This chapter will therefore begin by presenting a figurative scenario of an innovative learner to provide an illustration. Not all the people involved in the life of an innovative learner may be aware of all of the interrelated areas that innovative learners are exhibiting as they engage in musical activities in diverse ways and in different places (e.g., music teachers at school might have trouble describing what their music learners are doing musically with their iPhones and apps). It is hoped that the figurative scenario will provide a useful introduction to the possible multifaceted features of innovative learners' musical engagement and involvement with technology before proceeding with a detailed discussion of the literature associated with the proposed framework for innovative learners.

2.1.1. Key constructs situated in their related areas

Within the three interrelated areas that align with 21st century frameworks of learning and innovation, a further six key constructs associated with innovative learners within musical contexts were identified. A form of thematic analysis of the literature was used to identify these particular constructs within each area and extrapolate the identifying features, as detailed in this chapter as follows:

- *Connecting*, or how young people connect within their musical lives,
  - Construct #1: *Connectedness* – connecting within their systemic ecologies of an interconnected and digital society, in how they connect, communicate, and interact in their in-person or digital daily lives.
  - Construct #2: *Participatory cultures* – engaging in Jenkins' (2009) notion of participatory cultures, in which they address some or all of the five related components (e.g., strong support for creating and sharing one's creations with others).

- *Self-directed learning*, or how young people learn within their musical lives,
  - Construct #3: *Self-regulation* – exhibiting a passion for independently seeking and acquiring musical skills and resources.
  - Construct #4: *Informal music learning practices* – drawing on Green's (2007) notion of informal music learning in young people's lives, in which they address the four related components of encountering, enculturation, interaction, and self-teaching.

- *Multimodally making meaning*, or how young people multimodally make meaning and sense within their musical lives.
    - Construct #5: *Multimodal literacies* – developing a sense of self beyond traditional text-based literacies, to engage in multiple modes of musical expression, communication, and learning.
    - Construct #6: *Multimodal musical resources* – building upon their musical knowledge going beyond traditional musical resources to engage with multimodal forms of music creation and dissemination.

2.2. A figurative scenario of an innovative learner

The following figurative scenario intends to depict an example of a young person who is engaged in all three areas and exhibiting the six constructs within the proposed framework for 21st century innovative learners. This scenario is not an actual example from the data collected for the research, rather this scenario provides a composite construction that moves beyond the data, to illustrate the wide-ranging nature of youth music activity involvement in today's digital age. This figurative scenario was constructed after talking with young music learners about their musical and technological activities, as well as observing many examples of the nearly ubiquitous availability of young people's musical engagement on the Internet. These observations included young people's YouTube videos or music tutorials, blogs, vlogs, social media accounts, and young people's social interactions online with friends, strangers, and celebrities – in some cases, some young people live tweet and post vine videos of almost every aspect of their daily life leading to millions of followers (Soo Hoo, 2014). The scenario serves as an illustration of the fluidity and the interrelated nature of music and technology within an innovative learner's daily life. The aim is also to highlight how isolated or compartmentalized these activities can appear when conceptualized within the literature reviewed within this chapter in comparison to how they are enacted in daily life.

2.2.1. Figurative scenario

We are introduced to Emma, a 16-year old girl, living in a suburban neighbourhood of Vancouver. She belongs to a upper-middle class family, in which neither of her parents play any musical instruments, though she grew up always listening

to music around the house, in the car, and out at live music events with her parents. Emma attends Grade 11 at a local public secondary school.

Emma is learning to play the piano at school in her jazz band class, and electric guitar in her school band. Outside of school, she is teaching herself to play both piano and guitar via online YouTube tutorials to learn songs and skills that aren't a part of the formal classroom. She is also teaching herself to play the drums for her 'garage' band outside of school time. When her alarm clock goes off in the morning (on her iPhone) it plays a remix of her favourite song. While she gets ready for school and eats breakfast, Emma is constantly on her iPhone: checking and responding to her messages from friends, reading the news about the next big celebrity gossip, a "10-things he likes about you" article, updating her social media with her status, and taking video of her cereal to post onto Instagram and Vine. Continually through Emma's day, her main messaging format is using the app Snapchat — in which she not only shares what she is doing through video/photos that she adds captions or notes to, but through which she has instantaneous dialogue with her friends during brief seconds of communication at a time. In considering the interconnected nature of using the app Snapchat, there is no clear delineation of whether Snapchat is a contextual item due to Emma's multimodal forms of communication with her friends, or whether Snapchat is specifically a part of a current day phenomenon that has emerged through social media evolution.

By the time her Mom drops her off at school, Emma has already communicated with all of her close friends (and is still sending a Snapchat to a friend in response to the friend's video of spilling a pumpkin spice latte, all as she steps out of the car). Simultaneously, she listened to the new album out by Macklemore and Ryan Lewis for what she calls the "millionth awesome time," and in doing so, she experiences music that she attributes to "helping her relax before school." As Emma goes through her day, her iPhone is continually a part of her activities—whether chit chatting with her friends, being involved in her classwork, or documenting her experience of being excited about the end of the school day—her iPhone is never far away.

In band class, Emma and her friends are learning how to play their guitars, and have been assigned to learn to play a pop song (her group chooses an Arianna Grande song). Since they are still learning how to create chords on their guitars, they decide to

go to YouTube to look up tutorials from other youth on how to play the particular pop song on the guitar. Each of the girls go straight to their iPhones and iPads to search on YouTube for various cover songs and tutorials that other online users have created and shared. Together, they read through the comments by other users, make their own comments on the tutorials and cover songs they found helpful, or didn't particularly like, and finally agree that the best video is the one created by another teenage girl. In this tutorial video on YouTube, the user *OliviaLovesButterflies* appears to be a 15-year old girl, who only knows a few chords, but has created a YouTube Video on how to play the basic chords for the pop song. Emma's group all crowd around her iPhone and watch the video. They then start trying to use the tips and tricks on how to play the beginning chords for the song. During this process, Emma's friends also are asking her what she thinks, as they know that Emma has a bit more experience playing the guitar. It is an integrated process, where the concept of learning the song is not specifically a linear task. During this class time, their teacher comes by to see how the girls are doing with their song, and if they have any questions. Since the girls have been using the YouTube video as their source of inspiration, they don't seem to have many questions – though, they are interested in knowing the best way to hold their guitar, and how they can better project their voice when they get to singing the lyrics. Their teacher is then able to help them in this process, and bring up the girls' question to the rest of the class as a learning opportunity. The bell rings, and the girls disperse to their next class.

At the end of the school day, Emma walks home, listening to music on her iPhone via an internet radio app (e.g., Spotify, Songza). She texts her friends photos of the new guitar she would like, via SnapChat; and adds to her Pinterest board with a few new types of guitars that she likes, while tagging/sharing those photos and commenting on other people's boards. During this walk home, Emma also talks on the phone briefly to her Mom, to tell her that she is headed to Abby's house to practice guitar. Her Mom reminds her that she has to be home early today, which causes Emma to get upset at her mother. After hanging up with her Mom, Emma changes her music to play something more relaxing. At Abby's house, the girls chit chat about their day, and their weekend plans, and take funny Vine videos of themselves making funny faces and mockingly singing into a hairbrush. After spending the next half-hour tagging their video with the applicable hash tags, they then sit and watch their Vine followers (many of

which they have never met) like and comment on their 6-second video. The girls also spend time replying to other people's comments on their video, as well as watching other videos that their friends have made.

Later that evening, once Emma is back at home getting ready for bed, she remembers that she was suppose to read a chapter of a book for her History class, as well as study the finger charts for her piano part in tomorrow's jazz band class. Since she doesn't feel like walking all the way down the stairs to get her books out of her bag, she downloads the book onto her iPad and reads it in bed, marking notes and questions into the digital comments section. Instead of getting her piano part out of her bag, she also decides to Google the piano part instead, and reads through the short notes on the particular song. Emma bounces back and forth between doing non-music homework and her music homework or practice, since she finds that she can get her English assignments done quicker, when she is playing on her guitar and thinking of lyrics.

On the weekend, Emma is at home picking at her guitar after her friends had come over to practice for their home band (which the four of them—Emma, Abby, Sarah and Kate—call a garage band, even though they practice in the basement). Emma realizes that she and her friends aren't very good at playing the guitar, but at least she knew the four chords needed to play the rock song they were working on. Emma then spends the next couple hours using her iPhone to record a video of her playing the guitar chords, explaining the process of playing the first part of the song, and then proceeds to try to play and sing the song from start until end. Emma then uses a movie-making app (note: rather than using established apps like iMovie or MovieMaker, Emma and her friends will download a new movie making app whenever they find a new one in the app store, or one of them discovers a new one) to put the video together. She adds fun text and images that are meaningful and relevant to her (e.g., hearts and flowers to represent music notes or guitar tabs). By simply pressing a button in the app, her video is automatically upload to YouTube, Vine, or any of the other social media she feels like. She then sends the link to all her friends, as she knows that her video will help them learn those chords. Emma is excited to see 80 likes on her video within the first hour, and most of the likes are not even from people she knows. In the comments section, other young people and adults start to post helpful comments on how she can improve, and one other teenager posted a link to his video that shows the advanced guitar chords

and strumming patterns for this song. Emma is hopeful to get many more likes and comments on her post, and posts a Twitter and Instagram photo of her and her guitar with the post: “I’m a rock-star guitarist! Check out my epic tutorial! #Musician #awesome @AbbyCat98 @SaraCoolHair.” Her post mentions two of her friends from her home band, who immediately get notifications about Emma’s post. Abby and Sarah then message her back on Twitter with encouraging statements and discussions about doing other tutorials together.

Surprisingly, since Emma is only just beginning to learn how to play her guitar, she sometimes says that she doesn’t always feel like a musician—though when asked about her musical activities, she will very boisterously say that “Music is *everything* in my life! I wouldn’t know what I would do without it! I wouldn’t be as confident!” Often, when discussing her musical and artistic activities, Emma is not shy in saying that she loves listening to music videos, and that without music she thinks she would just be nothing. While prone to statements of over-exaggeration, the role of music in her life is definitely prominent. Emma often talks about wanting to become a musician “in-real-life” and paid to something she loves, though her discussions about that don’t often come up with her friends and she doesn’t seem to have a clear idea or plan of how to make her dream a reality.

By the end of the weekend, Emma has not only created content that she has shared with her friends and her virtual community, she has also received feedback on her YouTube Video. Emma decides to spend all Sunday afternoon working on learning the more advanced guitar strumming for the song, but she ends up never picking up the guitar, rather she spends the entire time looking up other tutorials and other music that she might like to play. All is not wasted though in that time, as Emma makes sure to add all the links and articles she found to her Pinterest board that she uses to save items for her band class, and she is excited to share this with her friends at school on Monday.

At lunch on Monday, while Emma is out at Starbucks with her friends, Kate mentions that her family is having a backyard barbeque this coming weekend and she is inviting all her friends. Emma quickly texts her Mom for permission to go, and quickly gets a response from her Mom, and immediately tells Kate that she is able to come. In the past, Emma has always enjoyed Kate’s family barbeques, since her “cool” Uncle

Sam plays the guitar around the fire pit, and they all sing songs together. Actually, Emma recollects, these guitar sing-alongs have really been one of the reasons she started to get interested in playing the guitar to begin with. The reason Emma has continued with playing the guitar though was due to her love of seeing Taylor Swift playing and singing songs in concert and in her videos. Emma will often take video clips of Taylor Swift's videos and remix them to have her own voice singing the songs over top (instead of the original vocal tracks). Emma will often post these onto her Instagram and Vine accounts, though not as much lately, as her musical interests are always changing.

2.3. Connecting

Perhaps the most prevalent area of 21st century learning and innovation is the notion of *connecting*. Young people are involved in connections and relationships with their family, peers, teachers, and on a wider level, in their interactions within the contexts of their community and digital society. Youth today are connecting within their daily musical lives and technology encompasses the ways in which many young people interact, socialize, and communicate musically. Music plays an important role in young people's lives, and music itself, and the artistic values that are placed on involvement in musical activities, are contextually and socio-culturally determined (Gruhn, 2006). The two constructs identified within this area of connecting are: 1) connectedness, and 2) participatory cultures. Each construct will be detailed as a part of the larger area of connecting, while providing insights into how these constructs are associated with young people's musical lives.

2.3.1. Construct #1: Connectedness

Connectedness has an impact on all areas of human activity; there is "the capacity to benefit from connectivity for personal, social, work or economic purposes" (OECD, 2012, p. 15). If connectedness is more about the "ability to be connected and seizing the opportunities that connectedness offers" (OECD, 2012, p. 15), rather than the actual technology itself, then aspects of connectedness among innovative learners is not limited to or directed specifically at young people's involvement with digital

technologies. Instead, connectedness conveys the opportunities that are afforded through being connected, where the "attitudes and social values" of young people determine their technology use (OECD, 2012, p. 101). As already noted, digital technologies are infused into each of the three areas that are associated with innovative learners. However, the usage of technology to exhibit connectedness is not always a given and may not be part of how young people describe their involvement. Many aspects of how young people are connecting are rooted in our digital age, but more importantly to understanding connectedness is that regardless of actual technology usage, connecting is about active engagement in connected ways of socializing and communicating.

Social connectedness, communication, and learning in a digital age

Technological advances within the past decade have led to a flourishing in the ways that both young people and adults are able to express themselves, interact, and communicate in everyday life. The Apple iPhone 3GS (capable of taking photos) was first released in Canada on June 19, 2009 (History of the iPhone, n.d.), though adoption of the device was likely somewhat slower due to it only being available on one cellphone carrier in Canada compared to American markets that had multiple carriers. Today, Canadian youth are gaining access to smartphones at younger ages, with "one-quarter (24%) of students in Grade 4, half (52%) of students in Grade 7, and 85 percent of students in Grade 11" having their own cell phone, and many also sharing a phone with someone else (Steeves, 2014, p. 10). Young Canadians are using technology for communicating, socializing online, searching for knowledge, and expressing themselves, with some research demonstrating increasing uses of these technologies for the purpose of civic engagement (Jenkins, 2009; Steeves, 2014). When considering young people's social interactions with others online, such as Facebook or Instagram, it is more common among older (Grade 7 onward) youth than younger youth (Steeves, 2014). This finding may be indicative of simply having more access to technologies enabling young people to become more invested in it over time, or possibly it may be a consequence of strict social media regulations not allowing young people under the age of 13 to utilize these platforms for social communication and expression. Regardless, 32% of Canadian youth between Grade 4-6 report having accounts on Facebook (Steeves, 2014), which only fortifies the importance of these social technologies to

young people, and their investment in using them, even if it is outside of the terms of service of the social media platform.

The affordances of digital technologies and social media have provided us with the opportunity for interactive communication and the ability to express thoughts, views, and knowledge at the touch of a button. Young people are able to create something meaningful to them, using a diverse array of resources, and through multimodal and social forms of media, they are able to share their creations and ideas with a larger community. In comparison, before the emergence of our digital age, it would seem that communication, social interactions, and learning were typically situated in relatively simplistic formats, where in-person or textual interactions and literacy were the primary way of communicating. Within formalized education, the model of learning has been one-to-many or one-on-one, where a teacher would impart knowledge to a group of students or a singular student. Informal ways of sharing knowledge and opportunities for mentorship would often be limited to a young person's specific geographic and cultural location.

Emerging technologies, and moreover the advancements of the Internet, have propelled our access to new information, and have enabled young people and adults alike to access novel forms of communication in contemporary society, all without the boundaries of a geographic location, or further, without the boundaries of socio-economic background, class, gender, or age. To convey the drastic technological changes that the 21st century has witnessed, and the prevalence of instantaneous access for communication and social interactions, one may be surprised to hear that many young people have never known a time without the Internet, or even without high speed non-dial-up Internet (Ofcom, 2014). Having immediate access to information, or being able to communicate with one's community or larger audiences with relative ease, has become the standard expectation. The concept of communication has completely transformed over the past decade and now encompasses multimodal and digital resources as the common presumption, such as TED Talks providing a way of learning about emerging research, professional development, and knowledge sharing (e.g., Coxhead & Walls, 2012; Höyer-Trollnes, 2014; Rubenstein, 2013). The majority of young people in North America have in their backpack or back pocket "digital mediums for communication, expression and multimodally engaging in one's own life," such as

instant access to social media (e.g., Twitter) on an iPhone (Peluso, 2012, p. 1). The current generation of learners has never known a time without smart devices, Internet, or even Wi-Fi, and moreover as iPods were first released in 2001, 13-year olds today have been alive for as long as these iDevices have existed (Peluso, in-press). Gardner and Davis (2013) describe this new generation as the "App Generation," though based on the complete ubiquity of iOS or Apple devices, and that the mobile revolution originated through these first devices. Peluso (in-press) suggests a more applicable term of iGeneration, to better represent the enormous transformation in learning, expression, and communication that has been manifested through these digital and multimodal devices.

The role of music within young people's connectedness has been propelled by the availability and opportunities that social and digital media have provided. Just as the youth in Jenkins' (2009) research were using online resources such as YouTube to search for tutorials for how to do various activities, it is apparent through Green's (2007) informal music learning practices that young people are building on their connectedness into a virtual space, to connect with others, and to use online resources to gain musical knowledge (e.g., YouTube tutorials on how to play a guitar song). Waldron (2013) describes online environments that cater to very specific genres of music or instruments (e.g., banjo), where online forums, videos, chats, and sharing of knowledge make it possible for participants of all ages to engage in connectedness with each other, which leads to what Jenkins (2009) calls participatory cultures. These participants in this particular situation were interested in musical learning outside of the online world, and had common interests before entering into the virtual realm, but their ability to connect provided them with the opportunity for learning, sharing, and growing as musicians. Other researchers have considered the extent to which YouTube tutorials foster connectedness between teachers and their students (Kruse & Veblen, 2012), and the use of YouTube videos in tandem with online and offline teaching (Waldron, 2011).

Connectedness and gender

Research within gaming demonstrates gendered involvement within the participatory cultures that young people are involved in (e.g., social multiplayer gaming) and their technology connectedness. This gender gap, with more males involved in this

form of gaming than females, is thought to be one of the contributing factors to the growing issue of a digital divide among males and females (Jenkins, 2009; Rideout, Vandewater, & Wartella, 2003). While gender is not a barrier to young people's creation of content, it may be an indication of possible gender gaps in the depth and type of involvement and connectedness that these learners experience when engaging with these technologies.

Within the research on adults' technology usage, it was found that males were more likely to use technology overall, but women were more likely to use the Internet (OECD, 2012). This finding may be due to women being involved in more activities to do with socializing and communication. However, it is illuminating to see that higher usage of technology is occurring among males, thus highlighting a gender gap in the types and amounts of technology being used. Since experience with a technology may lead to higher levels of confidence in using other varieties of novel devices, this may signal a concern for young females. For example, among young children it was found that boys were more likely to be involved in gaming than girls, and within their teenage years, males were 49% more likely to play video games than their female peers (Rideout et al., 2003). As involvement in video games often leads to participation in other technologies, it is a realistic consideration that music video games (e.g., Guitar Hero) may have a gender divide as well, though very little research has looked at this potential divide.

When considering the role of connectedness in relation to girls and boys, the types of mentors and role models that they connect with may differ. Karcher and Lee (2002) describe in their research on connectedness that girls were more likely to report greater connectedness across their relationships. Further, when considering the action of seeking help in learning, females were more likely to seek help or mentorship from peers or adults, whereas males reported more negative views towards help-seeking attitudes and behaviours (Garland & Zigler, 1994). Karcher and Lee's (2002) research discussed how females within a society that is patriarchal in nature would be more likely to be "socialized to care more about and be more involved in relationships than boys" (p. 94). Considering the differences in gender, it may be that young women and girls are relying on others more than males to seek out their musical knowledge and skills. As will be discussed within the area of self-directed learning, innovative learners are more

likely to engage in self-initiatives to seek and acquire musical knowledge. There may be important gender differences involved in different self-initiative behaviours.

Two assumptions appear to be engrained within this digitally infused generation dubbed "The New Millennium Learners," as follows: 1) the role of technology in young people lives is an inherent part of their "social and cultural practices," in which without digital media, new forms of learning and communication would not exist, and 2) as described by the OECD (2012) report and Jenkins' (2009) white paper, this new generation of learners is creating, sharing, organizing, and shaping their knowledge in fundamentally different ways than previous generations, which include their parents, teachers, and even those that have developed existing educational curricula. Further, as a direct implication to teaching this new generation of learners, the expectations of young people in obtaining knowledge and their learning experiences are radically different, as will be seen within the discussion of self-directed learning.

2.3.2. Construct #2: Participatory cultures

The term 'participatory cultures' can bring to mind a variety of definitions, and in many cases, the term is related to media technologies involving both old (pre digital) and new (digital and interactive) media (Jenkins, 2006a). At the core, participatory cultures hold the possibility for the developing skills and competencies that not only hold value with the present-day workforce, they allow for diversified cultural expression, creative expression, and opportunities for civic engagement (Jenkins, 2009, p. xii). In Jenkins' (2009) White Paper on *Confronting the Challenges of Participatory Culture: Media Education for the 21st century*, he defines this media-based participatory culture as one that has/is:

1. Relatively low barriers to artistic expression and civic engagement
2. Strong support for creating and sharing one's creations with others
3. Some type of informal mentorship whereby what is known by the most experienced is passed along to novices
4. Where members believe that their contributions matter
5. Where members feel some degree of social connection with one another (at the least they care about others' opinions of what they have created). (Jenkins, 2009, p. xiii)

Examples of participatory cultures can include a) formal and informal *affiliations* through online social communities such as Facebook and YouTube and through online gaming communities such as game clans or SimCity, b) *expression* and production of "new creative forms" such as "digital sampling," "fan videos," "mash-ups," and modified music videos, c) *collaborative authorship and problem-solving*, where informal and formal groups work together to create and develop knowledge through crowd-sourcing, and d) *circulating media and content* through such forums as podcasts, blogs, or [RSS feeds] (Jenkins, 2009, p. xii; Jenkins 2006b). Considering that within *participatory cultures*, the characteristics that young people exhibit are highly social in nature, in which their interactions with others are fuelled by their participation and contributions within a group or community. Therefore, the inclusion of participatory cultures as an aspect of connectedness provides an important description of the digital nature of young people' everyday lives.

Connecting, participatory cultures, and musical lives

Within *participatory cultures*, it is possible for youth to acquire knowledge and expertise in musical creation, performance, and various other musical capabilities. A feature of participatory cultures is that they enable a community of informal mentorship and support. Within Green's (2008a) book *Music, Informal Learning and the School: A New Classroom Pedagogy,* she expands on her discussions of informal learning to explain that informal learning holds the capability of accommodating any type of learning, regardless of prior training, socioeconomic status, or interests. This is in agreement with the capabilities of participatory cultures, where background, class, gender, or ages are for the most part, irrelevant.

Looking back at the figurative scenario of our example teen, Emma, we see the fluid ways that she is able to socialize and connect both in-person and online using a combination of methods and technologies with her friends and her larger global community – all through access to an iPhone. It is possible for youth to engage in informal learning practices in addition to being involved in participatory cultures; for example, they are able to use their webcam to record themselves playing a complex guitar piece that they became interested in through enculturation in their musical environment, while their ability to operate the webcam is based on their encountering

these technologies outside of the formal school setting. In this common scenario, the youth learned the piece via listening to recorded music, with very little or no adult supervision (similar to Green's (2007) self-teaching); within their video they then explain the steps they used to play the song, such as finger placement. They then use video editing programs to edit the sound and video, modify visual and sound features, and then upload it onto the YouTube website and call it a 'tutorial,' though in this action alone, there is no support, feedback, or mentorship involved. Once a video is posted on the YouTube website, young people have the ability to observe just how many people have viewed their video, as the site provides viewer counts and the ability to "like" or "dislike" a particular video. They may receive comments, feedback, suggestions, and critique by those in the online community (some with more or less experience than them). They may also themselves reply to comments or questions with advice for other learners; and many of the community members may promote/review the video via social networking sites such as Facebook, Twitter, or even on their own blogs.

Within this online community, youth can feel that others not only provide helpful feedback about their playing and teaching skills, they also have the knowledge that they are an informal mentor to many other music learners (peer-to-peer learning). This is much like Green's (2007) notions of *interactions* within informal learning, as will be discussed in the interrelated area of self-directed learning and its applicable constructs. Participatory cultures are not identical to informal learning practices though, as participatory cultures tend to adapt to the changing nature of music education within a technological society with ease. They also create an interactive environment of inclusivity, where youth are able to feel that their contributions online matter, that they have a social connection with their community of viewers, and that someone cares about their musical creations. Participatory cultures are part of an existing *culture* of learning rather than an *approach* to learning, and as the literature suggests (e.g., Jenkins, 2009), they are relevant to what youth are already experiencing outside of school.

Feedback and sharing within a (virtual) community

Considering that musical activities are a significant part of many young people's everyday lives (O'Neill, 2005), it is evident that this construct of participatory culture would expand into other aspects of their lives. Being a part of a community is no longer

limited by geographical boundaries, or enculturation within one's physical community. The significant feature that emerges within participatory cultures within virtual environments—where interconnected and multimodal technologies (e.g., YouTube) provide a forum for youth to be anyone they want—is that they create opportunities for viewers to comment on what was done wrong (or right), and how the musician/creator can improve. This can all happen without judgment of the person on the screen, which helps youth to focus on their skill and expertise. Thus, it transforms the ways that feedback about a performance or a creation is communicated and received. While young people are connecting with their musical lives and learning through various forums, the role of how music education connects within their lives is also changing. These new spaces for learning go beyond traditional formal music education within a classroom model, and extend to crowd-sourced learning (Jenkins, 2006a), opportunities for informal music learning, and new ways for young people to connect that are not available within their music classrooms.

New spaces for learning

The traditional formats of music education, where knowledge is transmitted from the teacher to student have become only one option for how young people are learning music. Green (2007) provides an explanation for alternative learning possibilities through informal learning practices as the main way many popular musicians learn. For young people this might involve socializing and interacting with peers, family members, and adults who provide non-formal teaching of musical skills and knowledge. As such, these informal music learning practices demonstrate how connectedness is tied to social interactions and learning for many musical learners in contemporary society.

While the construct of connectedness at an cursory level includes young people's interactions with peers, family members, or individuals within their community that are not situated within a formal teaching capacity, Jenkins (2009) provides similar observations in that many youth are engaging in meaningful new informal learning environments (either physical or virtual) as a part of participatory cultures. These participatory cultures are forums for interactive learning that can better convey the connectivity that young people are engaging in. These learning environments are termed "affinity spaces" by James Gee (2003), where youth engage in experimental

learning and knowledge sharing in collaboration with others, rather than the conservative and solitary regimented learning environments of formal school education (Jenkins, 2009, pp. 10-11). Participatory cultures provide youth with a new sense of empowerment that they typically do not experience within formal learning contexts outside these affinity spaces.

Affinity spaces

Within virtual affinity spaces, youth are able to create new identities for themselves, where they are able to learn, share their expertise, and be a part of a knowledge sharing community that fosters creativity and expression, all without judgment of their background, ethnicity, and most importantly, age. Within these participatory cultures, such as on YouTube, the user-created video sharing site, youth are able to create, edit, remix, mash-up, modify, and the broadcast their own user-generated content in the form of videos (Jenkins, 2009, 2012). More importantly to music learning, many of these videos made by youth incorporate complex music and sound creation and editing, which they have learned by experimenting with these technologies. This involvement is void of traditional education-related worries, such as getting bad grades, as youth are able to create, express and learn music with little resistance. Gee (2005) describes how these spaces provide participants of diverse backgrounds with a place to come together and share their similar interests, goals, and purposes, though cautions that these affinity spaces are not communities of practice. A community of practice would predicate that a sense of belonging and "close-knit personal ties among people which do not necessarily always fit classrooms, workplaces, or other sites where the notion of a community of practice has been used" (Gee, 2005, p. 214). Considering that affinity spaces, through technological resources, are not solely physical spaces such as classrooms, rather they can include the virtual spaces in which interactions with others can happen "at a distance" (Gee, 2005, p. 216), these spaces for learning, creation, and sharing of knowledge go beyond communities of practice into diverse forms of social interactions and affiliations.

Within a continuum where barriers to artistic expression and social support range from high to low, it would seem that the restrictive environments of formal music education would be situated on the high barrier end, with informal music learning

practices somewhere in the middle, and participatory cultures demonstrating the lowest obstacles. The homogenous nature of formal music education is the epitome of forcing youth into groups based on age, geographic location, and perceived skill determined by standardized tests. On the other hand, interacting with musical learning within participatory cultures not only encompass many aspects of informal learning practices, it also provides support for youth to become musically creative and expressive individuals, an outlet for civic engagement, and a place to express one's values. Bloggers and online contributors can be seen as passionate "grassroots intermediaries," who are able to incite social movements, discuss arguments, or promote causes, all through the motivations and persistence of virtual collective communities (Jenkins, 2006a, p. 285). These participatory cultures provide youth with not only a vast environment for expression, but also an environment where they feel supported and heard. Participatory cultures bring forth their own benefits and issues; however, given their prevalence and the positive ways they are experienced by today's young people, it may become necessary to find ways of embedding these practices within formal music education contexts in the future.

Sharing

The initial descriptions of the construct of participatory cultures as a part of 21st century learning and innovation begin to address the interconnected and technologically fueled ways in which young people are directly connecting and engaging in constructing knowledge for and from their social community. This may be better visualized within Jenkins, Ford, and Green's (2012) description of user-generated and shared content and communities, where users use their creations as a "vehicle through which people share their particular perspectives within the world," including perspectives that may not be fully represented within mass-media or their own social circles (p. 60). This sense of sharing knowledge and meaning making then takes on deeper meaning to the members of this community. When they "spread content from one community to another, they do so because they have a stake in the circulation of these messages" and the content itself becomes "meaningful to them because it has currency within their social networks and because it facilitates conversation they want to have with their friends and families" (p. 60). And "we are moving away from a world in which some produce and many consume media toward one in which everyone has a more active stake in the culture that is

produced" (Jenkins, 2009, p.12). Jenkins (2012) also argues that new technologies "enable audiences to exert much greater impact on circulation than ever before" (p. 54), which means that creations are not ruled by corporate structures or rules and instead become the property of the community as a whole. This notion is no better represented than by looking at music, where peer-to-peer creation, sharing, and re-appropriation, as seen through the remixing and re-sharing of YouTube videos, is not only a deeply entrenched aspect of belonging to a community in which music is the key user-generated content. The ease and fluidity of access to and sharing knowledge and content is also a presupposition by this new generation of connected learners.

The construct of participatory cultures within young people's lives is one that is very different from what we are traditionally used to in our consumerist society, where the consumption of goods is related to the sense of self and status. Within participatory cultures, individuals are not only consumers; they are also producers and contributors to their community, in which they find a sense of identity (Willis, 2003).

Making is connecting

As seen within both constructs of connectedness and participatory cultures, the ways in which young people are engaging in complex, interconnected, and multimodal forms of musical expression and learning, and more over connecting with their creations, have been largely fostered by the significant role of digital media in their everyday lives. The ways that they are creating, communicating, and learning, both on- and off-line, have led to what Gauntlett (2011) describes as young people's shift from a "sit-back-and-be-told" culture, to a "making-and-doing" culture (p. 6). This culture of *Making is Connecting* is inherently multimodal in nature, and provides additional reference points to better understand the connections young people are making in their daily lives, and confirms the characteristics laid out through Jenkins' (2006) descriptions of participatory cultures, as key components of how they are connecting.

As we have seen, digital and social technologies have expanded our possibilities for communication, expression, and learning, as these forms of media are multimodal, intuitive, and a part of daily life. These technologies have afforded diverse ways of gathering knowledge, and thus, diverse ways of learning and connecting. How young

people are connecting within their daily lives is no longer passive, it is active. Gauntlett's (2011) description of *Making is Connecting* provides additional explanations to understanding young people's active engagement with technology and their creations and *how they connect*. His model of this "making-and-doing" culture consists of three principles:

- Making is connecting because you have to connect things together (materials, ideas, or both) to make something new;
- Making is connecting because acts of creativity usually involve, at some point, a social dimension and connect us with other people;
- And making is connecting because through making things and sharing them in the world, we increase our engagement and connection with our social and physical environments. (Gauntlett, 2011, p. 2)

Within Gauntlett's making-and-doing culture, the construct of connectedness is revealed to be something that is a deeply rooted in young people's lives. As such, the making-and-doing culture consists of a "social dimension and connection with other people" that is congruent with aspects of participatory cultures where connecting, sharing creations with others, and finding increased opportunities for civic engagement are key tenets (Gauntlett, 2011, p. 2).

2.3.3. Facilitating learning opportunities within the two constructs identified within the area of connecting: Pedagogical concerns

The picture of how youth are "plugged-in" to cultures of connecting is painted by Jenkins (2009) in such a way that equal benefits and consequences for this emergent culture can be seen. While Jenkins' (2009) research notes the main competencies that emerge from participatory cultures, he also recognizes the flaws of an informal way of learning within a technological culture. He identifies three pedagogical concerns, which I suggest might also provide music educators with key ideas for helping educate their students to become informed citizens of physical and virtual informal musical worlds. Youth require someone to facilitate discourse and critical thinking about informal learning practices within technological settings.

The first concern that Jenkins (2009) identifies is the "participation gap," where youth do not all possess the same skills and abilities to navigate technology, nor do they all possess identical access to these new technologies, which leads to a "digital divide" (p. 16). In response, many teachers do not incorporate these mediums into their classrooms, or if they do, they require that all students have equal access to the computers or media. However, this approach also reduces possibilities for creative expression among youth already engaging with these technologies in advanced ways, and it increases the knowledge gap for students who have little to no experience with these technologies as they may not be able to keep up to the same pace as their peers. From this first concern, the role of the music teacher is essential, as creating opportunities for more advanced learners to flourish, and for new learners to gain knowledge and skills through these technologies, presents educators with a new role. The music educator is then able to play the role of facilitator for peer-to-peer learning opportunities and for their students to take on leadership roles. The youth that are on the lower end of this digital divide still contribute through interactions and communication with others, but the key point to speak to within this pedagogical concern is that there is a spectrum of youth involved in this construct. Within this spectrum, there are unequal opportunities for exploring the affordances of connectedness, though having educators be aware of and facilitate these interactions among their students may provide youth with increased opportunities to build on their connectedness through peer mentorships.

The second concern for Jenkins (2009) is the "transparency problem," which refers to youth not always having the knowledge and awareness to understand critically the messages they encounter within the media. Youth require guidance to help them decipher and separate fact from fiction, and to understand that not all information they interact with online is fully factual. Even in music education contexts, the teacher can create opportunities to help youth make connections between what they are learning online, and what the underlying messages might be. Take for example, the figurative scenario where Emma was learning to sing via tutorials broadcast by other teens on YouTube: the content, lyrics, and messages in the song she was learning may potentially be morally, ethically, or socially offensive, yet without critical thought or discussion, Emma and her peers may ignore or be oblivious to these underlying messages.

Finally, the third concern for Jenkins (2009) is the "ethics challenge," which he describes as stemming from the anonymity of identities on the Internet. Many youth disclose personal details that can be used by disreputable individuals or organizations that prey on youth. It is necessary for youth to be able to differentiate what is "good" and "bad" online, and to connect this knowledge with what is ethical in the physical world. For instance, within the online communities where music can downloaded for listening, learning, remixing, or adapting for their own creative expression, youth need to have critical discussions about whether appropriating someone else's music is suitable behaviour, or how posting a video online of themselves playing a cover song by another artist may have legal ramifications.

Although Jenkins' (2009) concerns do not specifically focus on the unique aspects of musical learning and education and how young people are connecting within their musical lives as innovative learners, they do convey possible areas for music educators to delve into and are certainly worthy of further investigation.

2.3.4. Key features of connecting

The New London Group, a collective of educators, researchers, and experts, attempted to define the general mission of education as having the primary purpose of ensuring that all students are able to "benefit from learning [and engaging] in ways that allow them to participate fully in [creative], public, community, and economic life" (as cited in Cope & Kalantzis, 2003, p. 9). From the outset, this mission for education seems to create an inclusive environment of creative expression, which aligns with the foundational capacity of connectedness (OECD, 2012) that is enabled through an ease of participation that happens within a culture of connection. Within the proposed framework for innovative learners, the area *connecting* is associated with two conceptual elements; connectedness (OECD, 2012) and participatory cultures (Jenkins, 2009). Within connectedness, young people are connecting within their musical lives in fluid and interconnected ways (with technology underpinning their socio-cultural contexts, as seen in participatory cultures). Within participatory cultures, connecting goes beyond social interactions; it involves personal, social, and systemic forms of connectedness that include new spaces for learning that can occur both online and in-person, in which

technology has propelled new opportunities for young music learners. Both of these key constructs exist within the literature, though as separated entities, in which the inclusion of music is often missing, or only an addendum. As such, there remains much space for investigation of the extent that these constructs are associated with 21st century learning and innovation within the contexts of music education.

2.4. Self-directed learning

Through the advancements of technology within this digital age, young people are now able to take on active roles in their learning, and are more self-directed in the ways they go forth and acquire knowledge and develop skill. Well-established within the literature, Knowles (1975) describes the broad definition of *self-directed learning* as a process,

> in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (Knowles, as cited in Wulff, Hanor, & Bulik, 2001, p. 153)

Self-directed learning is an active process that includes cognitive and motivational aspects of acquiring and building on knowledge, in which cognitive aspects can be seen in how learners are able to build on knowledge and skills that they do not possess yet (Gureckis & Markant, 2012). It also includes the development of the capacity to monitor and control their learning (McPherson & Renwick, 2011), as well as the motivational aspects of the learners' implementation of their learning in "meaningful and worthwhile" approaches (Garrison, 1997, p. 18) in relation to the personal, social, and environmental purposes that are relevant to them.

Delving into self-directed learning further, it is clear that learners become "empowered to take increasingly more responsibility for various decisions associated" with their learning (Hiemstra, 1999, p. 9). Self-direction is on a spectrum that can vary from learner to learner; however, it does not denote that it occurs only in isolation as learners can apply their self-directed knowledge to other situations (Hiemstra, 1999). From within these definitions of self-directed learning, the concepts of the learner taking

on their own initiative to shape their own learning, as well as constructing their own form of learning, can be viewed as prominent aspects of learning in musical contexts in a digital age. The two constructs that are discussed within this area of self-directed learning are: 1) self-regulation, and 2) informal music learning practices. Within these two constructs, learners tap into their personal initiative, while using various cognitive and motivational behaviours to achieve their goals.

2.4.1. Construct #3: Self-regulation

According to McPherson and Renwick (2011), "learning a musical instrument requires a great deal of self-regulation" (p. 235), which in expanding this statement to incorporate not just instruments, but all musical learning, provides an basis for this construct within the diverse musical activities and learning that young people are engaging in. Within McPherson and Renwick's (2011) research, a main part of self-regulation includes young people developing their own ways of practicing and learning (similar to Green's (2007) informal music learning practices), choosing the location for their learning to occur, as well as having the initiative to actively seek out mentorship or knowledge from other people or resources.

Self-regulation within the contexts of musical learning can be explained as the behaviours that young people exhibit when practicing and learning music, in which they build "their capacity to monitor and control their own learning" (McPherson & Renwick, 2001, p. 184). The approaches that young people employ for self-regulated practice and learning often involve the nurturing of their "ability to react by modifying and adapting one's playing based on the feedback obtained when performing" (McPherson & Renwick, 2001, p. 177).

McPherson and Renwick's (2001, 2011) longitudinal study followed music learners between the ages of 7–9 years. They conducted interviews with the music learners, their parents, and teachers, to better investigate self-regulation as a part of young people's mastery of their musical skills. Their study found that when self-regulation was "reinterpreted for musical practice" it contained six dimensions:

1. *Motive*—feeling free to and capable of deciding whether to practice.

2. *Method*—planning and employing suitable strategies when practising.
3. *Time*—consistency of practice and time management.
4. *Performance outcomes*—monitoring, evaluating and controlling performance.
5. *Physical environment*—structuring the practice environment (e.g. away from distractions).
6. *Social factors*—actively seeking information that might assist (e.g. from another family member, teacher, practice diary or method book). (McPherson & Renwick, 2001, pp. 170-171)

Each of these dimensions of self-regulation contributes to the diverse ways that young people are acquiring their musical skills, and becoming musically knowledgeable. The ability for young music learners to have a choice in these six dimensions expands the notion of musical learning outside of formal music classrooms, to enable the learners to have an active role in obtaining and building on their musical skills. Due to the self-directed nature of this form of musical learning, it is evident that young people are able to be involved in self-regulation in comprehensive and independent ways, and where formalized education does not hold a strong bearing. This emphasizes the active role that young people have in their learning.

McPherson and Renwick (2001) described that part of self-regulation within musical learning is associated with the learners' ability to deal with, ignore, or build from mistakes and errors as a part of their practicing. However, 21st century digital and mobile technologies did not featured within this research. Given its increase in the lives of youth today it would be interesting to study the impact on media and digitally infused self-regulatory behaviours. Johnson (2005) describes young people's development of skills and knowledge as being rooted in exploration, where trial and error, or learning by playing, is how today's generation dives into learning or trying something new. Traditional forms of self-regulation appear to have moved forward into the digital age, in which even the conceptualization of trial and error has been transformed due to the ease of use and opportunities made possible through technology (e.g., auto-back ups, undo buttons, and digital archives make it feasible to never worry about accidentally deleting something, or truly making an irreversible mistake). Looking at how crowd-sourced learning is one of the many contemporary ways that young people are exploring knowledge, and acquiring skills, through their own initiative and interest, the increasing

availability and sheer amount of information available at the touch of a button further redefines the barriers of engaging in self-regulation for contemporary young people. Another consideration due to the inclusion of technological progressions within young people's musical lives is that of the dimension of their physical environment as a part of their self-regulation in musical learning. As it has been established that young people are involved in complex forms of participatory cultures, in where their musical learning can occur in person, online, or a combination of environments, while multitasking in other activities, the notion of the physical environment as a part of self-regulation could be updated to include these digital progressions and contemporary spaces for learning.

For optimal learning of musical skills, McPherson and Renwick (2011) state that developing self-regulated behaviours is an important aspect of acquiring musical skills, and this is likely to be the case for both formal and informal music learning. It seems relevant to note the lexis that is used to identify curricula being taught within a formalized system are labeled "formal education," yet Green (2007) points out that education "can occur outside of [school-based] educational contexts" or it "can occur without any teaching having been involved" (p. 15). In addition, the terms "teaching" and "training" do not denote that any learning has occurred (p. 15). While the term "informal learning" can denote a variety of explanations, Mans (2009) provides a generalized definition where informal learning embodies an approach of enculturation as a form of curriculum, where an individual then is able to make informed choices about what they learn based in their societal context. As this explanation possesses many of the attributes discussed in relation to self-regulation as well as the construct of informal music learning, these non-formal ways of learning are a central part of how learning within this digital age is expressed and represented. Self-regulated learning itself is much like a set of tools or an approach for acquiring and expressing musical knowledge. This is pertinent to this discussion, as formal education does not always indicate that actual meaningful learning is occurring, moreover, it questions the very role of 'education' within young people's lives, as much of their learning is occurring at their own pace, on their own, or within social groups of their choosing, and within their own environment.

As initially seen in relation to connecting, the prevalence of digital and social technologies has blurred the boundaries between the realms of informal and formal learning (OECD, 2012). Accessing information and knowledge is no longer limited to a

formalized environment and is propelled by the interconnected digital world where young people's interactions and communications are situated around their social circles. Young people's musical engagement is therefore also comprised of interactions between their personal beliefs and values, social experiences, and opportunities for informal and formal learning (McPherson & O'Neill, 2010; McPherson & Renwick, 2011, p. 235). Young people are seeking out learning in unique and diverse ways, in which they develop self-initiated mechanisms to acquire music knowledge, as well as monitor and build upon their activities and learning (McPherson & Zimmerman, 2002). Regardless of the prevalence of young people's investment in musical learning outside of formal contexts, there is a lack in research that addresses this phenomenon. According to McPherson and Renwick (2011), "unlike other areas such as academic learning, music research is only beginning to focus on the processes whereby students learn to mobilize, direct, and sustain their efforts through the self-enhancing cycles of learning [… of self-regulation]" (p. 236).

Just as young people are using their physical and digital worlds as a forum for sharing their musical creations and getting feedback (see participatory cultures), the literature has shown that many young people are also using their digital resources to obtain and search for knowledge and skills. Self-regulated learning involves ways of learning that include young people actively taking on a role in shaping their musical practicing and learning, as well as having a larger role in defining what and where learning occurs (McPherson & Renwick, 2011).

2.4.2. Construct #4: Informal music learning

Musical activities are a significant part of many young people's everyday lives. They are musically encultured from a young age, with the majority of their musical participation occurring outside of formalized music education (O'Neill, 2005). Historically, music-making practices have been a predominant part of the social culture in which human beings exist; yet, there is evidence that music making is becoming obsolete. Green (2007) is concerned with this decline in active *music-making*, as she notes that there is less activity by amateur musicians than ever before, and that music *listening* has become the primary way of musical interaction. While the blurred lines

between music making and music listening are acknowledged, and that formal music education and informal music learning are not separate entities, a strong emphasis is made on music-making as an active production activity and music listening as a passive consumption activity (Green, 2007). In considering the inculcation of music listening through iPhones, iPods, and other mobile forms of music listening, this concern at the outset seems to gain traction (Rajan, 2014). Especially as the over-saturation of using mobile music listening devices such as iPods has prompted numerous studies to ascertain the safety on young people's ears, due to the amount of music listening they are doing on these devices (Epstien, Mazozeau, & Cleveland, 2010). Moreover, while youth now have more opportunities to be involved in music making activities, specifically in school or in music organizations, there is a continual decline in involvement and interest (Green, 2007). Green (2007) links this decline to the development of "sound-recording and reproduction technology," and the growth of the music industry as well as the Internet making listening to music accessible and unavoidable (p. 3). On the other hand, it becomes evident in looking at the influence of the digital age of musical listening moving forward in the 21st century, and as seen in the constructs of connectedness and participatory cultures, that music is decreasingly a passive engagement within young people's daily lives. In contrast to Green's initial worries, young people's musical listening and music making have now simultaneously been propelled in very active and in-depth ways that do not tend to originate within the classroom.

Green (2007) views most musical involvement in Westernized societies as revolving around the spectator aspects of consumption and fandom, even though many of these societies have some of the most advanced formalized music education programs. Due to the social and mobile technologies that young people now have access to, (e.g., via iPhone in their pocket or hand at all times), young people's involvement with musical listening, media consumption, and interactions with technology are increasing at shocking rates. One particular study noted that young children are embracing technology even quicker than their older siblings, in which acquiring knowledge, listening to music, or really anything is a part of their complex multitasking, and is "just a click away, and they use it for a variety of purposes that are beyond the scope of anything imagined just a decade ago" (Rosen, 2010, para. 2).

While most music education research focuses on the formal institutionalized settings of music education, music's multidimensional nature needs to be considered from a wider perspective. While Green's (2007) research could not account for the progressive transformation of informal music learning within the 21st century, using informal music learning can contribute valuable knowledge and teaching practices (Goran, 2005). Green (2007) proposes that '*informal music learning practices*' are how many popular musicians are becoming educated as musicians, and that formal music education has had little relationship to the popular musicians who create a majority of the music that the world listens to and appreciates. Many of these self-motivated popular musicians have had access to formal music education; yet steer towards informal music learning practices. Green suggests that by identifying criteria for common experiences and how popular musicians learn in general, it may be possible to transfer aspects of informal learning practices to formal music education. According to Green's (2007) research in the book, *How Popular Musicians Learn*, the four main criteria that describe young musicians "informal music learning practices" are (p. 16):

- *Encountering* knowledge and practices outside of a formal educational setting.
- *Enculturation* in musical practices, through their lived experience in a musical environment. This process of enculturation can be attributed to both conscious and unconscious listening.
- *Interaction* with their peers, family and others who are not acting as teachers in formal capacities.
- *Self-teaching* by developing independent learning techniques, acquiring skills and knowledge.

For comparison, Green (2007) defines "formal music education" as instrument-based in nature, where "classroom music teachers" implement "practices of teaching, training and educating" within a "formal educational setting" (p. 16). Moreover, Green provides examples of the common experiences of a selection of popular musicians, both young and old, in which their primary ways of obtaining their musical knowledge and skills are through listening and copying recorded music, memorizing a repertoire of cover songs, practicing in solitude or with peers, writing musical compositions, and various other non-formal music education practices.

Upon comparing formalized music education to informal music learning, it may seem that formal music education is overly rigid and standardized, as it adheres to a set

curriculum that requires quantifiable assessment of learning outcomes. In reality, formal music education is not always the stringent classically focused entity that one envisions of music education in conservatories or in days gone by. Jazz, blues, and popular music have become a large aspect of the formal school curriculum (Jaffurs, 2004). Further, re-conceptualized views of music curriculum are continually emerging, to adapt to young people's differing ways of learning, going as far as "juxtaposing traditional practices with innovative perspectives" (Barrett, 2005, para. 17). Yet a pertinent question arises, 'if popular music is primarily learned through informal music learning practices, then how are teachers within this formalized environment helping their students learn this popular material within a technologically evolving world, especially one in which 21st century technologies evolve faster than can be written about?' In response, I point out that many teachers are teaching popular music within their classrooms using the same techniques as they used to teach classical music, and as Green (2007) points out, interest and motivation in formal music education is in steep decline, even with the addition of popular music. Attempting to learn popular music within the classroom using the same learning techniques from classical music may be creating a disconnect for the students in their abilities to relate their informal music learning practices to what they are attempting to learn and create inside school. Younger musicians in Green's study found traditional notation to be of use to their school music learning, yet they felt they had to compromise their approaches to school music activities, rather than simply develop upon their existing capabilities.

Blending of informal and formal music learning activities

The term informal does not predicate a sub-par form of learning in comparison to formal learning, rather the term informal denotes something that happens outside of formal school settings or purposely crafted educational contexts. Looking at the figurative scenario of Emma, she was often involved in informal and formal music learning activities at the same time (e.g., combining musical learning from school with watching YouTube tutorials at home). These sorts of interactions blur the boundaries between formal/informal learning contexts. This blurring is a direct example of what the OECD (2012) report described was happening in young people's connected lives, where learning can happen outside of school walls while also being brought inside school contexts. The educator does not initiate these forms of blended learning; rather, they

arise out of interests by the learner and their own meaningful active participation in their learning. This sort of active interest in their musical learning brings up how Furrer and Skinner (2003) describe engagement as not just about a motivation to learn, but a young person's interest in active learning. Many young people are engaging in meaningful participation and opportunities to learn that are fuelled by their own interest and drive to learn.

It is possible to relate some of the features of participatory cultures with informal music learning. Musical learning and expression can occur even without the presence of an adult or someone in a formalized teaching capacity (Green, 2007), therefore the ability and interest in learning must derive from somewhere. While Jenkins (2006a, 2006b) and Jenkins, Green and Ford (2012) suggest crowd-sourced learning provides one of the many options for young people to immerse themselves in learning and sharing their knowledge, the socio-cultural importance of music also presents unique opportunities and interest for learning outside of formal education. Music provides a forum to explore knowledge, creativity, collaboration, and expression as a part of the human condition, in which we relate self-identity, self-knowledge, and a socio-cultural context for our experiences (Hodges, 2005). Yet, in research and in practice, there is an indoctrinated view of formal music education as the primary way of learning to play music (Jaffurs, 2004). This institutionalized view leads to static definitions of what a musician is and how to learn and perform music, which is then paralleled within teaching practices, thus potentially alienating students within the classroom. It is a challenge to create and develop communities of practice within the classroom where music can be expressed "as a medium, practice, and art that carries, reflects and instills values" (Mans, 2009, p. 89), and not simply a skill that is honed through solitary practice, repetition, and systematic achievement of seemingly arbitrary goals. In the endeavour of integrating informal learning practices into formalized environments, Green (2007) provides music educators with a helpful suggestion that they should first attempt to place themselves in the position of their students, and "try out some informal learning for themselves" (p. 214). Teachers with little to no background in informal music learning practices can experiment with "purposive listening" to recorded music. They can attempt to copy or imitate the music on any variety of instruments, and replicate music that one has known through enculturation or any variety of the informal learning practices that

youth are engaging in outside of the school walls, including musical involvement with technology (Green, 2007). For teachers that acquired their musical knowledge through informal practices, Green suggests they explore the ways that they themselves learned, and to find ways to incorporate these forms of learning within a structured music curriculum.

A technological musical future

From Emma's figurative scenario, we can see evidence of Green's (2007) informal learning practices and Jenkins' (2009) outcomes of participatory cultures. She engaged in peer-to-peer expertise sharing, crowd-sourced learning, self-directed learning, and a variety of other learning opportunities that were derived from her use of technology. As this chapter is written, it is evident that there is a fast-paced evolving world of technology that is applicable to musical learning. Young people have increasing access to affordable, intuitive, mobile, and commercial quality devices that allows recording using virtual and real instruments. With these devices, they are creating, editing, remixing, and sharing music with ease through a press of a button. Furthermore, these technologies allow for self-teaching through tutorials, collaboration, and trial and error, while not needing to rely on the traditional focuses of technique, repetition, and conservatory style music education. Jenkins (2009) points out that the skills that youth learn outside of school through the Internet and new media technologies are preparing and providing them with the skills and capabilities to become independent and productive members of society. Their interactions with the Internet allow them to become media creators, journalists, photographers, or artists with developed portfolios, civic activists, or even musicians with a wealth of expertise who go on to teach others within their physical and virtual environments. Young people's informal music learning now has incorporated peer-to-peer learning, in which the youth themselves can take on new roles as teachers, mentors, and learners simultaneously (e.g., Jenkins, 2009). Further, even the smallest amount of knowledge can be then shared with their community of followers, as evident in the fluidity and ease of using social media sharing websites such as Instagram or YouTube. Even the simple action of learning to play a couple guitar chords may provide a young person with the opportunity to advance their guitar skills, share with their community, and teach others, all without the involvement of any formalized instruction. The role of the student and the music educator are both

transforming through these technological advances, and thus creating a new identity for music education.

The role of the music educator appears to be changing and is no longer just about "teaching" music. There is increasing recognitions of the need for music educators to facilitate connections for youth within the informal learning practices of their physical and virtual musical lives, and then to help youth connect those discussions back into the classroom, and to their communities. Green (2007) highlights that there are numerous similarities between formal and informal learning practices, as it is simply a matter of looking at music education from a new lens. The educator also now has the possibility of helping their students view musicality in diverse ways. There are a variety of ways to become a "real" musician as shown in the research of Green, and furthermore many ways to identify oneself as a mentor or teacher of musical knowledge. Identifying oneself as a musician can encompass much more than being a classically trained conservatory musician, it now incorporates informally trained musicians and those who engage in musical creation within their participatory cultures. And yet, there still remains an underlying mentality that formal music education defines a "real" musician.

Construct of informal music learning as a way to transform music education

Being "musically encultured" is a part of being situated in a socio-cultural context. More specifically, since the sense of hearing cannot be turned off, humans learn to appreciate music as a part of their lives, and for many musicians music is part of their identity (Green, 2007, p. 22). Many youth identify with particular genres of music, as a way to represent their values, beliefs, and image (O'Neill, 2002). This sense of identity tied to musical activities is especially evident within hip-hop and rap cultures, where physical image, clothing, and music listening habits go hand-in-hand with youth values and beliefs (Reddick & Beresin, 2002). However, even with that knowledge, formalized music education and societal expectations seem to have established a mentality that not all musicianship and musical knowledge is alike—to identify as a musician, one must either have a formal music education or have proven oneself to be successful as a professional musician. Formal music education has fostered a elitist mentality, somewhat closed to the view of informal music learning practices or participatory cultures as being legitimate ways of learning, yet the potential for learning opportunities

outside the structure of formalized curriculum have been not only proven in the literature, but in practice (e.g., Green, 2007; Green, 2008a). Still, many popular musicians who learned to play music via informal learning practices, such as by ear, will commonly feel they aren't qualified to be considered a "real" musician, and that a musician has to have formalized training (Green, 2007). Green (2007) points out that many educators (both music educators and generalist subject teachers) that learned their skills and knowledge through informal means can feel anxiety over teaching their students music, and there is a perceived unwritten rule that to teach "proper" music one must have a formal background. Yet, looking at how informal learning occurs within Green's study and within Jenkins' extensive literature and demonstrations of participatory cultures, it is evident that musical skills and knowledge do not necessarily rely on formalized music training.

In a 2006 study by Miikka Salavuo, it was found that the ease of technology-based musical creation and sharing enabled youth to become active musicians within their online social communities, even though the majority of those youth had no formal music training. Within the construct of participatory cultures as a part of musical expression, youth take on the identity of musicians, without being biased in formal music educations' notions of 'what a musician is.' This is why Jenkins' (2009) notion of participatory cultures is a valuable addition to defining an inclusive music education, and constructing the comprehensive view of the extent to which young people are exhibiting these constructs of innovative learning. For example, participatory cultures enable a sense of role-playing and exploration of identity, where youth are able to explore their "social spaces" online and in person (Jenkins, 2009, p. 50), without the stigma of learning specifically through formal or informal music learning practices.

By providing diverse contexts for musical learning, youth are able to acquire and develop complex understandings and skills of music making and learning (Harwood, 1998). Green's (2007) concern that music-making among contemporary youth is in harsh decline is valid and her call for informal musical learning practices to be incorporated into formal music education may assist youth in terms of their motivation and in making connections with how they experience music outside of school. In conjunction with this agenda to connect formal music education to how youth are learning and experiencing music outside of school, the constructs of connecting, and

self-directed learning offer insights into how educators might help bridge the gap between formal music education and informal music learning practices, thereby providing new spaces for youth to explore their musical creativity and expression.

2.4.3. Key features of self-directed learning

Various perspectives inform the constructs within the area of self-directed learning, most importantly rooted in McPherson and Renwick's (2011) discussions of *self-regulation*, and then Green's (2007) *informal musical learning practices*. Considering that self-directed learning is the process where learners are able to take on initiative, regardless of assistance from others, and where the learner constructs their own formula for what, how, when, with whom, and why they learn particular skills and knowledge (e.g., Wulff, Hanor, & Bulik, 2001; Hiemstra, 1999), to accommodate what is meaningful and relevant to them, the constructs of self-regulation and informal music learning practices provide additional insights into this overarching area. Further, both of these theoretical and practical lenses provide an in-depth perspective into musical learning specifically.

The construct of self-regulation is characterized by the notion that young people are driven by self-initiative and peer-based involvement in their interest and search for musical knowledge (e.g., trial and error, crowd sourced learning). Innovative learners are exhibiting Green's (2007) informal music learning practices, where encountering, interaction, enculturation, and self-teaching of musical knowledge and skills are how young learners are able to become musically knowledgeable—often without formal intervention. The technological revolution that has emerged within the 21st century has begun to transform how these practices are enacted within young people's learning both outside of, and inside of school, where digital and social media compounds the ease and opportunities for self-directed learning within their multimodally inundated lives.

2.5. Multimodal meaning making

Within our digitally-infused society, it seems that multimodal, interactive, and social ways of communicating, engaging, and learning are simply ubiquitous parts of

daily life for both young people and adults alike. And while iPhones and the like are pervasive in the media and what we experience around us everyday, multimodal technologies and ways of making meaning are only beginning to be explored as credible options or aspects within educational contexts. This is seen in both research and practice, where classrooms continue to place a focus on text and written literacies. Even the language we use within our discussions of multi-modality continue to use the somewhat contradictory or leading terminology of "multimodal digital texts" (see Doering, Beach, & O'Brien, 2007, p. 41), where the use of the word "text" seemingly biases the reader to focus on the established priority of text based literacies and textual modal resources within the educational domain. It is essential to clarify what is meant by the use of the term "multimodal," especially as the concept of *multimodal meaning making* is presented here as an overarching area that aligns with what it means to be an innovative learner. This section will unpack the constructs within the area of multimodal meaning making, and consider the role of multimodal meaning making within young people's daily musical lives.

In line with Canadian frameworks of 21st century learning and innovation (Alberta Education, 2011; C21 Canada, 2012; Ontario Public School Boards' Association, 2013), multimodal literacies and meaning making are prominent features of what it means to be a innovative learner in our digital age, as:

> Multi-literate, creative and innovative people are now seen as the drivers of the 21st century and the prerequisites to economic success, social progress and personal empowerment. Organizations and authors have identified these competencies and called for transformation of public education systems globally to meet current learning needs along with a shift in the way that we engage students in their own learning. (C21 Canada, 2012, p. 4)

As already established within the literature in the previous areas, the 21st century has ushered in technological advances and a digital age. The digital age has enabled a generation of learners to be the first of many to have access to affordable and intuitive new mediums and modes of communication and expression. Through these new mediums of communication and expression, such as social media apps on an iPhone (e.g., YouTube and Vine), youth now have access to diverse creative resources to express themselves through multiple modes of representation and have the ability to

become *literate* and *construct meaning* in ways that are unlike any past generation, where knowing was primarily communicated verbally and textually. These new literacies through technological affordances have provided contemporary youth with multimodal forms of engagement with music and musical activities. They are no longer restricted to one mode of learning and communication, but a combination of many. While the concept of multimodal meaning making is not solely limited to the introduction of advanced digital technologies within the 21st century, it is pertinent to note that multimodality is qualitatively different within the digital age, compared to generations before. While it was possible before digital social media to engage in multimodal meaning making through various modes (e.g., breakdancing with rap music), the relationships that emerge in a digital age are worlds apart. Take into account the interconnected and almost immediate social quality of social media (e.g., YouTube). In sharing one's musical creation combined with video clips of relevant photos or video taken by a youth, they are able to share their creation beyond their immediate social circle, and connect beyond geographical, socioeconomic, and cultural boundaries. This is not to say that all young people are engaging in such complex multimodal forms of musical creation, but many youth now have access to these affordable and intuitive forms of sharing, creation, and expression. Making meaning through multimodal formats has been propelled by the affordances of the digital age, in ways that are unparalleled to previous generations of learners. Multimodal meaning making in young music learners' lives goes beyond just using multimodal technology, or making music; it is how young people, who are engaged in their technologically interconnected lives are making something personally meaningful and expressing their own meaning, through the various combinations of resources available to them, in ways that they themselves do not differentiate between the different modes. Due to the interconnected nature of multimodal resources in young people's lives, the specific separation of each mode (e.g., text and visual) are not described as isolated modes, as seen in the fluid ways that young people are engaging in social media (e.g., Instagram posts that incorporate text, hashtags, video, and complex video editing). Multimodal meaning making then provides the basis for the third and final areas associated with 21st century learning and innovation.

The two constructs identified within this area of multimodal meaning making are: 1) multimodal literacies, and 2) multimodal musical resources. Each construct will be detailed as a part of the larger area of multimodal meaning making, while providing insight into the extent to which these constructs are associated with the framework for innovative learners and young people's musical lives.

2.5.1. Construct #5: Multimodal literacies

Taking into account the diverse ways of engaging with music that have flourished from digital technologies, such as creating and sharing content through YouTube, it is apparent that one of the constructs that young people are engaging in, is that of multimodal literacies. The concept of multimodal literacies addresses some of the active ways of communication and meaning making, and sense making, that youth are engaging in within their daily musical lives.

To provide a clear picture of what multimodal literacies look like in young people's lives, a bit of background on how technology has transformed our definitions of literacy is required, and in turn, it is necessary to discus how meaning making is derived from multiple modes of representation, expression, and communication. Put simply, multimodality approaches to representation, communication, and interaction are something more than language (Kress & Van Leeuwen, 2001). Multimodality is "the use of several semiotic modes in the design of a semiotic product or event" (p. 20), in which meaning making occurs. Kress (2010) later goes on to state that meaning making is socially and culturally made up of multimodal resources that consist of "images, writing, layout, music, gesture, speech, moving image, soundtrack and 3D objects (p. 79). And, Jenkins (2009) describes how "participatory culture shifts the focus of literacy from one of individual expression to community involvement" (p. 7). From this, it is possible to see that the ways young people are connecting within their musical lives blends into their changing forms of literacy and meaning making, and has become a part of their physical and virtual communities.

Literacy: Changing with and through technology

Musical sounds are just sounds, not language or communication until human beings assign them grammatical structures and values, which are established through our social and cultural experiences (Sloboda, 2005, p. 177). Traditional forms of literacy, as found in formalized school-education have typically relied on reading and writing as modes of communication and expressing meaning (Abrams, 2009, p. 335). Yet, outside of the classroom, other modes of representation such as images and sound seem to be taking precedence in how youth are learning, obtaining knowledge, and forming their worldviews. Formalized education and traditional literacy are no longer the only ways to learn and communicate in contemporary society, where media informs our knowledge and emerging technologies propel our access to new information. A key question from this is how can literacy be defined within our fast-paced society where technology is ubiquitous and knowledge is acquired through a diverse set of resources? One possible response is to define 21st century literacy as "the set of abilities and skills where aural, visual and digital literacy overlap" (New Media Consortium, as cited in Jenkins, 2009, p. 28).

Mass-media, technology, and multiliteracies

Within our primarily digitally focused society, our senses are bombarded with messages from the mass-media which in turn shape our perceptions, interpretations of content, ways of making meaning, communicative actions, and finally our knowledge. In 1967, through the statement "the medium is the message," Marshall McLuhan gave the world a way to understand the implications of the media and technology on our ways of communicating and interpreting the world around us (McLuhan & Fiore, 2001). The medium of communication or transmission can hold various modes of representation simultaneously, as it engages our five senses to interpret the meaning or more appropriately, the message. The concern about the mediums, and in turn the messages that mould our knowledge and communicative actions seems to have progressed due to the mass-media that emerged in the 20th century, which holds the ability to shape values, perceptions, and knowledge to fit the agendas of its creators. Due to this concern, media literacy education in our digitally and technologically evolved 21st century is a necessary part of contemporary life, as we need to have the tools and

knowledge to critically analyze the messages that we encounter and understand their role in our lives. A contemporary demonstration of how the mass-media has the ability to shape the messages that we perceive is to take the example of YouTube, a video-sharing site that allows for the creation, sharing, and commenting of user-created media. While the website may seem to be a relatively innocuous way to create, remix, and share videos, music, and content, the YouTube company is still a business that requires financial income, thus it provides revenue generating partnerships with advertising, large networks, corporations, and other conglomerates that have their own interests at heart (Burgess & Green, 2009). As the content and messages may then be catering to the needs and requests of the sponsoring companies, the advertising may be biased. This highlights how a certain level of media literacy education is necessary to navigate even the simplest of tasks within this environment. The technological age has equally brought on a new set of resources and problems, yet we appear to be only beginning to lay the foundation to understand its potential and ramifications.

As the technological age is a relatively recent progression in humanity compared to language and communication, which have existed for thousands of years prior, the world has been traditionally conceived as being mono-modal, where rational meaning and communication occurred through language, and language only (Kress, 2010, p. 28). Students and educators are presented with a diverse linguistic, social, and cultural environment that has been shaped by the technological advances in society, thus traditional approaches to literacy need to be expanded to accommodate the diversity within our modern contexts. The conceptualization and the terminology to define this multiliterate society really only recently came about when The New London Group (1996) first coined the term “multiliteracies” and presented a theoretical discussion about a broader understanding of literacy that encompasses the multiple literacies that are evident in modern communication and media.

Multiliteracies by the New London Group

The New London Group (1996) posed potential pedagogies that could assist educators in finding a connection with their students. In their theoretical pedagogy, The New London Group discuss how multiliteracies shape the potential futures for students. Training for traditional skills needed for jobs, such as assembly line careers, are a way of

the past. With technology eliminating the need for a large proportion of manual labour related careers, youth today are expected to enter the workforce with the capacity to search, navigate, and extract information from their real and virtual worlds, with ease and reliability. Lankshear and Knoble (2003) point out that the media and technology are important and relevant parts of participating within modern society, where youth are becoming fluent in new literacies, and are reliant on both understanding and having multimodal capacities.

Carey Jewitt and Gunther Kress (2003) expanded on the New London Group's concept of multiliteracies, and provide the term multimodal literacy to account for all the different ways in which meaning can be created and communicated. They argued that the multiple literacies found in the world today encompass combinations of various modes of meaning making that are situated in cultural, social, and historical contexts, and include the modal resources of "image, gaze, gesture, movement, speech and sound effect" (p. 1).

Multimodality, the new media age, and music education

Kress' (2010) points out that we exist in a "new media age," where there are "profound changes in the social, economic and technological world which will in the end shape the futures of literacy" (p. 176). This reinforces the view that multimodal literacies are a result of technological advances and new mediums of communication. As multimodal learning is situated in socio-cultural contexts, the experiences that occur within and outside of the classroom inform a student's learning experience and potential for development and engagement. Youth not only have access to a wide range of resources and information to choose from, they are also able to navigate through the fast paced evolving world of knowledge that is broadcast through media and technology (Jenkins, 2009). Contemporary educators are now faced with youth arriving in their classrooms with existing literacies and knowledge about music that inform their ways of making meaning and communicating, as they have come to "rely fairly heavily on the Internet" (Flanagin & Metzger, 2010, p. xi). Youth may arrive in the music classroom knowing how to play the guitar to an advanced degree, yet they may not know how to read or write music notation. Through learning by ear, interactive music video games, online streaming services for interactive watching of gaming or artistic creators, forums

for crowd-sourced suggestions on what to-do next (e.g., Twitch), and do-it-yourself YouTube videos on learning to play an instrument, youth are now coming to school with existing multimodal literacies. They are potentially already able to pass on their self-taught expertise to others, all without the assistance of a teacher.

Unlike traditional forms of literacy, multimodal forms of making meaning are socially and cultural responsive (Jewitt & Kress, 2003), and lead to meaning making as a literacy on its own. One of the most relevant aspects that blends across the discussion of innovative learners, and the conceptual elements that identify them as such, is the concept of sharing multimodal content and engaging in meaning making. It has been discussed that young people are increasingly engaging in participatory cultures of sharing content, messages, and constructing meaning making around these creations. As already noted in the literature within the area of connecting, young people that are members of communities online or in a physical space forge deeper meaning within their knowledge sharing and meaning making, due to their "stake in the circulation of these messages," where these messages have a virtual currency within their social groups (Jenkins et al., 2012, p. 60).

Multimodality: Meaning making, communication, and learning

It is evident that the communities we exist in (physical or virtual) and the ways we communicate may enable additional literacies other than what we are traditionally accustomed to. Yet, even as media and technology play a burgeoning role in the messages, information, and content we experience, "textual literacy remains a central skill" in the 21st century (Jenkins, 2009, p. 28). Text-based media has played a direct role in shaping our worldviews even before the Internet and computer technologies started playing such a large role in our lives. Yet, we are now faced with finding ways of expanding on those text-based literacies to include multimodal literacies. In 1984, at the cusp of the technological age to come, historian, Christopher Lasch stated "more and more, our impressions of the world derive not from observations we make both as individuals and as members of a wider community, but from elaborate systems of communication which spew out information" (Lasch, 1984, p. 133). It seems that the growth of the multiplicity of ways to communicate and obtain knowledge is tied to accessibility of media driven knowledge, which has occurred due to the technological

advances of the 21st century. Without mass-media and the affordances of digital technology, human engagement with knowledge would likely still be limited to only the traditional forms of transmitting communication, such as reading and writing. A new media age has emerged, bringing forward multiple literacies with various modal resources.

It has become apparent that digital media and more specifically musical sound has infiltrated and laid its groundwork to stay in representation and communication. Decades after the New London Group termed their modal resources for multiliteracies, Kress (2010) expanded on his definition of mode as a socially and culturally constructed "resource for meaning making," using an extended list comprising "images, writing, layout, music, gesture, speech, moving image, soundtrack and 3D objects" (p. 79). From the addition of new modal examples, such as soundtracks and 3D objects, the quick-paced evolution of multimodality shows through, and with new technologies such as virtual augmented reality at the forefront of possible new technological advances, the addition of other modal resources to the list may be necessary in coming years. As a resource for meaning making, it then becomes significant to better understand how multimodal meaning making is actually occurring within young people's lives. This poses a unique challenge to breaking down what multimodality looks like in young people's musical lives, as the speed at which technology advances is daunting, and even the ways that media is consumed has been transformed by the shift of technological engagement to a mobile and app-focused world.

2.5.2. Construct #6: Multimodal musical resources

Multimodally and digitally infused lives

The majority of digital media consumption now occurs within mobile apps (Perez, 2014), where Facebook leads the way with an insurmountable number of daily users, and other apps include YouTube, Google Search, Instagram, and other multimodal messaging apps. Nearly every day a new form of social media arrives on the forefront of technological advances, touting new and improved ways of multimodally communicating and making sense within one's daily life. Even walking down the street is now filled with the ability to receive push notifications on one's smartphone, alerting users to a nearby

coffee shop, things they should be buying, or people that they should be socializing with. This is an intriguing development in our increasingly mobile world, as the reliance on mobile devices (e.g., iPhones) and our increased ability to consume digital media through these devices has only ignited the omnipresent importance of multimodal resources within daily lives.

Considering the implications for communication, learning, and expression that multimodality within our technologically infused society has provided to contemporary learners, what youth are using to learn and explore music is only the first part of the changing definition of what it means to be musically knowledgeable. This digital age has also opened up a variety of other possibilities for musical expression inside and outside of the classroom, and expanded opportunities for exploring multimodal resources in new and innovative ways.

Multimodal meaning making is unique to generations of the 21st century

Learners within the 21st century are unique, not only because of the availability of complex and interactive technologies compared to previous generations, but due to their ability to grow up within a culture that fosters their opportunities for multimodal make meaning, in which their lives are digitally and multimodally infused. Specifically, different generations differ in their technological abilities to such a degree that Prensky (2001) coined the terms “digital immigrants” and “digital natives.” These terms differentiate between those who were born before technology played such a central part in human everyday life (digital immigrants) and the current generations that have been accustom to digital technologies as a part of their communication and learning (digital natives) (Presnky, 2001, p. 1). Based on this assumption of split groups of technological abilities, the belief is that the digital natives – contemporary youth – have a greater understanding of technology and how to engage with it than their teachers (Prensky, 2001). Prensky’s binary separation of the two types of technological generations even accounts for how “digital immigrants” from non-digital generations, who become quite fluent in technological literacies, still maintain an “accent” or bias based on their lives before the digital age. Prensky makes a very important statement about “digital immigrant” educators that can also be applied to music educators, as the “pre-digital

age" languages spoken by many "digital immigrant instructors" impedes their attempts to "teach a population that speaks an entirely new language" (p. 2).

Limitations of current multimodal research and discussions

As I have discussed, music educators are faced with the challenge of understanding how students today are gaining knowledge and communicating about music. The Internet, mobile devices, and computers have enabled youth to grow up with a multimodal experience of learning. A greater difficulty arises when attempting to use multimodal learning resources as a way of expanding learning opportunities within music education, as within literature and practice there is a disproportionate focus on the modal resources of image, moving image, and 3D objects (e.g., Halverson, 2010; Yamada-Rice, 2010). Many teachers are starting to acknowledge that there are multiple modes of communication and are adapting to the changing ways youth are learning. However, the focus on image surpasses the inclusion of music and sound. Classrooms are expanding learning opportunities for exploring visual formats of expression, including building websites, learning computer animation, and learning how to construct films and videos, yet the modes of musical sound, soundtracks, and non-musical sounds (i.e., soundscapes) are seemingly ignored. As someone who views music education as a pertinent part of a youth's experience in life, I am concerned with how the literature and classrooms are managing to include other modal resources as relevant, while dismissing music and sound as equal contenders. Even in the discussions of video games as a new form of multimodal literacy, there is a focus on specific types of music, such as rap music, or background music that is only an ancillary aspect of the discussion of the modes of literacy within the video game (see Gee, 2003; Gower & McDowell, 2012, p. 93).

Kress and Van Leeuwan (2006) emphasize, "information is now so vast, so complex that, perhaps, it has to be handled visually, because the verbal is no longer adequate" (p. 32), and that "visual literacy will begin to be a matter of survival, especially in the workplace" (p. 3). While they succinctly show the need for visual modal resources of multimodal literacy for the future of education and the workplace, youth are becoming increasingly media and modally literate in more than visual modes of representation and communication. As multimodality is not limited to constructing meaning with individual

modes, but is predicated on the assumptions that modes are interactive with each other and that their products of interaction also are a component (Kress & Van Leeuwan, 2006), musical and auditory modal resources need to be incorporated into classroom practice. As I have already mentioned, youth are self-teaching through Internet resources and engaging in peer-to-peer exchanges of knowledge, including a mixture of modal resources. Due to the evolution of multimodal literacies within young people's lives happening at unprecedented rates, music educators and their students are facing a potential digital divide (see Jenkins, 2009), between the language and content being used in existing curriculum and classrooms, and what is relevant to young people today.

New forms of multimodal learning (yet room for music to expand)

There are hidden affordances that have emerged from how young people are multimodally engaging in their digitally infused lives. For example, Gee (2003, 2007) describes how video games are a key component of youth culture, and that the opportunities for learning within these multimodal forms of new literacies are abundant, yet not without their own quirks and issues. Video games provide youth with the forum to create their own multimodal virtual worlds, in which they can communicate and explore within affinity spaces (Gee, 2003), and explore new trajectories for their identities (Squire, 2006). Using video games as a component to educational learning is increasingly becoming a practice that many schools are adopting, though as video games are not made with the focus of learning, rather originally on the gameplay, it provokes questions of whether this application of video games in educational contexts is simply practical or actually provides opportunities for creativity and expression. Squire (2006) explains that,

> Contemporary games function in ways very different from traditional "educational" games; whereas traditional educational games use context as a motivational wrapper for the game experience, contemporary games literally put players *inside* game systems. (p. 25)

And while immersive ways of multimodally interacting and learning may be made possible through the introduction of some of these technologies into the classroom, simply incorporating multimodal technologies into the classroom may not give students the chance to really explore their learning as "learning rarely, if ever, occurs and develops from a single experience" (Dierking, Falk, Rennie, Anderson, & Ellenbogen,

2003, p. 109). Thus, regardless of contemporary video games or other technologies having educational applications, they are still relatively constrained in what young people can do with them when they are situated within the contexts of a classroom. When considering the informal ways that many young people are learning, it seems pertinent to decipher the ways that young people may be using these multimodal forms of technology for their own learning outside of the classroom. As the multimodal forms of technology available to young people offer diverse new ways of interacting and learning, the ways they are using video games outside the classroom may reveal more about how they are actually engaging in multimodal learning within their digitally infused lives.

Recent investigations of music video games demonstrated that "interactive music video games are exciting and meaningful for young people" (Gower & McDowell, 2012, p. 102). While music video games such as Guitar Hero or GarageBand were created for the purposes of interactive gameplay for youth that drew on young people's interest and passion for wanting to listen and play music, not specifically as educational tools, it may be that young people are using these technologies beyond the original functions. There have been various hidden affordances and new multimodal resources that these sorts of technologies incited. As seen in the case of anime music videos (Knobel, Lankshear, & Lewis, 2010), young people take their interest and passion for a particular anime video that is meaningful and relevant to them, and remix it along with a song that is also important to them to create a new music video that combines key parts of the anime and music to tell their own story. Many anime music video creators go on to post their creations onto YouTube, in which they then receive feedback. Of note, is that while anime music video creators are a small subset of people, many young people are engaging in this activity and are using multimodal forms of music and video creation as a new form of learning and expression. This sort of musical mash-up has been happening in various ways since the early 1980's (Knobel, et al., 2010); however, the multimodal nature of contemporary digital and social technologies makes it even more accessible to young people today. Further, considering that music video games have only been in existence over the past decade, while not largely investigated within the literature (likely due to the secondary status of music and sound to multimodal research), it is a question of whether this new form of multimodal music engagement may delve into the same

unique creative zone as anime music videos, due to their relevance and meaningfulness to young people today.

The literature has described a new digital age, in which traditional forms of musical meaning making and expression in music education are no longer limited to school environments or to traditional instruments. The changing nature of how young people interact with music in their daily lives, where multimodality is infused, offers opportunities for young people to explore their multimodal musical resources in ways unlike previous generations. The overarching area of multimodal meaning making lets young people build upon and explore new multimodal resources within their digitally-infused lives (e.g., Kress & Van Leeuwan, 2003), and from that, build upon their musical lives within multimodal forms of musical participation.

2.5.3. Key features of multimodal meaning making

As discussed, both of these key features of the area of multimodal meaning making exist within the literature, however very little addresses the role of multimodal meaning making within young people's musical lives. Multimodal literacy is grounded in the literature from Kress and Van Leeuwan (2006) and Kress (2010), in which they present the notion that multimodal resources are how young people are engaging within their daily lives to make meaning and sense in their communication, expression, and representation of self. While multimodal meaning making has a strong theoretical representation, there is a lack of literature that specifically focuses on the multimodal ways that young people are engaging in their musical lives. While there are some cases of multimodal music meaning-making being addressed (Jurström, 2010), these investigations are often focused on learning environments that are relatively formal in nature (e.g., as a part of a curriculum or formalized music education setting) (Yu, Lai, Tsai, & Chang, 2010), or for integration into traditional notation (Müller, Konz, Clausen, Ewert, & Fremery, 2010). Due to the lack of research specifically surrounding the role and impact of multimodal meaning making within young people's musical lives, there is a gap in how our understanding of how multimodal meaning making is situated within young people's engagement in musical activities and implications of multimodal meaning making within the lives of those identified as innovative learners.

2.6. Inferences for the forthcoming study

Each of the three areas and six constructs constitute the proposed framework for innovative learners. The framework development was highly iterative and cyclical in partnership with the construction of the literature review, and the interrelated areas and constructs are represented by a significant literature that accounts for the technological and musical ways that young people are connecting, self-directed learning, and multimodally making meaning in their daily musical lives. While each construct may share similar characteristics or aspects with each other, as the very nature of an innovative learner is a blending of these constructs, each represents a particular frame of reference to better understand how innovative learners are engaging with musical activities in today's technologically evolving world. Further, as the literature revealed, there is a lack of evidence about what innovative learners look like within the context of their everyday musical engagement. Moreover, a paucity of evidence of the extent to which music learners exhibit the constructs thought to be associated with innovative learners. To address these issues, an exploratory study was undertaken with the aim of shedding further light on what innovative learners look like within a digitally infused musical age. In focusing on this goal, this research explores two primary questions:

> 1) What are young learners who are engaged in musical activities really doing within the contexts of their daily lives, and how might today's digital technology mediate these activities?
>
> 2) How are young learners, identified as innovative learners, engaging in these musical activities with digital technology actually using a combination of (1) connecting, (2) self-regulation, and (3) multimodal exploration to frame their meaning making?

Chapter 3.

Research Methods

3.1. Research study

To address the research questions, an interview study was undertaken in 2010 as part of a government-funded grant by the Social Sciences and Humanities Research Council (SSHRC) of Canada awarded to the Principal Investigator and thesis supervisor Dr. Susan O'Neill for the project *Youth Participation in Music*. Participants were recruited from public and private schools across the Greater Vancouver Regional District, British Columbia, Canada. The selection of participants was based on parental/guardian consent, the students' voluntary participation, and availability during class time, and permission from their teacher.

After the literature review was conducted, and the subsequent development of the proposed framework for innovative learners, there were two further parts to this research, (1) the analysis of interview data from the *Youth Participation in Music* project's interview study, and (2) a case study exploration of participants identified as innovative learners, that was conducted specifically by the author for the purposes of the research questions described within this dissertation. The interview study and initial data analysis was conducted in collaboration with the SSHRC-funded research group MODAL (Multimodal Opportunities, Diversity, and Artistic Learning) with Dr. O'Neill as Director and Principal Investigator, and Deanna Peluso as a Graduate Research Assistant and Project Coordinator. To address the second research question, the author of this dissertation conducted the final part of this research: the development of a framework for innovative learners, thematic analysis of the literature, analysis of the interviews through this framework, and the subsequent case study vignettes.

3.2. Interview study

The author of this dissertation took on the role of coordinating the interview study project, as well as hiring and assisting with the training of interviewers that were involved in the interview study. A thorough training process involved providing guidance and assistance with initial practice sessions, followed by continual feedback with the other three interviewers through the interviews and transcriptions. The four interviewers (including the Project Coordinator) involved in the interview study were masters and doctoral students from the Faculty of Education at Simon Fraser University.

Recruitment of schools and consent process

Prior to commencing the research, the study received ethical approval from the Simon Fraser University's Office of Research Ethics (ORE). The author of this thesis received ethical approval to be a part of this research and was named a graduate research assistant/collaborator on the ethics application.

Recruitment began by first contacting the school principal and/or teacher in charge of Music Education to inform them of the study and ask for their permission to proceed. While many of the participants then came from music classes, others also originated from the teachers' homeroom classes.

After receiving information about the study, reviewing consent forms, and obtaining approval from the district and local school administration, teachers from five different schools volunteered to have their classes participate in the study. Once we had permission from the school and teacher to proceed, we sent information letters and consent forms home to the parents/guardians of students who were asked to participate in the individual interviews. On the consent forms the contact information for the Principal Investigator (Dr. O'Neill) and the head of the Simon Fraser University Research Ethics Office was listed, in the case the participant or their parent/guardian had questions, concerns, or follow-up questions after the interview. Parents/guardians were asked to return a portion of the consent form with their signature (and their child's signature) to indicate that their child may participate in the study. Each child who had a signed consent form was invited to participate in the interview.

There were 93 participants that volunteered to participate in the study. Once the consent forms for each of the students were collected, and all the potential participants had the chance to obtain their parent's consent, interviews were scheduled with the teachers, as to accommodate class schedules. The interviews then were conducted during school days at their schools, over the period of three months by the research team.

3.3. Research methods

3.3.1. Research procedures

Interview process

Individual interviews with the students lasted approximately 20-35 minutes, and were conducted in a quiet location, such as an unused classroom, office, or corridor. The interviews were recorded on an audio recorder in MP3 format. As the interviews were recorded, it was possible to review each of the interviews afterwards, and discuss any relevant issues or concerns between the interviewers (e.g., what to do when a participant gave a one-word answer to an open-ended question). Field notes were also recorded as the interview proceeded, where researchers noted musical activities, key concepts, as well as relevant information on the location of the musical activities. In recording additional information within the interviews, it provided the research assistants with the opportunity to present pertinent notes upon transcribing the interviews later, as well as to carefully review the interviews in comparison to the transcriptions. To provide consistency in the interviews, during a couple of initial interviews, the author and Project Coordinator sat in on one of the other research assistant's interviews and provided feedback after the interview.

At the beginning of the interview, participants were asked once again for their verbal permission to record the interview (using a digital voice recorder). They were also assured of anonymity and confidentiality of their responses with respect to anyone outside of the research team. They were informed that they may withdraw from the study at any time, their participation was completely voluntary, and that they may refuse to answer any questions and to stop the interview at any time. They were given the

opportunity to ask any questions they may have at the beginning and the end of the interview.

Students were informed that, should they withdraw or not participate, there would be no consequences for withdrawing from the study at any time (including no consequences to their grades, or any sort of penalty within their classroom environment), and that the confidentiality of the data collected was secure. If a participant withdrew from the study at any time, the participant was asked whether they "would like their data to be used in the study or destroyed." Although this issue did not arise during the research, the researchers were aware of the protocol to address this situation.

Furthermore, upon finishing the interview, the participants were debriefed on the study and given an opportunity to ask any questions, or provide further information. The consent forms, and all study data were stored in a locked and secure filing cabinet in the research office on campus. All digital data (e.g., MP3 Audio files and their transcriptions) was stored on a secure encrypted hard-drive located in the same secure and locked research office.

Transcribing of interviews

The interviews were transcribed and cross-examined with the field notes to correct any possible transcription errors due to muffled audio or body language in lieu of an answer (e.g., a participant's description of the frequency of doing a musical activity may have had non-verbal hand gestures to denote the number or days a week they were involved in the activity). Two research assistants would review the audio recording and field notes to discuss and come to a consensus on any words or sentences that required further investigation. The transcriptions were then reviewed and cross-checked along with the audio file by another research assistant to confirm that all the transcriptions were correctly input. At this point, the Project Coordinator reviewed all 93 interviews and corresponding transcripts to confirm their accuracy. A secondary pair of research assistants then proceeded to transfer the data from the transcriptions into an Excel and SPSS document in preparation for analysis of the quantitative data (e.g., age, musical activities).

3.3.2. Data collection

The one-on-one interviews contained two parts: 1) an open-ended interview protocol using the Music Engagement Map, and other questions focused on the young person's future musical activities and their musical role models, and 2) a series of quantitative questions about the participants' engagement in musical activities. Only the data collected from the first part of the interview is reported here involving the use of the Music Engagement Map. For a summary of the second part of the interview see O'Neill (2013).

In the first part of the study, for the majority of the interview, the researchers utilized a Music Engagement Map protocol developed by Dr. O'Neill (see Appendix A) that is itemized by open ended questions in the interview protocol (see Appendix B) to document descriptions from each participant about all of the musical activities they are currently involved in (inside school and outside school). The Music Engagement Map interview protocol (i.e., the script used by the interviewers) (see Appendix B) is summarized as follows. After describing all of their musical activities, the participants were asked to select their two favourite musical activities or the two that were most meaningful to them, and to describe (1) what got them involved in the activities to begin with (initiators), (2) what kept them involved (sustainers), and (3) what benefits or impacts they experienced from their involvement. For each of the above (initiators, sustainers, benefits), participants were asked whether their reasons had more to do with factors that were personal ("who you are as a person?"), social ("who you know?") or systemic ("the place or context you were in?"). These questions were drawing upon Dr. O'Neill's adaptation of Rose-Krasnor's (2009) Youth Engagement Framework (Figure 3.1), which focused on: *personal* (self-identity, values, temperament, attitudes, motivations, time, resources, ability, etc.), *social* (family, friends, mentor, etc., or expectations, encouragement, role models) and *systemic* (school, church, community, group, organization etc., or available opportunities, structure, organization, accessibility). Each participant's response was recorded on a template of the Music Engagement Map by the researcher. Going forward in this discussion, the Music Engagement Map (Appendix A) and interview protocol (Appendix B), may be denoted as a combined term of *Music Engagement Map protocol*, for ease and clarity to describe the protocol used

during the interviews, and the graphical organization of the interview questions within the documents used within the interviews.

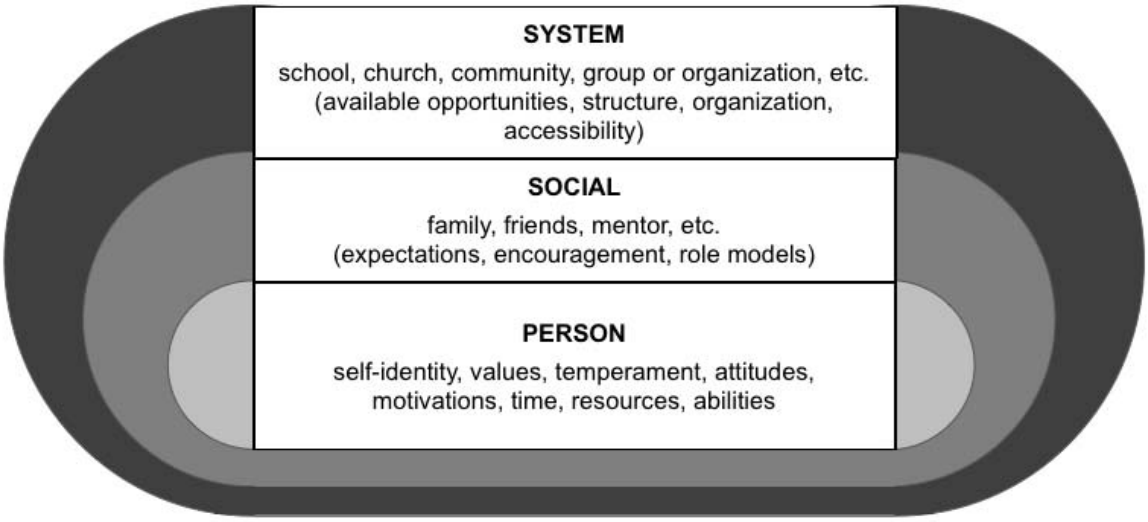

Figure 3.1. Youth engagement model (based on Rose-Krasnor, 2009)

As noted, the Music Engagement Map (MEM) and subsequent interview protocol were developed based on Rose-Krasnor's (2009) model of Youth Activity Engagement. The MEM protocol aimed to look at how youth may have meaningful participation in an activity, with a well-informed understanding and valuing of the activity, from which they derive a sense of relevance, purpose, and fulfillment (O'Neill, 2005). The MEM protocol intended to address: psychological components (e.g., values, meaningfulness, identify and sense of belonging), behavioural components (e.g., effort, intensity, focused concentration), be dynamic in nature, accommodate individual differences in the participants, and be context-dependent, within interrelated personal, social and systemic ecologies (O'Neill & Peluso, 2010).

The focus of the interviews on the participants' top two most meaningful musical activities was used to focus on musical activities beyond music listening. However, if a participant insisted that music listening was their first or second choice musical activity, the researcher would then proceed with those two activities. Due to time constraints during the interviews at the schools, and the format of the school block scheduling, the

interviewers were only able to go through the questions about the participant's first choice musical activity fully in the case of a few interviews. The secondary musical activity in these few cases did not cover all the questions from the protocol. Although attempts at continuing the interviews on another day were attempted, in a couple cases this was not possible.

3.3.3. Reliability, validity, and pilot testing

The interview protocol and Music Engagement Map were developed and pilot tested by the Principal Investigator (Dr. O'Neill) in previous studies conducted at the University of Western Ontario. Before the interviews commenced, all researchers were trained on how to conduct the interview, follow the interview protocol, and how to document any relevant field notes. Minor text changes were made to the interview protocol wording based on the pilot study findings to increase the ease of use during interviewing and to reflect the study context at Simon Fraser University.

3.4. Identifying innovative learners and case studies: Methodology and analysis

Once the interview study concluded, and an analysis of the interviews was conducted to reveal what the participants engaging in musical activities were really doing within the contexts of their daily lives, with a focus on how digital technology was infused within their musical activities, the author re-read the interviews and analyses to better understand what the young people's perspectives were, as well as to address the second research question. It was evident that some of the young music learners within these interviews were exhibiting aspects of connecting, self-directed learning, and meaning making in ways unlike many of their counterparts. It became apparent that the affordances of digital- and social-media were providing many of these participants with opportunities to engage in complex forms of expression, communication, and engagement within their musical lives. The next part of the research commenced with the identification of the innovative learners involved in all three interrelated areas described in the proposed framework for innovative learners. The researcher of this dissertation conducted this next part of the research study after a detailed review of the

interview study data, as well as her investigations and collaboration in various other projects with MODAL Research Group that focused on young people's musical activities both in and outside of school contexts. To identify each of the areas that each participant exhibited, an exhaustive investigation of each interview was conducted, as will be detailed as follows in the next section. The selection of the case studies were directly based on the identification of all the participants that were exhibiting all three areas from the proposed framework for innovative learners, thus regarded as *innovative learners* due to being involved in all three areas. Once the framework for innovative learners, interrelated areas, and associated constructs was developed, the case studies (and identification of the innovative learners) were conducted over several months.

3.4.1. Exploratory study: Identifying innovative learners

This exploratory study is based on a qualitative design, using content analysis to code participants' open-ended responses and thematic analysis to explore further interpretations of selected case studies. The use of this flexible approach (Lodico, Spaulding, & Voetgtle, 2010; Morgan, 2008) is helpful when an area or topic is relatively unexplored or unknown (Morse, 2003). Content analysis is useful for "exploratory or descriptive studies" (Berg, 2007, p. 259) and was used as the main method within the interview study to identify the extent to which participants were involved in each of the main areas of the proposed framework for innovative learners, and based on this analyses it was possible to identify the innovative learners. The use of this design is particularly useful for exploring a problem in which the questions may not be known or are unclear at the outset (Morse, 2003). While there is some controversy surrounding whether content analysis is qualitative or quantitative in nature, for the purposes of this study, it is assumed that content analysis is qualitative. This assumption is based on its ability to interpret qualitative categories, and to derive units of meaning that emerged from the participants' own words.

The data was analyzed using the proposed framework that is represented in Figure 3.2. Through the development of the framework, via a thematic analysis of the most relevant literature to determine the interrelated areas and associated constructs, clearly operational definitions of each area, and construct, were constructed as

presented in Chapter 2. Each interview was carefully read at least twice during this analysis process, upon commencing the coding. When refining the identification of the interrelated areas within the framework, a comprehensive search of the literature was conducted to assure the most applicable concepts were used, as well as the most succinct yet not overly conflated constructs associated with the areas were selected. Each area and construct was selected through a cyclical and iterative process that accommodated the necessity of adapting and refining the terms, and operational definitions, until the framework was thoroughly grounded within the literature, and fully represented the key interrelated areas that are associated with innovative learners within our 21st century digital age.

Figure 3.3 is an example of the coding template or frame used to code the Innovative Learner areas and log qualitative notes for analysis, in which each area would be coded with a check mark if aspects of that area were apparent in the interview, and pertinent notes would be outlined in each area for the analysis afterwards. Participants that exhibited aspects of all three areas were then further analyzed for whether they met the full criteria within the proposed framework for innovative learners through an independent member check to verify the initial analysis. This will be further elaborated below in Section 3.4.2. Coding and Analysis.

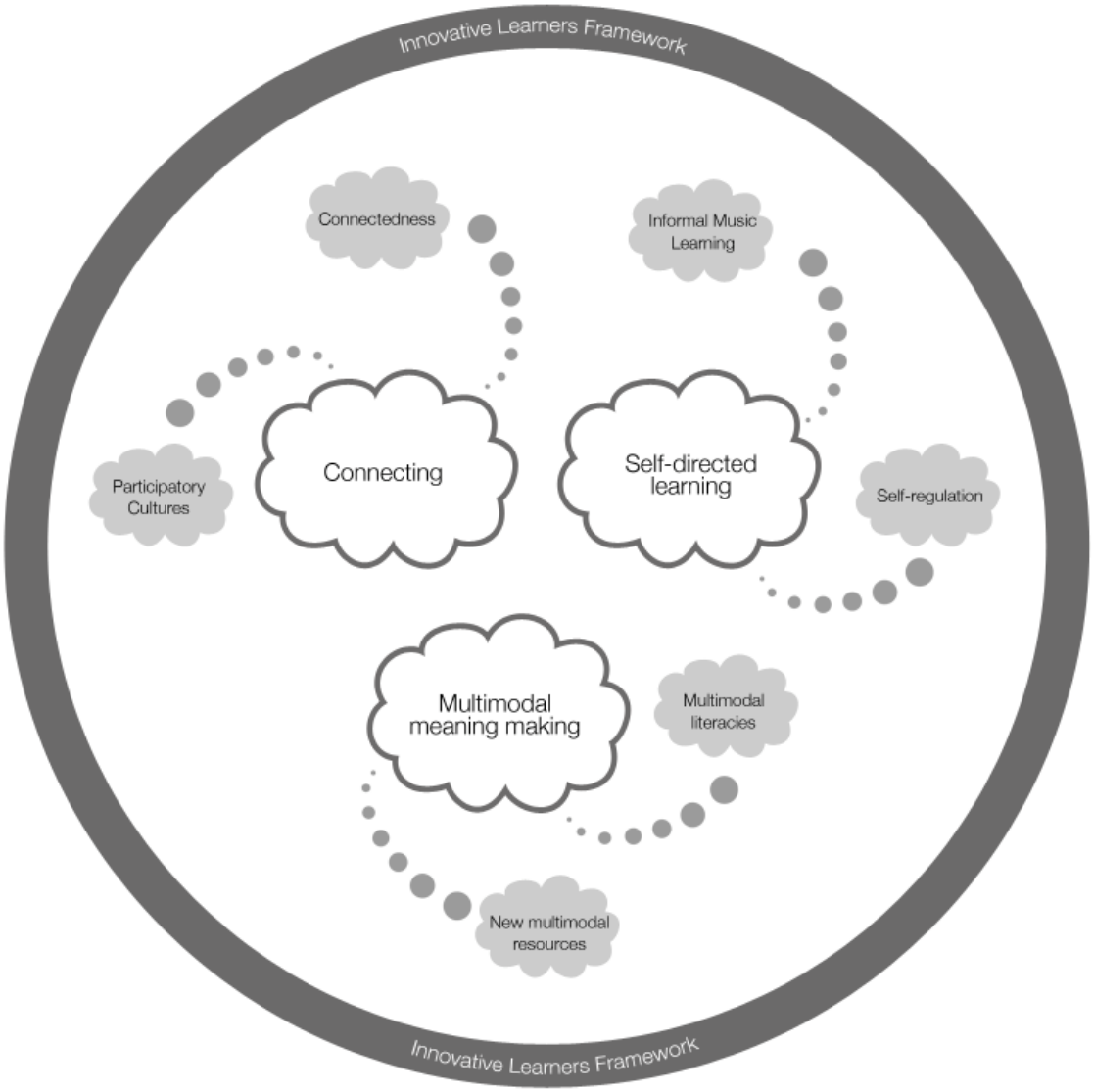

Figure 3.2. Framework for innovative learners

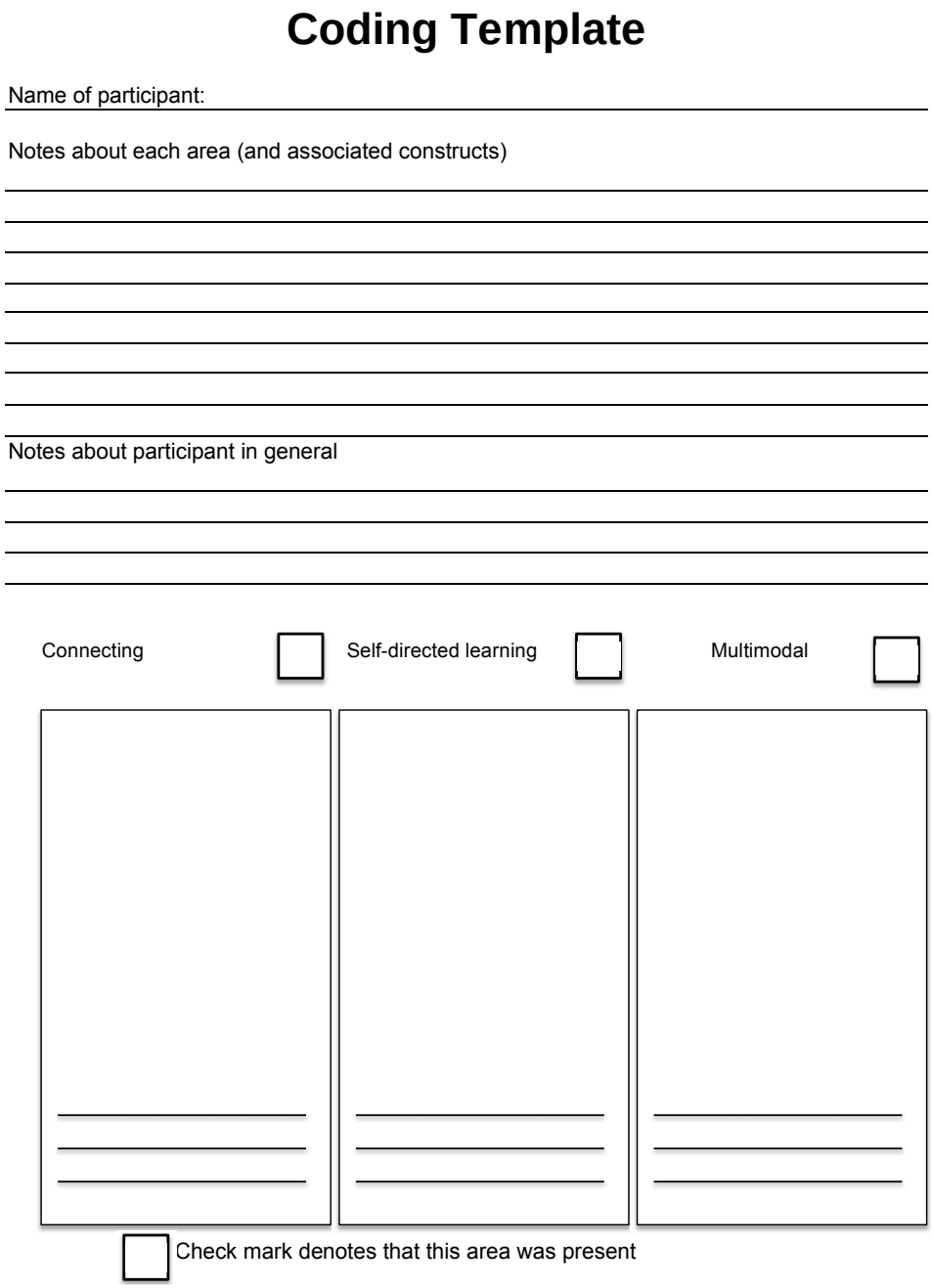

Figure 3.3. Coding frame

3.4.2. Coding and analysis

The interviews were transcribed and analyzed by at least two researchers, the participant names were changed to pseudonyms, and member checks were conducted

before finalizing the documents. The researchers completed a preliminary analysis of the transcripts for common themes and concepts using discourse analysis. Discourse analysis is a qualitative approach for analyzing written and spoken words through the facts presented as well as the context behind the words (Gee, 1999). In addition to the use of discourse analysis to analyze the transcripts, the terms that the participants used were considered for their underlying meaning. The participants may also have provided information about their statements that could be interpreted within their particular contexts, or via body language that was noted by the researchers' field notes (e.g., stating that they enjoy band class, while rolling their eyes in a negative fashion, or mentioning other contextual information during a previous part of the interview). Researchers then listened to the recordings of each interview, and coded all the musical activities that the participants listed they were involved in, as well as coding all the various technologies that the young people noted in their interview. This process of coding was then double checked by another pair of researchers to assure that the coding of the data was done correctly.

There are a diverse number of qualitative analysis approaches within research, yet Berg (2007) describes six standard aspects to the sequence of qualitative analysis in general: 1) "data are collected and made into text," 2) codes are developed for the data and assigned to notes or transcript pages, 3) codes are then "transformed into categorical labels or themes," 4) the materials are then sorted by category, phrase, relationship or commonalities, 5) the materials are sorts for "meaning patterns and processes," and finally 6) patterns are then identified "in light of previous research and theories and a small set of generalizations are established" (p. 240). This format of coding, interpretation, and analysis is was what was employed during the interview study analysis.

The use of content analysis allows for "systematically and objectively identifying special characteristics of messages" (Holsti, 1968, p. 608, as cited in Berg, 2007, p. 240). As the data originated from recorded audio interviews, and transcribed into text-based transcriptions, this is in line with one of the ideal uses for content analysis (Berg, 2007). As "content analysis can be fruitfully employed to examine virtually any type of communication (Abrahamson, 1983, as cited in Berg, 2007, p. 241), and it can be used for either quantitative or qualitative features of communicative messages, it was thought

to be an appropriate methods for coding the constructs within the framework for innovative learners. A further important note about the use of content analysis is that "it is a passport to listening to the words of the text, and understanding better the perspective(s) of the producer of these words" (Berg, 2007, p. 242). As such, it paired well with the underlying focus of the study to use the perspectives of the participants themselves, and to explore their dominant views on their musical engagement within their own words.

The content analysis commenced with first reading through each of the interviews to gain insight into the holistic perspectives of the 93 participants. As there are clear definitions of each interrelated area and their associated constructs based on the extensive literature review in Chapter 2, the process of developing the codes to be used was structured around these key perspectives of each area, and each area was given a colour code, which was then transformed into the categorical label. The researcher then proceeded to take a printed version of each participant's interview, as well as the list of all the musical activities and technological activities coded in the previous analysis noted above. Taking three different coloured pens (each associated as a code with a particular one of the areas to be coded), the researcher then proceeded to read through the interview, sorting through and identifying any phrases, statements, patterns, or differences that could be associated with one of the three areas of innovative learners, as well as noting specific words, themes, paragraphs, concepts, or units of meaning, that were related to the constructs. It is of note that particular units of meaning could include a word, series of words, or even a sentence. Of deeper significance to understanding the scope of the analysis, simply mentioning a word would not automatically dictate that a particular area would be coded. For example, to elaborate, the term *YouTube* was mentioned in many participants' interviews, though the use of the term on its own did not denote multimodal meaning making, or being coded in that area. The description of the digital media use of YouTube, when combined with a participant using it to create their own musical creations, and share them with their virtual community, for feedback and sharing, would then be assessed as a unit of meaning that could potentially be coded within that particular area.

As the interviews looked at the initiators, sustainers, and benefits of the young people's musical engagement, in relationship to their personal, social and

systemic/environment contexts, there were multiple opportunities for the youth to describe how they 1) connect and learn within and outside of formal education, 2) personally value their musical participation, and 3) multimodally make meaning when engaging in their favourite musical activities.

Using Berg's (2007) processes for content analysis, the interactions of determining the basic units, as well as the particular categories that would be assigned to a unit, were grounded in the theoretical and empirical literature that was reviewed. Once the data was prepared, and was first coded with the categorization of pertinent words, themes, statements, quotes or sentences, a member check was conducted during this process, as well as during the consequent coding of the extent the participants exhibited areas of the innovative framework. Qualitative content analysis provides the ability for researchers to "condense raw data into categories or themes based on valid inference or interpretation" (Zhang & Wildemuth, 2009, p. 309), though a member check was necessary to ensure consistency in the coding and interpretation. During this member check, the researchers either came to an agreement on the coding, or reached a consensus after discussion and reference to the literature that surrounded the particular area being coded. The content analysis incorporated a coding frame (Figure 3.3) that was created for the purposes of the coding of the areas, which provided organization for the coding process. Going through each interview again, using Berg's framework as the guide, the data was then organized into particular areas for each participant. The next part of the coding considered participants' answers that included detailed explanations or elaborations. Finally, any cases were noted in which the participant's response could not be determined within a category, or if they contradicted their original statements.

After the data for each participant was organized into sections, a master coding list of the categories (areas), associated constructs, operational definitions for assigning codes, as well as sections to denote field notes or large sections of transcript data, was developed to be used with the coding frame (Figure 3.5). When it was determined whether a participant was exhibiting aspects of a particular area, and if there were specific constructs that were related to their statements, phrase, or quote surrounding the particular area, a member check was conducted to confirm consistency within coding. The coding of a particular area was dependent on the participant exhibiting

multiple instances of at least one construct within their interview (not just having one instance on a construct). As content analysis was used as an analysis tool, rather than a complete agenda for conducting the research (e.g., as a way to actually conduct the interviews), the primary weakness (needing to have pre-recorded data to assist in locating "unobtrusive messages relevant to the particular research questions" (Berg, 2007, p. 259)), of the analysis technique is mitigated, as the interviews were already pre-recorded and transcribed. The process of coding and analyzing the interviews for the case-studies was accelerated by having the coding frame/template already completed, as well as the participant interview marked up for the units of meaning regarding each area. However, despite this preparation and prior analysis, another review of the 11 interviews was conducted to explore further emergent themes based on the notes within the coding. This final pass of the data sometimes revealed other quotes or perspectives from the participant that may have been missed during the initial coding as a more in-depth understanding of each category developed.

At this point, the data was then entered into SPSS to note whether a participant exhibited none, one, two, or all three of the areas proposed to be associated with innovative learners. The combination of areas was also input at this time (e.g., if 2 areas of connecting and self-directed learning were apparent for a particular participant). At this point, it was determined that there were 11 participants that could be identified as innovative learners. A fresh print-out of these participant interviews was then generated, to conduct another review to make sure that these 11 did indeed exhibit all three areas of being innovative learners, and to investigate whether there were any particular characteristics that were specific to these learners, in comparison to those that only exhibited 2 areas (or less) of the framework.

3.4.3. Case studies

Once the participants that exhibited all three areas of the innovative learner framework were identified, a case study approach was used to further elaborate on their musical lives. Due to the interconnected nature of these areas, and the fact that the integration of these areas into young people's daily lives are riddled with complexities and nuances involving a technologically infused age, the use of case study research was

thought to be the best approach for helping to understand this "complex social phenomena," without distorting the context (Yin, 1989, p. 14). Yin (2003) explains that case study research allows for the investigation of "contemporary phenomenon within its real life context" and where it is not clear where the boundaries exist between the phenomenon and the context (p. 13), thus providing the opportunity to build on and contribute to existing theory. Further, Yin (2014) suggests,

> Case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a 'sample', and in doing a case study, your goal will be to generalize theories (analytical generalizations) and not to enumerate frequencies (statistical generalizations). (p. 21)

Indeed, the further the research probes into the experiences of the participants, deeper into the layers of what the participants are saying, the more that the findings will become a part of the analytical generalizations that will contribute to theory (Yin, 2014). In sum, the spirit of case studies presented in this thesis is to investigate the holistic unit of the particular phenomenon within its own context, and while the findings are not universally generalizable across all young innovative learners involved in musical activities, it can make a useful contribution to existing knowledge and theory development. As Eisenhardt (1989) points out, case studies are "particularly well suited to new research areas or research areas for which existing theory seems inadequate" or "when a fresh perspective is needed" (pp. 548-549).

3.5. Summary

This exploratory study endeavours to provide a better understanding of young people's perspectives and the discourses they use to describe their music engagement in their everyday lives. The discourses that young people use to describe their experiences represent their own personal constructions or worldviews about what is meaningful and relevant to them (O'Neill, in press-b). It was therefore young people's own perspectives and interpretations of their experiences that were sought rather than direct observations of their music engagement. The purpose of this research was not to explore what the youth are *learning*; rather, this research is an exploration of the forms

of learning they are describing when they talk about their musical engagement. The open-ended questions used within the interviews also provided an opportunity to gain an insight into the vocabulary and terminology that young people use and the areas that they felt were important to draw on in their descriptions of their musical activities. The study was therefore designed to give participants an opportunity to convey 'in their own words' what they were aware of and what they perceived as being meaningful to them in relation to their engagement in musical activities. As such, any omission of particular activities or experiences by young people during the interviews was not necessarily an indication that they were not involved in music in ways other than those they described. Although the interview procedure focused on gaining as full a list as possible of each participant's musical activities, the focus was on young people's own reports of what was of particular interest and mattered most to them at the time of the interview.

The next chapter will detail the findings of the interview study of music engagement that emerged about the young people's diverse musical contexts. Following that, Chapter 5 will address the case studies of the participants that were identified as innovative learners. Finally the emergent themes that manifest from the interviews and case-studies will be discussed, along with a detailed analysis of the each of the interrelated areas that are associated with 21st century innovation and learning, and the related constructs, that innovative learners explore within today's musical and digitally-infused world.

Chapter 4.

Findings: Interview study of music engagament

This chapter will present the results and discussion of the interview study data analysis. As detailed in Chapter 3, the data collection focused on participants' two main or favourite musical activities, the initiators, sustainers, and perceived benefits for each of these activities, and the personal, social, and systemic influences and factors they associated with their involvement in these musical activities. The demographic background of all the participants in this study and their involvement in musical activities and technology within their musical activities is also described before moving on to the results of the content analysis based on the proposed framework for innovative learners. The case studies of the innovative learners engaged in musical activities and digital technology through a combination of (1) connecting, (2) self-regulation, and (3) multimodal exploration to frame their meaning making will follow in Chapter 5.

4.1. Participants

4.1.1. Initial background of participants: Demographics

There were 10 elementary participants, 20 middle school participants, and 63 secondary school participants. For a breakdown of the participants' grade level, see Figure 4.1. Out of the 93 participants, 58 were male and 35 were female (see Figure 3.2), and they ranged in age from 11 to 18 years old (mean age of 15) (see Figure 4.2).

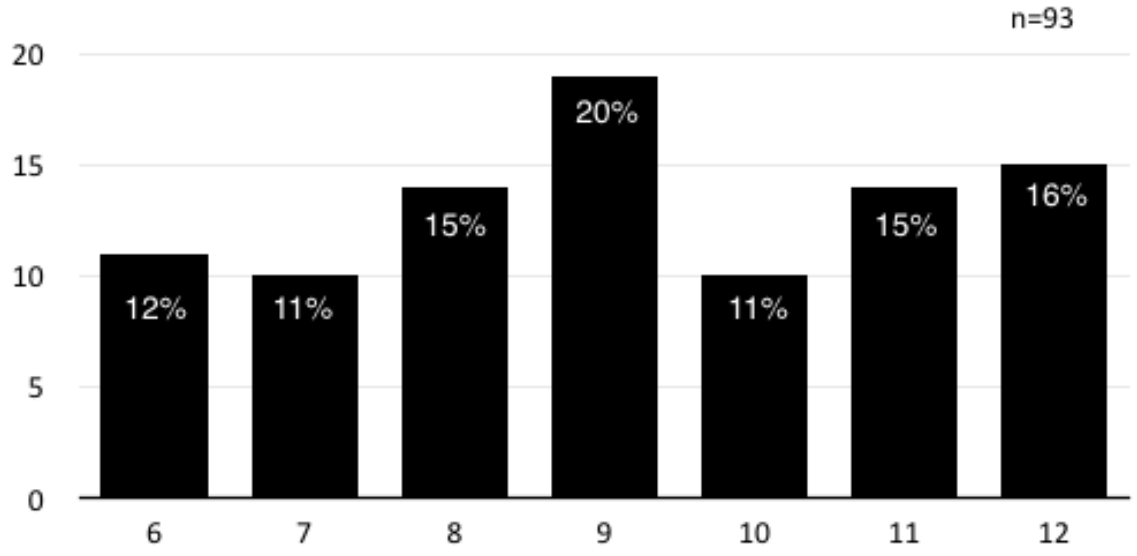

Figure 4.1. Grade of participants

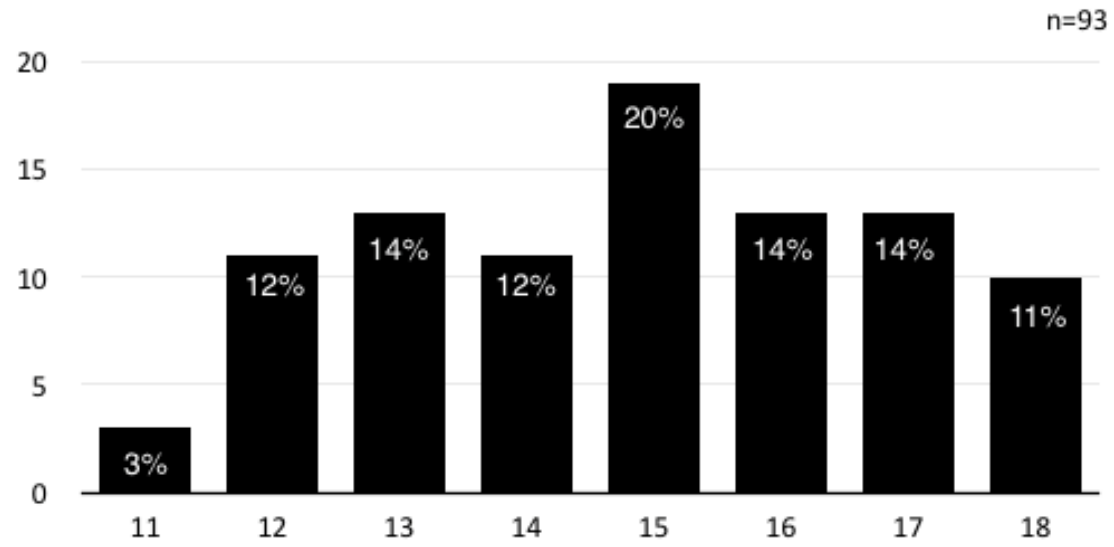

Figure 4.2. Age of participants

All the participants played at least one musical instrument. Knowledge of a musical instrument was not a condition of a student's participation in the study, as the interviews were open to any participants that wanted to share about their musical activities, regardless of their musical abilities.

4.1.2. Initial background of participants: Musical activities

All of the participants reported listening to music in one way or another, and many listened to music as a part of other artistic and musical activities (e.g., dance or composing). The mean number of music activities participants reported being involved in was 5.65 activities (see Figure 4.3). Some participants reported being involved in as few as two activities, through one young person reported being involved in a total of 13 musical activities.

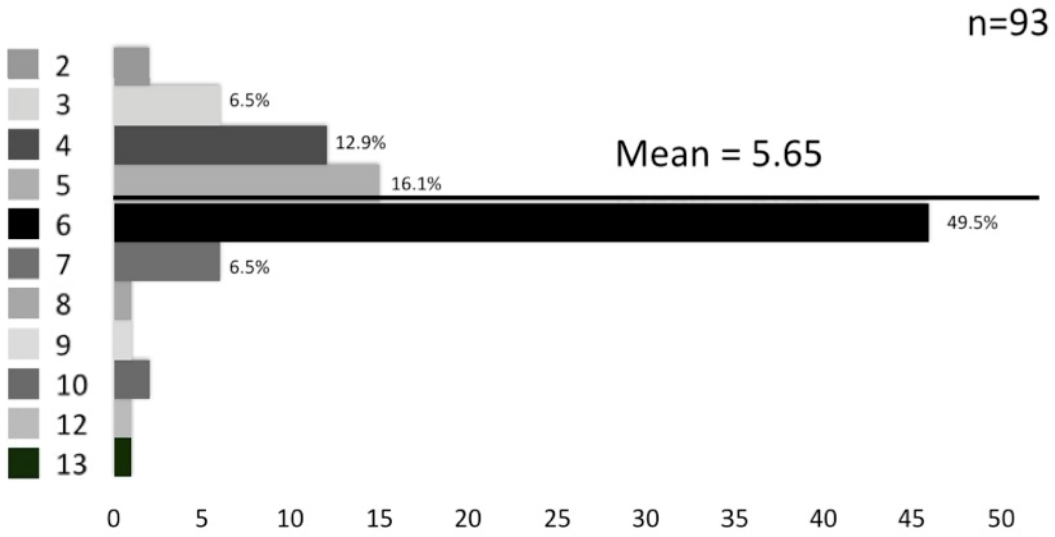

Figure 4.3. Number of musical activities participants reported being involved in

Participant background: Musical activities

The youth that were interviewed in this study reported involvement in a variety of traditional musical activities (e.g., playing band instruments) through to activities that were highly technological in nature (e.g., using iPods to listen to and record music) that would not have been available to young people prior to the digital revolution. The main types of activities the participants described doing within their daily musical lives included:

> *Listening to Music*: via a wide mixture of formats (old and new media), from iPods, YouTube, CDs, Music Videos, TV, Movies/Film, Computer and Live Music/Concerts.

Band or Music Group: this included playing in formal musical group activities such as Jazz Band or Concert Band at school, to a Band specifically in their home or garage, to Music Performance Groups that they were involved in both at school and outside of school.

Playing the Guitar: a common musical activity that many of the participants noted they were involved with was the guitar (acoustic, electric, bass, etc.).

Singing: this included being involved in voice lessons, singing at school or at home, singing for leisure, or even singing as a part of social activities.

Playing Woodwinds or Brass Instruments: this musical activity was typically paired with formal music lessons or formalized education in some respect.

Playing Piano: this musical activity was a part of both outside school and within school contexts, and was often paired with other musical activities such as learning another instrument, improvisation, or writing/composing music.

Composing, Writing or Recording Music: this particular musical activity provided a deeper understanding of how young people are multimodally engaging in musical activities through technology, as many of the participants noted that they would compose, write or record music, lyrics or a combination of the two, along with some participants using other multimodal resources such as video. (Note: the participants often used the terms composing, writing, and recording music interchangeably. For example, the term "composing music" in some cases was referring to creating music via recording programs on a computer).

4.2. Family members

Of the 93 participants, 90% of the young people stated that they had a family member that played an instrument or sang (see Figure 4.4). A family member could include a female or male parent/guardian, sibling, aunt, uncle, cousin, grandparent, or other relative. Figure 4.5 shows the breakdown family members that played a musical instrument or sang. While parents and siblings were the common response, 39% of participants reported that their father and/or brother(s) played or sang, which is higher than the reports of their mother or sister(s). Singing was reported by 72% of the young people, with 28% of the 93 participants stating they didn't sing.

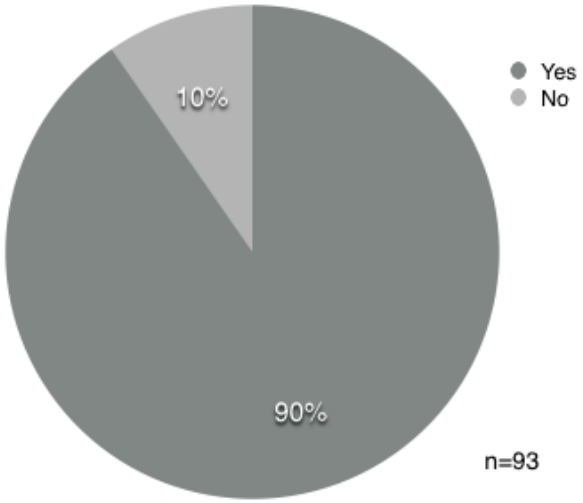

Figure 4.4. Percentage of participants reporting that a family member plays a musical instrument or sings

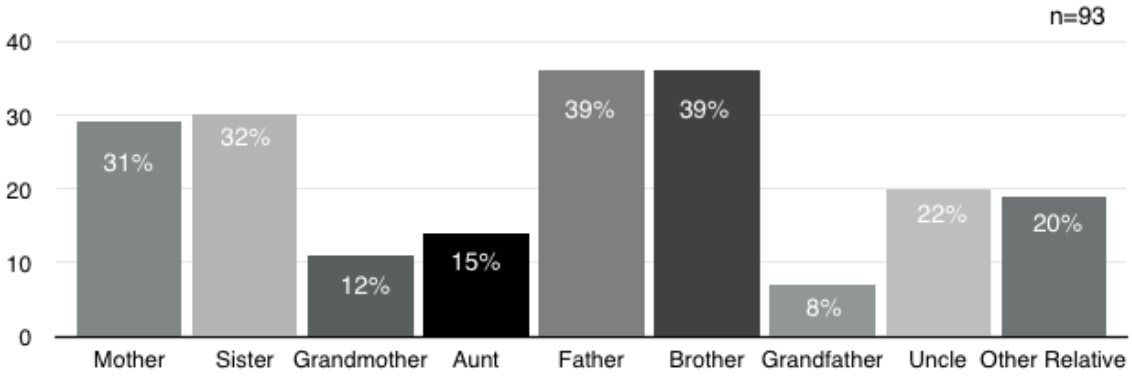

Figure 4.5. Number of family members that play a musical instrument or sing

4.3. Technology usage in young people's musical lives

The participants were not expressly asked to list their technology usage when engaging in musical activities, rather their answers about their digital technology usage were spontaneous as a part of their descriptions of their daily musical activities. An intriguing finding was that over 89% of the students reported without prompting that they used some form of digital media in their daily musical activities (e.g., iPods, YouTube, GarageBand, Music Video Games). The use of technology (e.g., iPods) was not an extraneous accessory to their daily engagement in music; rather it appeared to play a central role in their descriptions of their musical lives. Figure 4.6 shows the types of

technological mediums that the young people reported using as part of their daily musical activities. Almost three quarters (72%) of the participants noted that they used an iPod (including iPhones once these devices were available in Canada) as a part of their musical activities. This finding is interesting considering that the iPod was a relatively new invention in comparison to other musical technology devices like MP3 players or CD players, which had been available for longer. Further, the capabilities of iPods at the time of this study (e.g., a fully configured App Store to purchase millions of Apps, or even the capability to create a custom App) would be considered archaic compared to even the most simplistic of mobile technologies on the market today. Computers/Laptops also were a main aspect of their musical lives. Older forms of media, such as radios, stereos, and CDs were also a large part of their listening activities, though they were typically reported as an additional technology within their lives, not the sole, or primary one.

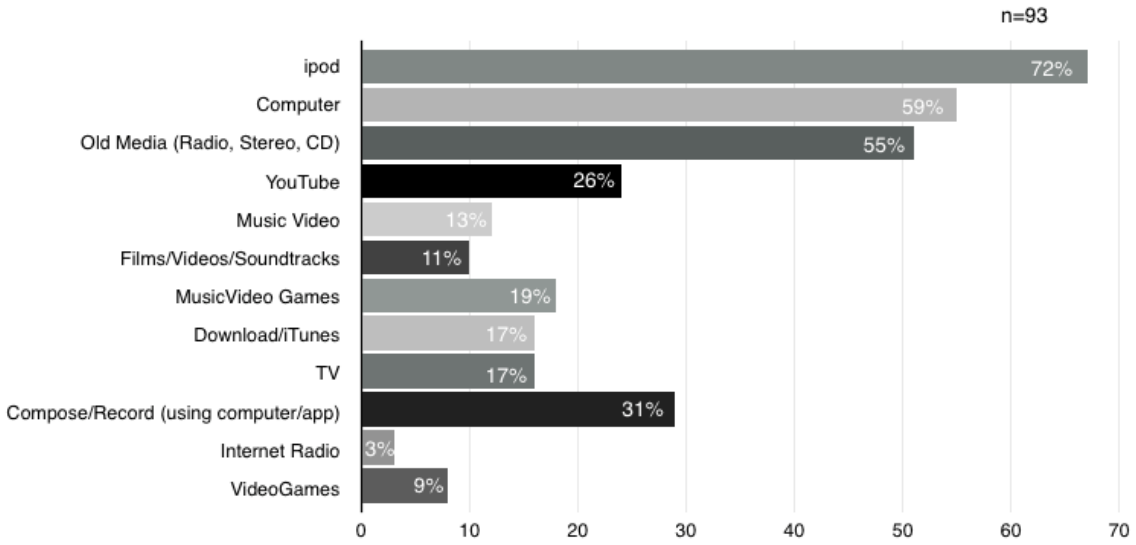

Figure 4.6. Number of participants reporting using different types of technology for musical activities

Participants' usage of these diverse technologies occurred primarily outside of school, or both at home and at school, as seen in Figure 4.7. Further, this technology usage as a part of their musical activities rarely occurred solely at school, with only five participants reporting using technology for musical activities at school only.

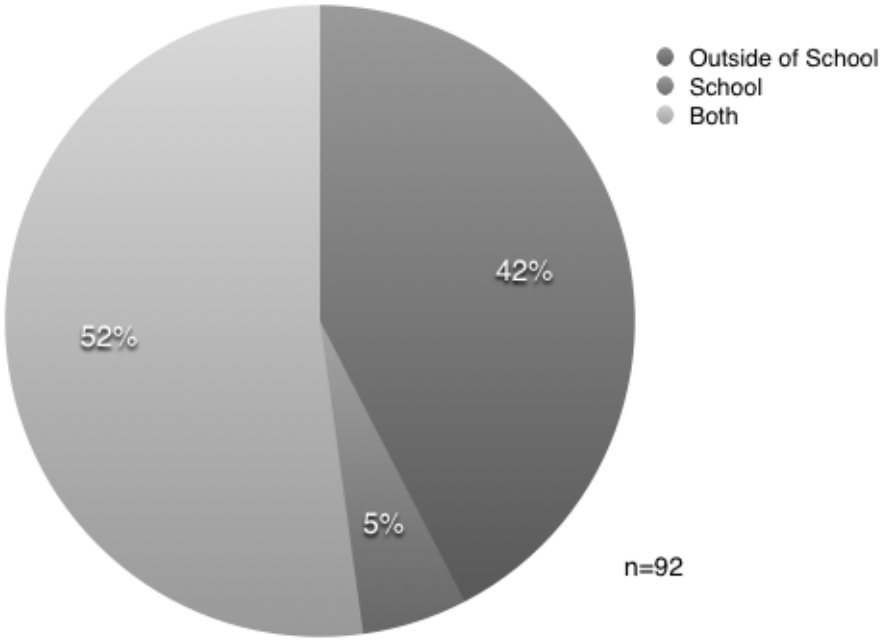

Figure 4.7. Percentage of technology usage for musical activities at school, outside school or both

4.4. Musical activities in general

4.4.1. Young people's involvement in musical groups

Many of the participants reported that they were involved in a band or musical group, either within school, outside of school, or at a combination of both. Formal musical group activities included Rock Band, Jazz Band, or Concert Band at school, and/or an informal band with friends at their home or garage, as well as participation in performing at community gatherings or events. Figure 4.8 shows the various types of musical groups, bands, or communities that the participants reported as a part of their daily musical lives, using their own terminology. There were 125 musical groups reported among the 93 participants. It was possible for participants to be coded for more than one musical group, as all the musical groups the participants mentioned in their interview were included in the analysis.

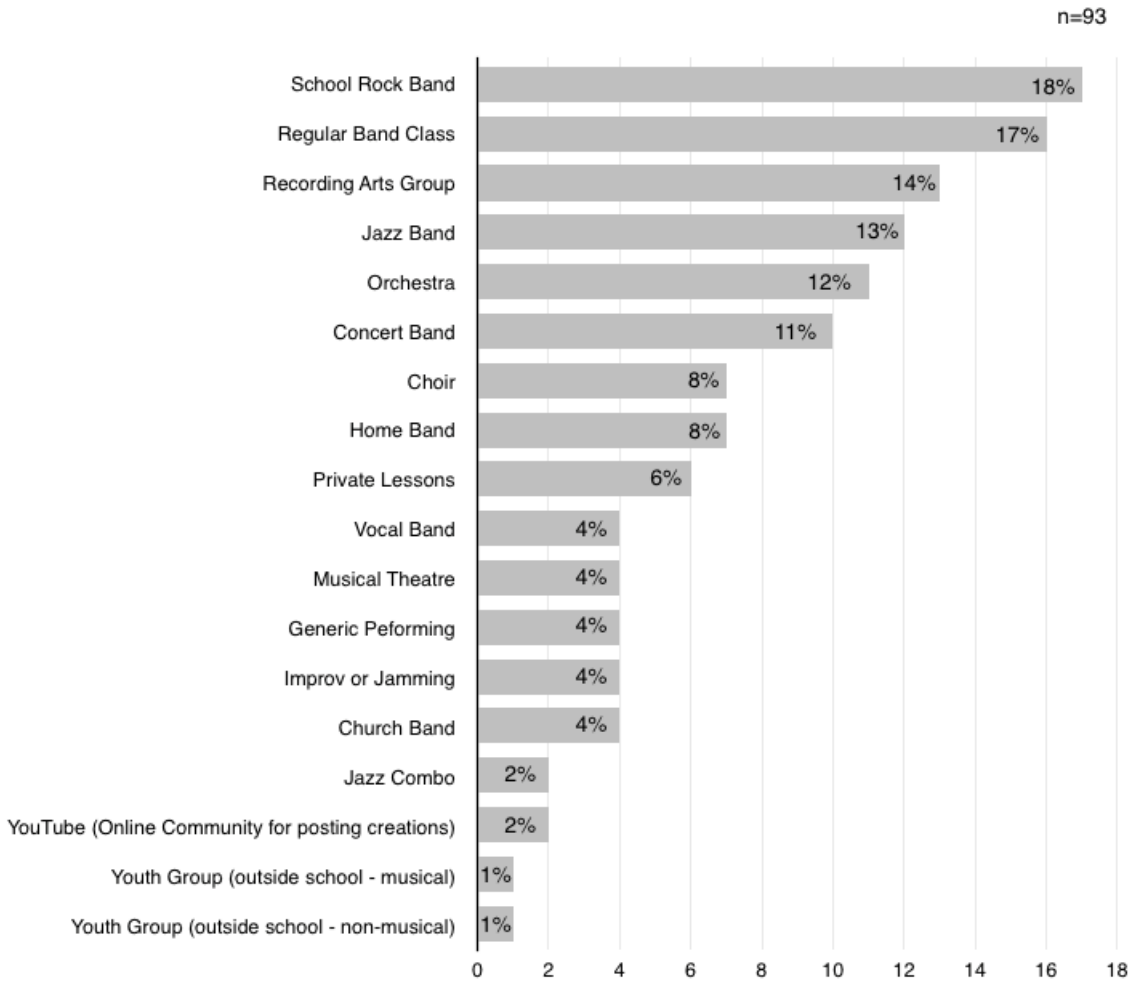

Figure 4.8. Number of musical groups participants reported being involved in

4.4.2. Most common musical activities

Of the most common musical activities that the young people in this research mentioned was playing the guitar, which included acoustic, electric, or bass guitars being played independently, with friends or peers, with family members, as part of a musical group (as noted in the previous paragraph), or for the purposes of performance. Playing the guitar for some young people was instigated by social or environmental impetuses, such as having family members or peers that played the guitar, or by having a guitar program or rock band program at their school. Some youth mentioned that it was through the playing of music video games, in which they got to play the virtual digital guitar within interactive social video games (e.g., RockBand and Guitar Hero). This

technological form of musical activity incorporates modern rock and pop music playing, improvising, learning chord and song details, and even multiplayer social playing of complex songs.

The next most common musical activity that young people mentioned as a part of their daily lives was singing. Singing, just like the guitar, could occur at school, at home or at a combination of both, and within a variety of social contexts. Many participants did not mention who they sang with, or if it was a solo activity. Of the participants that did elaborate, singing included singing in the choir at school, Vocal Jazz, Musical Theatre at school or with a community group, singing for leisure or with family or friends, and also as a part of other social activities such as church or public performances.

Traditional instruments such as woodwinds and brass were also a common musical activity, though unlike listening, guitar, singing or other musical activities, young people's involvement in these musical activities were typically paired with formal music lessons, or formalized education in some respect, such as playing an instrument in Band class, Jazz Band, or Orchestra. Many of the youth that were involved in the playing of these musical instruments would often play their instruments at home, but a majority of their discussions around this musical activity was associated with formalized contexts.

Playing the piano was another common musical activity that many young people noted as a part of their musical lives, yet unlike brass or woodwinds, this musical activity typically took place within outside school contexts and school contexts. Young people that reported playing the piano often described it in relation to other musical activities such as learning another instrument, improvisation, or writing/composing music — and in a few cases, in finding the inspiration to play or do other musical activities. Further, playing the piano was also associated with other activities outside of music, such as playing the piano as a way of helping a student to become better at other subjects.

Other musical activities that young people mentioned quite often were composing, writing, or recording music (these terms were used often interchangeably). Some participants reported being involved in remixing music with other modal resources such as visuals. This particular musical activity provided a deeper understanding of how young people are multimodally engaging in musical activities through technology, as

many of the participants noted that they would compose, write or record music, lyrics or a combination of the two, and some participants reported using other multimodal resources such as video. This musical activity included a range of technological involvement: a few participants reported hand-writing their musical compositions and then using a computer to transcribe the compositions for performance, whereas others reported using their computer or iPod to engage in more complex technologies for music creation. At the time of this study, music composition ranged from hand-written composition and transcription to complex and expensive desktop computer composition software. Due to the expense and exclusivity, in rare occasions, the usage of recoding studios and professional grade software and configurations was a possible option for music composition. The forum for musical composition was quite diverse considering the limitations of technology in comparison to today (e.g., evolution of technology, and the use of mobile apps for composing is now a current day option). Composing, writing or recording of music extended from personal practice use, for live performance, or for more advanced purposes such as uploading to YouTube for interactive feedback and sharing.

4.5. Top two most meaningful musical activities

Participants were asked to indicate their favourite or most meaningful musical activities. The responses included over 100 different descriptions of musical activities, which were categorized according to similar features based on: (1) Playing (an instrument or musical device), (2) Listening (to music in some capacity), (3) Singing (including voice lessons, musical theatre, choir), (4) Writing Music/Recording or Remixing Music/ Composing Music, and (5) Dancing. For example, 'playing the electric guitar' and 'being in band class' and 'practicing the trombone' were placed in the category "Playing", and responses such as 'composing music' and 'recording and remixing music for YouTube,' were placed in the category of "Writing/Recording/Composing Music." The majority of participants chose playing a musical instrument as their primary or top musical activity, with other musical activities only encompassing a small selection of their choices, as seen in Table 4.1.

Table 4.1. Choice of primary musical activity

Activity	Number (and percentage)
Playing (an instrument or musical device)	68 (73%)
Listening (to music in some capacity)	4 (4%)
Singing (including voice lessons, musical theatre, choir)	13 (14%)
Writing/Recording/Composing Music	6 (6%)
Dancing	2 (2%)

For the participants' secondary choice of musical activity, see Table 4.2. Playing a musical instrument was the most common choice at 37% of the responses and 32% of the participants chose listening to music.

Table 4.2. Choice of secondary musical activity

Activity	Number (and percentage)
Playing (an instrument or musical device)	34 (37%)
Listening (to music in some capacity)	30 (32%)
Singing (including voice lessons, musical theatre, choir)	12 (13%)
Writing/Recording/Composing Music	8 (9%)
Dancing	3 (3%)
Technology/Media	4 (4%)
Other	2 (2%)

4.5.1. How often participants are engaged in their primary and secondary musical activities

Table 4.3 indicates the number (and percentage) of participants reporting the frequency of how often the engaged in their primary musical activity and Table 4.4 shows how often they engage in the secondary musical activity. As Table 4.3 demonstrates, the majority of the participants were involved in their primary musical activity several times a week.

Table 4.3. How often are the primary musical activities done?

Activity	Few times a year	Every month	Few times a month	Once a week	Several times a week	n
Playing (an instrument or musical device)	1 (1.5%)	0 (0%)	2 (2.9%)	1 (1.5%)	64 (94.1%)	68
Listening (to music in some capacity)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (100.0%)	4
Singing (including voice lessons, musical theatre, choir)	0 (0%)	0 (0%)	0 (0%)	1 (7.7%)	12 (92.3%)	13
Writing/Recording/ Composing Music	1 (16.7%)	0 (0%)	0 (0%)	0 (0%)	5 (83.3%)	6
Dancing	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (100.0%)	2

Table 4.4 demonstrates a wider variety in the types of secondary musical activities, and included more diversity in how often the participants were involved, with playing a musical instrument only occurring a few times a month for a couple of the participants.

Table 4.4. How often are the secondary musical activities done?

Activity	Few times a year	Every month	Few times a month	Once a week	Several times a week	n
Playing (an instrument or musical device)	0 (0%)	0 (0%)	2 (6.3%)	3 (9.4%)	27 (84.4%)	32
Listening (to music in some capacity)	0 (0%)	1 (6.3%)	0 (0%)	0 (0%)	26 (96.3%)	27
Singing (including voice lessons, musical theatre, choir)	0 (0%)	0 (0%)	0 (0%)	1 (9.1%)	10 (90.9%)	11
Writing/Recording/Composing Music	0 (0%)	0 (0%)	0 (0%)	2 (28.6%)	5 (71.4%)	7
Dancing	0 (0%)	0 (0%)	0 (0%)	2 (66.7%)	1 (33.3%)	3
Media/Technology	1 (25.0%)	0 (0%)	0 (0%)	0 (0%)	3 (75.0%)	4
Other	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (100%)	2

4.5.2. How long participants have been doing their primary and secondary musical activities

Table 4.5 shows the number (and percentage) of participants reporting how long they have been doing their primary musical activity and Table 4.6 shows how long they have been engaging in their secondary musical activity. The findings indicate that there was a diverse response in how long they have been involved in their musical activities.

Table 4.5. How long have the primary musical activities been done?

Activity	1-5 months	6 months – 1 year	2 – 3 years	4 – 5 years	More than 5 years	n
Playing (an instrument or musical device)	1 (1.5%)	11 (16.4%)	17 (25.4%)	14 (20.9%)	24 (35.8%)	68
Listening (to music in some capacity)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (100%)	4
Singing (including voice lessons, musical theatre, choir)	0 (0%)	0 (0%)	1 (7.7%)	2 (15.4%)	10 (76.9%)	13
Writing/Recording/ Composing Music	1 (16.7%)	1 (16.7%)	2 (33.35)	1 (16.7%)	1 (16.7%)	6
Dancing	0 (0%)	1 (50.0%)	0 (0%)	0 (0%)	1 (50.0%)	2

Table 4.6. How long have the secondary musical activities been done?

Activity	Just started	1-5 months	6 months – 1 year	2 – 3 years	4 – 5 years	More than 5 years	n
Playing (an instrument or musical device)	1 (3.2%)	1 (3.2%)	7 (20.6%)	6 (19.4%)	5 (15.2%)	18 (54.5%)	31
Listening (to music in some capacity)	0 (0.0%)	1 (3.7%)	3 (11.1%)	3 (11.1%)	0 (0.0%)	19 (70.4%)	27
Singing	0 (0.0%)	0 (0.0%)	2 (18.2%)	4 (36.4%)	2 (18.2%)	3 (27.3%)	11
Writing/Recordi ng/Composing	0 (0.0%)	3 (42.9%)	3 (42.9%)	0 (0.0%)	1 (12.5%)	0 (0.0%)	7
Dancing	0 (0.0%)	0 (0.0%)	1 (33.3%)	1 (33.3%)	1 (33.3%)	0 (0.0%)	3
Media/Tech	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	2 (50.0%)	1 (25.0%)	4
Other	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (100%)	1

4.5.3. Location of top two musical activities

Only 18 (19.4%) of participants reported being engaged solely in their primary musical activity outside of school (e.g., at home or at a friend's house), with an even smaller number of students (n=8) reporting involvement in their primary musical activity solely at school (8.6%). The remaining 67 (72%) participants indicated that their primary musical activity took place both at school and outside of school. Figure 4.9 shows the location in which the participants were involved in their primary and secondary musical activities.

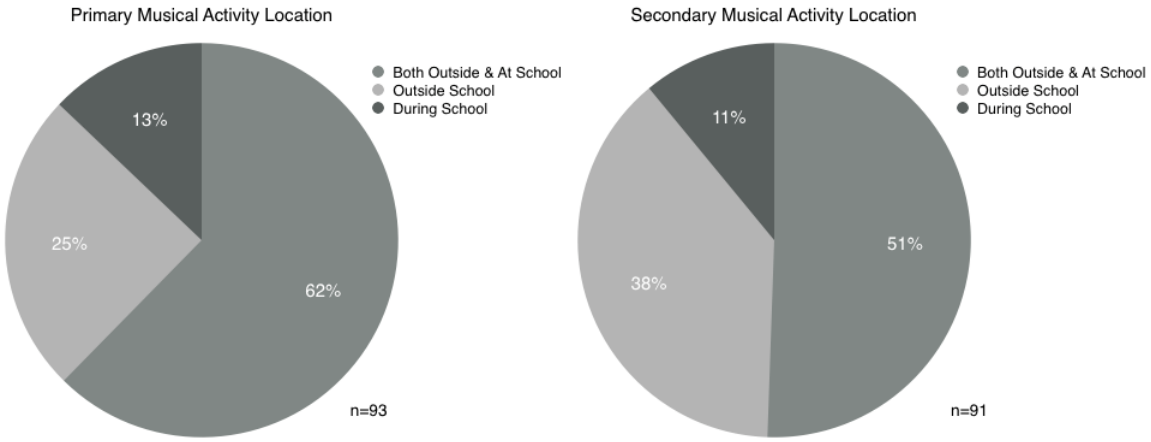

Figure 4.9. Percentage of primary and secondary musical activities occurring at school, outside school or both

4.6. Gender and musical activities

Although 68 of the 93 youth (73%) stated playing a musical instrument was their primary musical activity, the primary and secondary musical activities chosen by the participants differed according to their gender. For the primary musical activity, males were only involved in playing, singing, and composing/recording musical activities, compared to females who were more likely to be involved in playing, listening, dancing, singing, and even one participant was involved in composing.

In looking at the secondary musical activities that the participants chose, both the males and females were involved in playing, listening, singing, composing, and dancing. Further, there were additional activities with technology/media (e.g., Music

video games) that the males were involved in, and other activities (e.g., volunteering) that the females chose.

4.6.1. Musical activities by gender

Figure 4.10 shows the primary musical activities according to gender (percentages reported within gender), in which 49 (84%) males stated their top musical activity was playing an instrument, whereas female participants were more likely to be involved in wider range of musical activities that included listening, singing, and dance. Figure 4.11 shows the secondary choice of musical activity according to gender, in which 39 (67%) male participants chose other activities such as listening to music, singing, or using other technology or media (e.g., music video games), and females indicated a higher involvement in singing as a secondary musical activity than males.

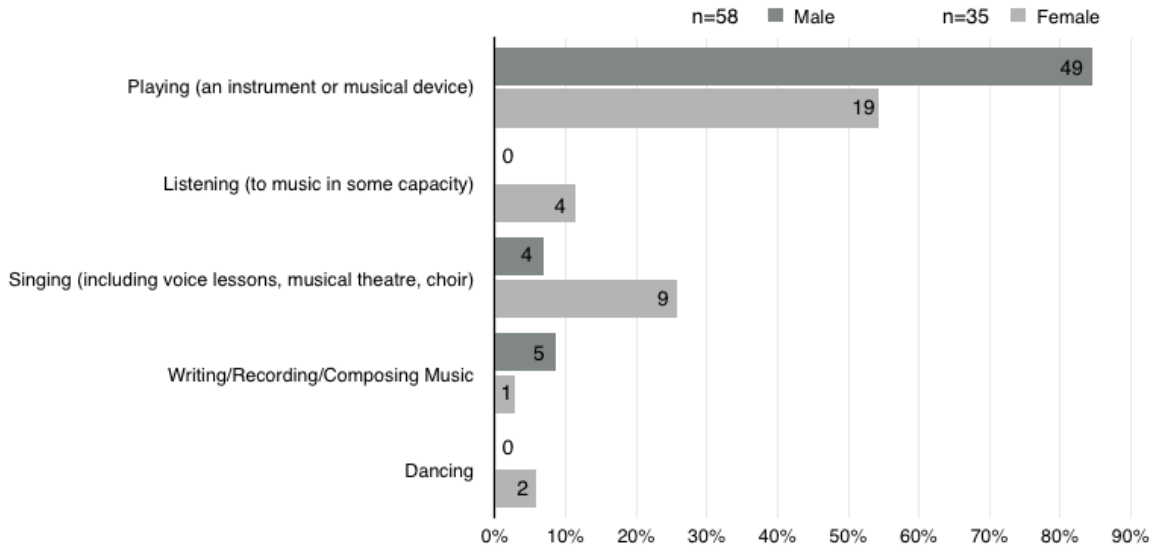

Figure 4.10. Primary musical activity choice according to gender

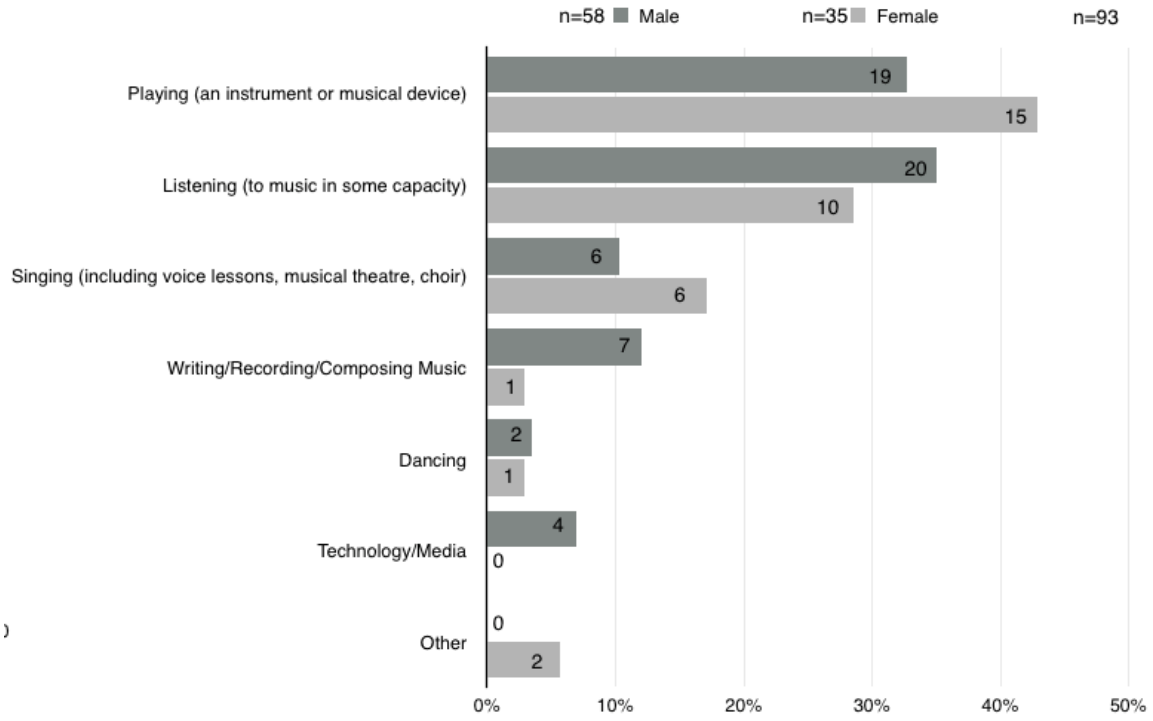

Figure 4.11. Secondary musical activity choice according to gender

4.7. Identifying innovative learners

4.7.1. Identifying three areas of the framework for innovative learners

The process of coding and analysis of the three areas of the proposed framework for innovative learner was detailed within Chapter 3. Through an extensive process of coding and analysis, all 93 participants were coded according to whether they exhibited characteristics of each of the three areas of *connecting, self-directed learning,* and *multimodal meaning making.* There were 38 (40.9%) participants showing aspects of connecting (23 males and 15 females), 49 (52.7%) participants exhibiting aspects of self-directed learning (36 males and 13 females), and 23 (24.7%) exhibiting aspects of multimodal meaning making (15 males and 8 females). Of the total 93 participants, 23 (24.7%) young people did not exhibit sufficient aspects of any of the three areas to be coded within an area.

4.7.2. Number of participants according to age in each area of the framework for innovative learners

Figure 4.12 shows the ages of the participants that were classified according to the areas of the framework for innovative learners (n=70), as well as those that were not classified in any particular area (n=23). *Connecting*: Youth that exhibited aspects of Connecting had a mean age of 15.42 compared to 14.47 for youth that didn't exhibit this area. *Self-directed learning*: Of the youth who exhibited aspects of this area, their mean age was 15.02 compared to 14.68 for youth who didn't exhibit aspects of this area. *Multimodal meaning making*: Of the youth who exhibited aspects of this area, their mean age was 15.70 compared to 14.59 for youth who didn't exhibit aspects of this area.

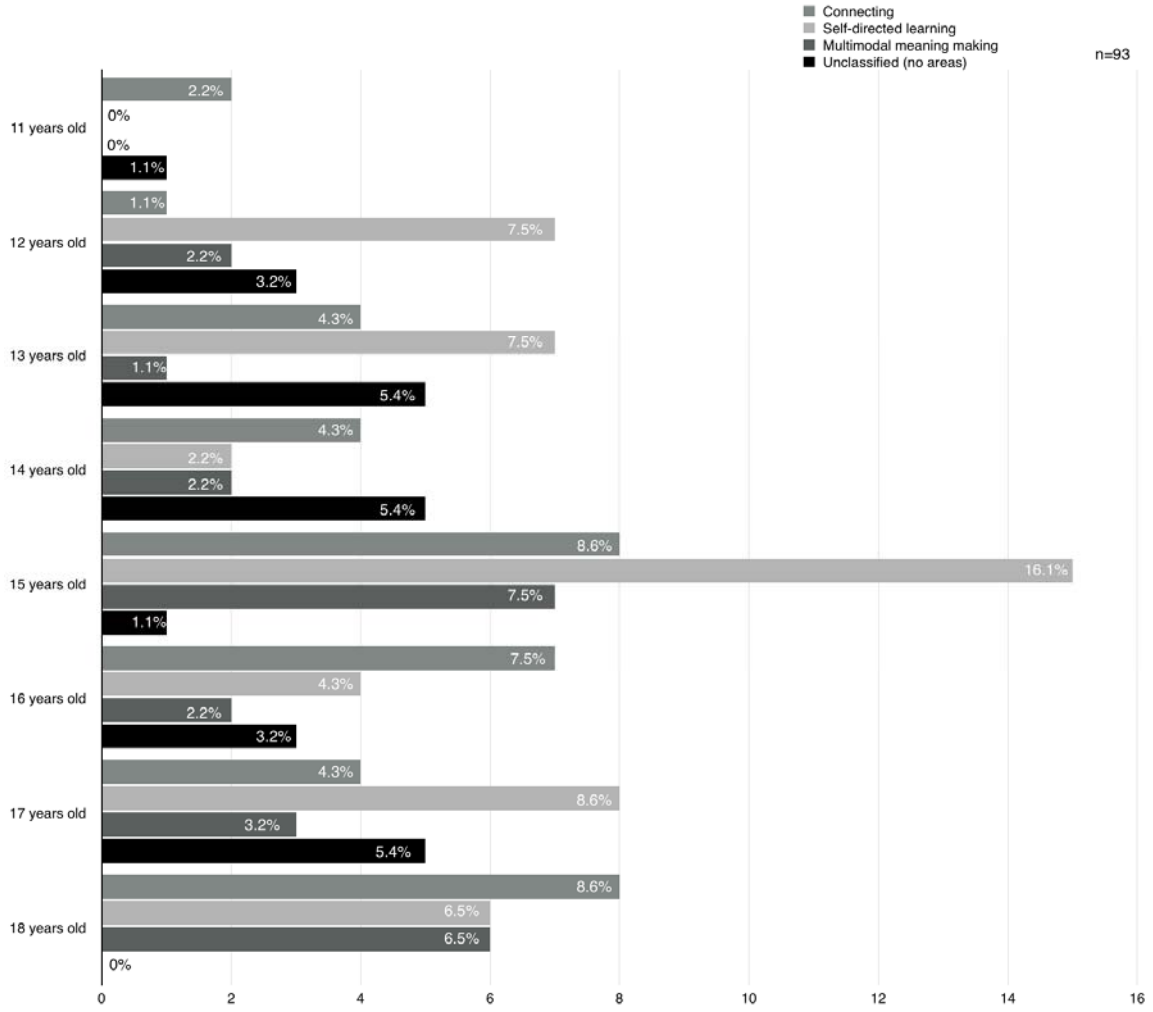

Figure 4.12. Number of participants according to age in each area of the framework for innovative learners

4.7.3. Frequency of involvement in primary and secondary musical activities by innovative learners and other youth

Participants that exhibited all three areas versus those that only displayed two or less areas did not differ significantly in their frequency of involvement (how often they did their activity) for their primary musical activity. 100% of innovative learners were involved in their primary musical activity several times a week, and 92.7% of non-innovative learners were involved in their primary musical activity several times a week, with a few participants only involved in their activity at a lesser rate (e.g., a few times per year, every month, a few times a month). Frequency of involvement in participants' secondary musical activity was more varied, with 81.8% of innovative learners involved in their secondary musical activity several times a week. 2 (18.2%) innovative learners were involved once a week. The non-innovative learners also varied in their frequency of involvement in their secondary activity, with 86.7% of the non-innovative learners involved several times a week, and the other 13.3% varying across a few times a year (1.3%), every month (1.3%), a few times a month (2.7%), and once a week (8.0%).

4.7.4. Length of time involved in primary and secondary musical activities by innovative learners and other youth

Participants' length of time involved in their primary musical activity varied from under a year to over 5 years, regardless of their classification as an innovative learner. Figure 4.13 presents the findings of the length of time innovative learners had been involved in their primary musical activity, versus those participants that didn't exhibit aspects in the three areas of the framework for innovative learners (one participant did not specify length of time). Further, over 63.6% of the innovative learners were involved in their primary musical activity for over 5 years, in comparison to only 40.7% of the non-innovative learners. Participants' length of time involved in their secondary musical activity was also diverse, as 63.6% of innovative learners and 38.4% of non-innovative learners were involved in secondary musical activity for more than 5 years.

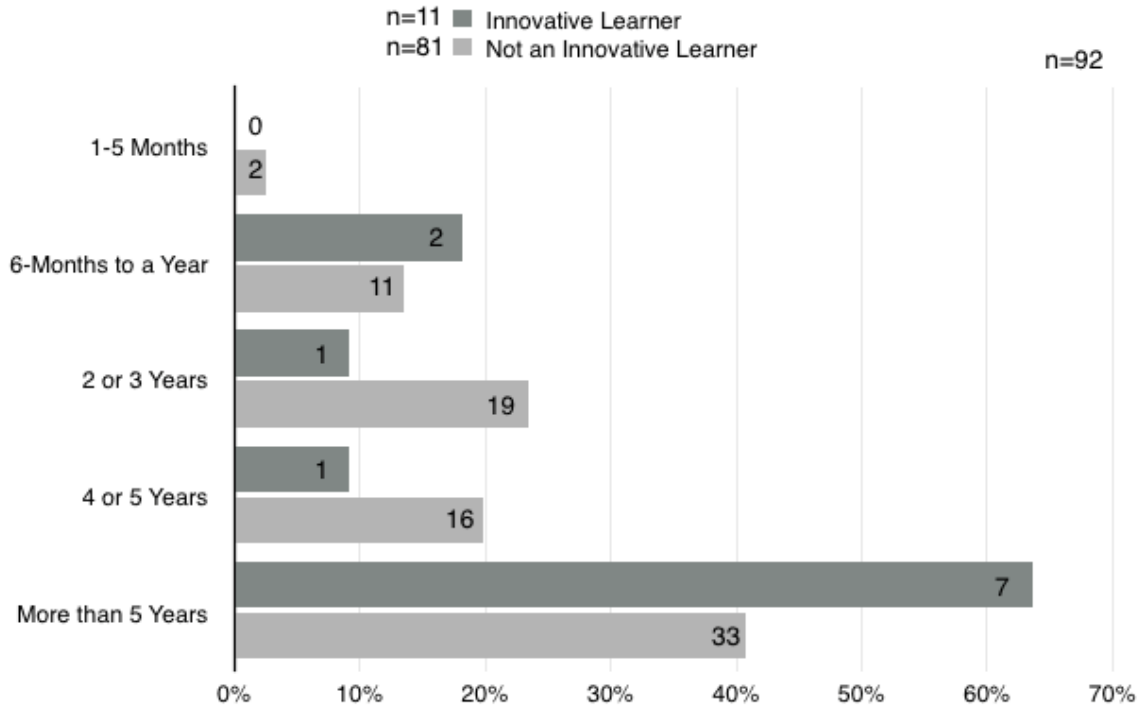

Figure 4.13. Length of time involved in primary musical activity according to innovative learners and other youth

4.7.5. Combination of activities – innovative learners

Figure 4.14 displays the frequencies of musical activities the participants listed they were involved in, and the differences between those that were classified as innovative learners and those that were not. An examination of the figure indicates that while there was no difference in the number of musical activities that innovative learners versus non-innovative learners were involved in, most innovative learners (82% of the 11 participants) were involved in six musical activities, where all innovative learners had a mean of 6.18 (SD=1.40) activities, whereas non-innovative learners were more widely spread across their answers with a mean of 5.57 (SD=1.76) activities. When listing their musical activities, many of the participants did not always mention certain activities at the outset of being asked to list all their activities, rather they would add to the list during the interview. This occurred in many interviews; participants would pause and ask whether they could add another musical activity to their list. Further, on a few occasions, after listing all their musical activities, some participants would then ask if it was alright to

include activities that were not specifically musical, such as watching movies, playing video games, etc.

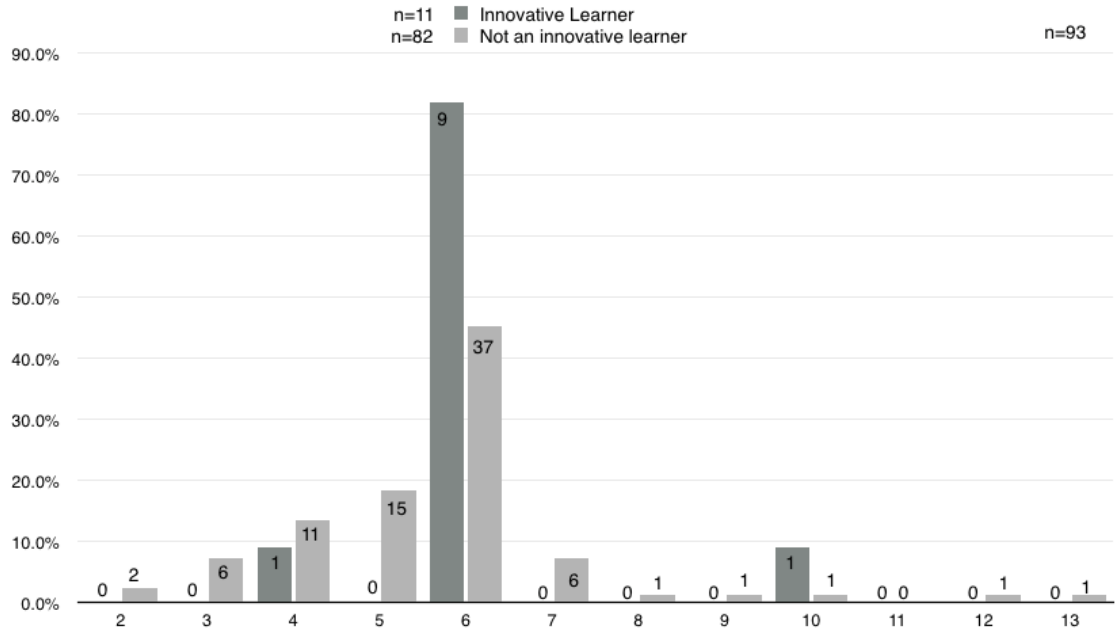

Figure 4.14. Number of musical activities reported by innovative learners and other youth

4.8. Combinations of areas

There were up to 8 different possible combinations of the areas that the participants could be coded into, which included participants that did not exhibit any areas at all (see Figure 4.15). Figure 4.16 shows the types of combinations of the areas that the participants were coded into, and provides a detailed breakdown of the 93 participants as a percentile.

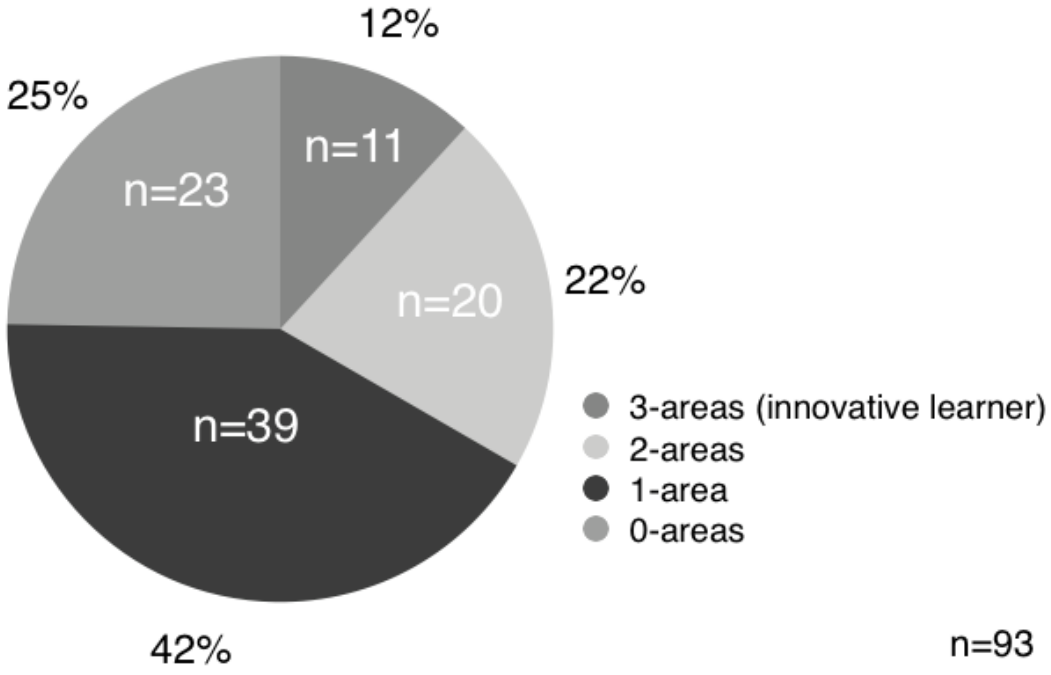

Figure 4.15. Number of participants exhibiting aspects of the three areas (or none of the three areas) of the framework for innovative learners

The highest combination was for one area with 22.6% of participants being coded into Self-directed learning for this particular combination. Participants with Connecting only (15.1%) were the next common; and Connecting and Self-directed learning combined (12.9%) accounting for the next common combination. The combination of all three areas (innovative learners) accounted for 11.8% of the participants, and Self-directed learning and Multimodal meaning making combination comprised only 7.5%, Multimodal-only accounted for 4.3%, and finally Connecting and Multimodality combination had only one participant (1.1%). In contrast, 24.7% of the participants did not exhibit any of the areas at all. As demonstrated in Figure 4.16, the one-area combination of Self-directed learning was one of the most exhibited areas, with Multimodal meaning making representing the smallest number of participants, regardless of combination of areas.

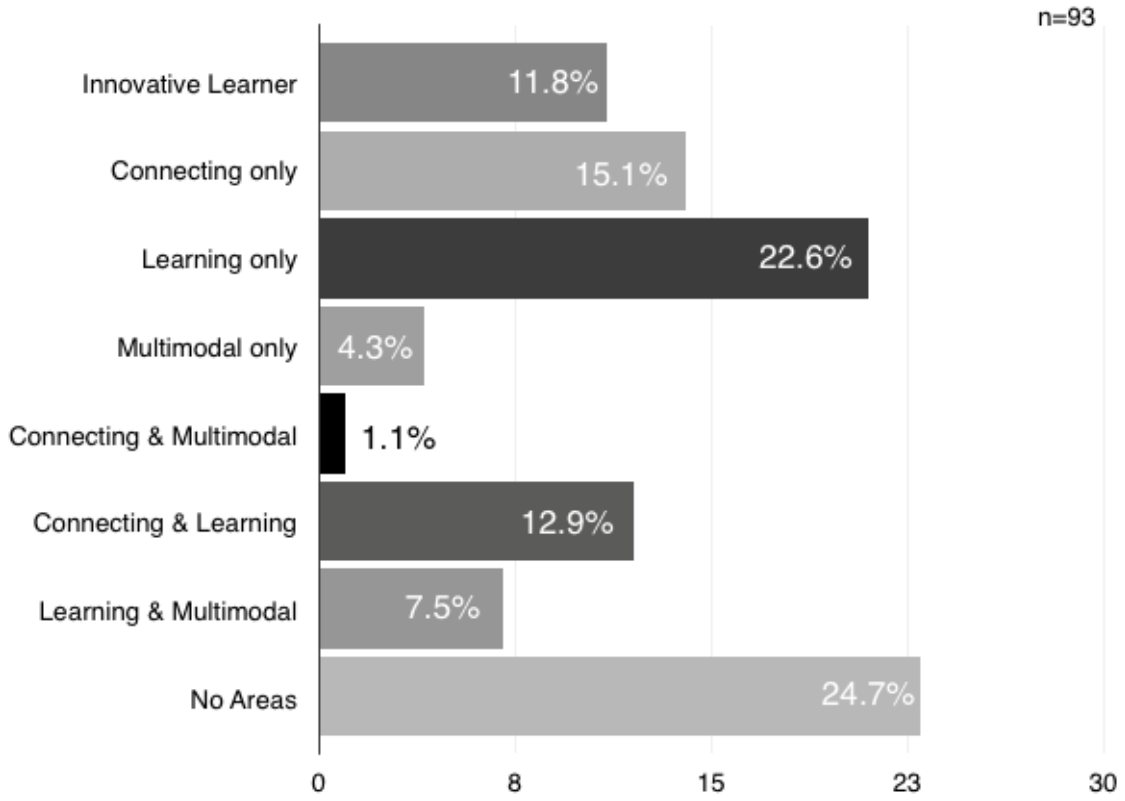

Figure 4.16. Number of participants exhibiting the possible combination of areas within the framework for innovative learners

4.9. Young people that exhibited aspects of all three areas: Identifying innovative learners

Based on the analysis of each of the 93 participants' interviews, 11 young people who exhibited aspects of all three interrelated areas of the framework for innovative learners were identified. Of the participants that exhibited all three areas, there were 8 males and 3 females. Table 4.18 later will provide a comprehensive breakdown of these eleven young people.

All the participants had at least one family member play an instrument. As seen in Table 4.7, none of these participants had a sister or grandmother who played an instrument or sang, whereas four of these participants had a brother who played an instrument, and one had a grandfather who played an instrument.

Table 4.7. Number of family members that played an instrument or sang for innovative learners

Family Member	Number of innovative learners that had a family member that played
Mother	3
Sister	0
Grandmother	0
Aunt	1
Father	4
Brother	7
Grandfather	1
Uncle	2

Of the 11 innovative learners, seven had a brother who played and four had a father who played. In looking at the gender of the family member, the participants listed 14 male family members that played an instrument or sang, whereas they listed only 4 female family members that played an instrument or sang.

Table 4.8 shows the basic demographics for all eleven innovative learners. All of these participants were in high school, and ranged between ages 14 through 18 years, with a mean age of 17 years old.

Table 4.8. Overview of the characteristics of innovative learners

Name*	Gender	School Type	Grade	Age	1st Instrument	2nd Instrument
Peter	Male	High School	11	17	Piano	Bass
Eric	Male	High School	12	18	Guitar	Drums
Jerry	Male	High School	12	18	Saxophone	Piano
Cooper	Male	High School	9	15	Guitar	Piano
Maya	Female	High School	12	17	Guitar	Electric Bass
Jessica	Female	High School	9	15	Guitar	None
Jackson	Male	High School	12	18	Guitar	None
Max	Male	High School	12	18	Electric Guitar	None
Cindy	Female	High School	10	15	Baritone Sax	Clarinet

Logan	Male	High School	12	18	Guitar	Piano
Carter	Male	High School	8	14	Drums	None

Note. The listing of 1st and 2nd instrument denotes the main musical instruments the participants initially noted they played when asked about all of their musical activities. These instruments are not necessarily related to the top two most meaning musical activities that were explored in the interviews.
*Names used are pseudonyms.

It is expected that as young people get older their experience and immersion with multimodal forms of expression and communication might increase due to less stringent monitoring or rules by parents, or less rules around signing up for social media sites like Facebook (which bars children under 13 years of age from using the platform) (Steeves, 2014). It is also possible that increased opportunities to socialize and interact outside of school and outside of the home are perhaps possible more frequently due to more freedom in travel (e.g., at age 16 in British Columbia, many young people get their license to drive).

4.10. Innovative learners' musical activities

Each of the eleven innovative learners listed all the musical activities they were involved in at the beginning of their interview, as well as the location of where they were involved in the particular musical activity. Also, within the analysis of their interviews, researchers identified musical activities that were noted within their interviews that also denoted a location of their involvement (e.g., talking about searching for lyrics on a computer at school, and while at home). Their musical activities ranged in how many they were involved in, and also in the types of activities they were doing.

Table 4.9 provides the number of musical activities that innovative learners were involved in, and where these activities took place. Concurrent with the larger sample of 93 participants, these eleven participants also averaged a combination of six musical activities.

Table 4.9. Number of musical activities and locations of involvement for innovative learners

Participants	Total number of musical activities	Number of musical activities while at school only	Number of musical activities outside of school	Number of musical activities both at school and outside of school
Peter	6	2	1	3
Eric	7	1	1	5
Jerry	6	0	3	3
Cooper	6	2	0	4
Maya	10	5	0	5
Jessica	6	3	1	2
Jackson	7	1	1	5
Max	6	1	1	4
Cindy	6	0	5	1
Logan	6	1	0	5

The majority of musical activities that these young people were involved in occurred as a part of their involvement during school and outside of school time, rather than specifically outside school or within school contexts.

4.11. Primary and secondary musical activities

Table 4.10 and 4.11 present the primary and secondary musical activities that innovative learners chose. They all played or were involved in their primary musical activity at least several times a week. Involvement in their secondary musical activity was more diverse in how often innovative learners played or were involved in these activities, with most being involved several times a week and with two participants only doing their secondary activity once a week. Of both primary and secondary musical activities, playing a musical was the most prevalent, with writing/recording/composing being the second most common, and singing and listening being the other two musical activity categories that these participants stated as their most meaningful two musical activities.

Table 4.10. Primary musical activity information for innovative learners

Participants	Primary Musical Activity (1st Choice)	How often do you play?	How long have you played?	Category
Peter	Performing/Practice	Several times a week	More than 5 years	Playing
Eric	Composing	Several times a week	More than 5 years	Write/Compose
Jerry	Composing	Several times a week	6 months - year	Write/Compose
Cooper	Piano	Several times a week	More than 5 years	Playing
Maya	Singing	Several times a week	More than 5 years	Singing
Jessica	Guitar	Several times a week	6 months - year	Playing
Jackson	Guitar	Several times a week	2 or 3 years	Playing
Max	Guitar	Several times a week	More than 5 years	Playing
Cindy	Clarinet	Several times a week	4 or 5 years	Playing
Logan	Guitar	Several times a week	More than 5 years	Playing
Carter	Indian Drums	Several times a week	More than 5 years	Playing

Table 4.11. Secondary musical activity information for innovative learners

Participants	Secondary Musical Activity (2nd Choice)	How often do you play?	How long have you played?	Category
Peter	Recording	Once a week	1-5 months	Write/Compose
Eric	Guitar	Several times a week	More than 5 years	Playing
Jerry	Piano	Several times a week	More than 5 years	Playing
Cooper	Composing	Once a week	1-5 months	Write/Compose
Maya	Guitar	Several times a week	More than 5 years	Playing
Jessica	Listening	Several times a week	More than 5 years	Listening
Jackson	Listening	Several times a week	More than 5 years	Listening
Max	Singing	Several times a week	6 months - year	Singing
Cindy	Listening	Several times a week	More than 5 years	Listening
Logan	Writing	Several times a week	4 or 5 years	Write/Compose
Carter	Listening	Several times a week	More than 5 years	Listening

The amount of time innovative learners spent doing or being involved in their primary musical activity did not differ much between the two groups (innovative learners versus non-innovative leaners). Since several of the non-innovative learners were not always noting their involvement as several times a week, rather as once a week or several times a month, it presents a possible insight into the vested involvement by

those that exhibited all three areas compared to their peers that did not exhibit all three. As innovative learners demonstrated a passion for their involvement in musical activities, the range of their length of time involved in their musical activities may be due to their interest and passion in expanding their musical knowledge, and thus interest in seeking new musical activities to engage in.

Table 4.12. Location of involvement in primary and secondary musical activities for innovative learners

Participants	Primary Musical Activity	Location of Primary Musical Activity	Secondary Musical Activity	Location of Secondary Musical Activity
Peter	Performing	Both	Recording	Both
Eric	Composing	Both	Guitar	Both
Jerry	Composing	Both	Piano	Outside School
Cooper	Piano	Both	Composing	Both
Maya	Singing	Both	Guitar	Both
Jessica	Guitar	Outside School	Listening	Both
Jackson	Guitar	Both	Listening	Both
Max	Guitar	Both	Singing	Both
Cindy	Clarinet	Both	Listening	Outside School
Logan	Guitar	Both	Composing	Both
Carter	Indian Drums	Both	Listening	Both

Of the participants' primary and secondary musical activities, most of their involvement in these activities occurred in both at school and outside of school contexts. Further, there were no primary or secondary musical activities chosen by innovative learners that occurred solely at school, where there were some musical activities that occurred only outside of school (see Table 4.12). As these young people are passionate about their musical activities, and these activities are a central part of how they connect with others and their community, how they learn outside of formal educational contexts, how they express and shape their musical authenticity, and how they make meaning multimodally within their musical lives, it would be expected that their involvement is intertwined throughout all of their locations.

4.12. Findings: Interview study summary

All of the participants played an instrument or sang within this study, though there were varying degrees of their involvement in their musical activities. The most common primary choice activity for young people within this study was playing an instrument, with playing the guitar being the most common choice.

The most common area within the framework for innovative learners among young people in this study was Self-directed learning. Multimodal meaning making accounted for 24.7% of the participants. The participants that were involved in multimodal meaning making were often describing their involvement in more technologically complex musical activities, such as composing or using other multimodal resources, or even within the complex ways they described their musical lives as will be elaborated on further in Chapter 5.

The participants that were identified as innovative learners exhibited aspects of all three interrelated areas, and their descriptions of their musical lives were interconnected and complex. The innovative learners all were involved in their primary musical activity several times a week, and their secondary choice activity at least once a week or several times a week. Their length of time being involved in their musical activities varied from more than 5 years to only 1-5 months. Their musical activities took place at both school and outside of school contexts. To build upon these findings, the following chapter will provide an in-depth description and interpretation of these young people's musical lives through case studies that illustrate the three interrelated areas of connecting, self-directed learning, and multimodal meaning making, within the framework for innovative learners in action.

Chapter 5.

Findings: Case studies of innovative learners

5.1. Primary research goals

This study aimed to provide an exploratory investigation into the extent to which young music learners exhibited multiple constructs of 21st century learning and innovation based on a proposed framework for identifying key areas and constructs associated with innovative musical learners. As there is a paucity of literature on these combined areas within the contexts of musical engagement, this study aims to fill the gap by exploring two primary questions: 1) What are young learners who are engaged in musical activities really doing within the contexts of their daily lives, and how might today's digital technology mediate these activities? 2) How are young learners, identified as innovative learners, engaging in these musical activities with digital technology actually using a combination of (1) connecting, (2) self-regulation, and (3) multimodal exploration to frame their meaning making?

Further, this study aims to help bridge the gap within the literature on these new ways of learning within youth lives in relationship to musical learning, in which they have been propelled by a multimodal and digital age. To assist in comprehensively addressing this goal as discussed, describing and interpreting case study vignettes for each of the 11 participants identified as innovative learners, looking at these vignettes from the framework, and discerning emergent themes, can help provide initial insights into the innovative learners' musical lives.

The next section will focus on presenting the qualitative research findings in an organized and meaningful way that will facilitate the interpretation and discussion emergent themes identified through the innovative learners' descriptions of their musical

lives within the three areas of the framework for innovative learners. Implications based on the findings and future directions for research will be discussed in Chapter 6.

5.2. Participants: 11 innovative learners

As discussed earlier, there are multiple constructs thought to be associated with innovative learners growing up in today's digitally-infused musical age, which are situated within the interrelated areas of 21st century learning and innovation. While Chapter 2 took each of these areas and associated constructs and examined them separately to enable clarity and distinctiveness in the literature surrounding the particular constructs, in reality these areas are deeply interconnected and difficult to parse separately. To this end, vignettes were derived from the interviews with each innovative learner with the aim of presenting the learner as a whole and through the lens of each interrelated area. The aim is to better understand the diverse ways in which innovative learners describe the impact of musical activities and digital technologies on their everyday lives.

5.3. Peter

Participant Name: Peter

Gender: Male

Age: 17 years old

Grade: 11

School Type: Secondary School

Top two musical activities: When asked about his top two most meaningful musical activities, he stated that **performing in front of people** was the most important and meaningful to him. Peter's secondary choice of musical activity was **recording music and posting online.** He was involved with both piano and playing the bass several times a week, and had been doing both activities for more than five years.

Peter is involved in a number of musical activities in his daily life, a majority of these activities occur both outside of school and within school contexts. Within Peter's interview, he described all of his musical activities, which included:

- Performing/Practice (e.g., piano)
- Recording
- Jamming
- Concert Band
- Listening (on iPod, and music videos on YouTube)
- Jazz Band

Peter, much like the rest of the innovative learners, describes his involvement with music as an interconnected part of his life.

While Peter doesn't "do" recording everyday, he does it about every month or so. He describes that it isn't just the activity of recording itself, that "well, the practice (--) first because it takes a while, and then... the recording usually takes a day," and his practicing is something that he does daily. Peter's descriptions of his musical life are deeply connected to his connecting with his brother, interest in learning to become a better musician, and recording for posting online. Finally, his interactions with recording and posting music online are a part of his making sense of his place in the world.

5.3.1. Peter: Interrelated areas of 21st century learning and innovation

Connecting

When asked about what got him started recording, he noted that he valued when people made comments online about his playing within his recordings. He then went on to describe whether it had something to do with people around him (social influences), and he responded that: "Oh, yeah, my brother has a big influence, he started like... recording and posting videos on YouTube and got a lot of views, and, umm, we both decided to record more stuff, sometimes like play duets, and like... yeah."

In continuing the interview, to find out what got Peter started in his musical

activities, and whether it had anything to do with his systemic environment, he replied that it had to do with being “at school, because I play some music and...and get other people around here, right? So, I guess I get feedback on music.” Peter’s engagement in participatory cultures through posting his creations on YouTube is not limited to getting feedback from online forums; rather, Peter found a connectedness to his peers within his classroom contexts as well. Peter’s connectivity with his brother was a key factor in how he described his musical life. He goes on to explain that his brother “...sort of motivates me, asks me to become more like him.”

Self-directed learning

Peter, like many innovative learners, finds informal ways of obtaining musical knowledge and skills. His involvement in posting musical recordings of his performances is an example of how he seeks feedback on his creations, and uses them as ways of learning. He uses the activity of recording, as a ways to get better at the activity, thus practicing forms of self-regulation to acquire and increase his skills.

When asked about the impact of his playing on other people, he replied that “My... playing... who knows? Maybe it influences other people to want to play the piano, or to play that (--), maybe? (laughs).” This suggests his own understanding that he is able to possibly inspire others to play, learn, or grow in their musical development.

Further, Peter describes his involvement in playing the piano increases his abilities in other music-related areas, such as “Umm, I guess, umm, it makes me smarter? (laughs) Because like... Like I learned how to read notes, I kind of say like... playing, and improvising, and getting better at improvising...”

His interest in acquiring musical knowledge and skills were not limited to just his own endeavours, rather when asked about what future musical activity he would like to be involved in, he said: “Umm... I'd like to be a piano teacher... 'cause I'm pretty good. […] and because... I enjoy helping other people, and...Umm... I like teaching, I like teaching other people about music.”

To help him become a music teacher, he responded that he would need to be “good at... umm, being good at explaining to them, right? 'Cause teachers need to be

good at explaining to the students, and being a good role model, I guess (laughs)." Peter exhibits not only aspects of self-regulation, and informal music learning practices, he goes beyond to start to bridge the gap between informal and formal learning through his interest in sharing his knowledge as a music teacher in formal education later.

Multimodal meaning making

For Peter, much of his involvement in his interconnected musical activities surrounds performing for others, both in person and within online environments. Through his posting of videos on YouTube, he appears to be making sense of his identity and how he navigates his sense of self within his life. His ability to be multimodally literate is not something that he acknowledges as being unique; rather it is a part of his everyday musical life. He is what Prensky (2001) would identify as a digital native, and further, within the contexts of music, he uses multimodal digital resources to expand his musical activities into larger forums for feedback and interaction.

Other emergent themes

Peter describes being involved in practicing and performing piano as a way of being "more creative," and "I think it's more with myself, my feelings." The interviewer asked Peter to describe those feelings, to which he said "Umm, just like sometimes I feel lonely and I just play the piano, and it makes me... is enjoy, it's joy, it's a pretty good joy playing piano."

He values his musical participation as a way of shaping his identity, and as a part of his ability to share his interests with other people. For Peter, the interconnected nature of music and emotion are not only personal, they are something he can evoke in other people around him, as he says "Umm, yeah, when I play at the school then people hear me and maybe... I don't know, (--) maybe like, umm, how do I explain this? Like (--) bring emotions to the (--) when I play, right? And further, he elaborates that "[people] enjoy listening to it too, so it makes them happy, I guess..."

Peter was asked "what do you think are the most important reasons why it's important for young people to be engaged in musical activities?" To which he responded,

> because it's like, it's... a very good hobby to... and then if you play music you understand then... it's very joyful experience." He went on to explain that "I think there's a study too with students in a band, or like take lessons, or piano... they actually did better in class than other random... other students... I think there's a survey done to find out that music students were actually smarter (laughs), got better grades, maybe? Makes you...yeah, makes you more intelligent.

This statement, and his obvious interest in finding research to support involvement in musical participation as an opportunity to demonstrate or acquire skills, begins to demonstrate his valuing of his musical activities for self-directed learning. Further, it shows a sense of resourcefulness and agency in his capacity to share his knowledge of the benefits of musical involvement.

5.4. Eric

Participant Name: Eric

Gender: Male

Age: 18 years old

Grade: 12

School Type: Secondary School

Top two musical activities: When asked about his top two most meaningful musical activities, Eric emphatically stated that **composing** was the most important and meaningful to him. His secondary choice of musical activity was **guitar.** He was involved with both composing and playing the guitar several times a week, and had been doing both activities for more than five years.

Eric is involved in a number of musical activities in his daily life, a majority of these activities occur both outside of school and within school contexts. Within Eric's interview, he described all of his musical activities, which included:

- Composing
- Guitar
- Musical Theatre

- Drums
- Listening
- Guitar Hero: Music Video Game
- Live Music/Concerts

Eric describes his involvement with music as an interconnected part of his life. When asked about the impacts of being involved in composing on his life he said, “I dunno. It kind of enriches my life. And (pause) 60% of my life is based on music. […] Yah. That's a random number, but it’s really important to me.” His descriptions of music within his life express a strong focus on music as a part of his identity and being, and the influence of self-directed learning on his motivation to be involved in music - “It’s kind of just always in the foreground of my mind.” At a cursory review, Eric’s connecting to his musical life, his personal initiative to learn and grow in his musical knowledge, and finally his interconnectedness into a multimodal way of engaging in his musical life, all attend to the interrelated areas and constructs thought to be associated with innovative learners in some way.

Eric started “doing music” when he was in elementary school. He got his first guitar in middle school and started to write music on his own after a couple years of getting his guitar. He notes that he “kind of got used to it.” He explains that composing “… just kind of happens naturally.” While Eric began composing and playing his guitar in middle school, he credits his mother with getting his guitar for him, though he is quick to note that her involvement does not attribute any other aspects of his musical life to her purchasing the guitar for him, “Yah my mom who got the guitar. […] Yah. But I have always been into music. She just (pause) was the one who purchased it and (--) I dunno.” And he elaborates, “I’ve always been inclined to do music. So when she brought home the instrument, that was kind of like a stepping-stone, I could really apply it.”

Further, Eric notes that his middle school rock band program, and more specifically his middle school music teacher were really influential in getting started in his musical activities. When asked what keeps him involved in composing, Eric stated “just a love of doing it!”

5.4.1. Eric: Interrelated areas of 21st century learning and innovation

Connecting

Considering the first interrelated area that is associated with innovative learners is that of connecting, Eric noted “I’m around musicians all day. So... I guess that helps me grow.” He explains, “I think my friends have been made through music.”

When discussing if there are impacts of playing the guitar on who is around him, Eric provides an intriguing description: “Yeah. Because if I’m doing music, other musicians are going to be around me” and it is “just like sports, if you’re into sports, you join a sports team, like that.” His sense of involvement in music provides a space for him to create and share his musical creations. This sense of connectivity with his classmates was evident, as when another participant, Maya, came in to do her interview, she asked to bring Eric along. Eric seemed more than happy to support his friend and classmate, and seemed to appear to be a supportive part of Maya’s musical life, providing smiles and nods when she seemed unsure or in need of reassurance during her interview.

Self-directed learning

Eric is a prime example of a learner that is using self-regulation in relation to his musical involvement. Eric has developed his own way of learning music, even though he is a part of a school rock band program. He takes the initiative to actively seek out knowledge and resources and is involved with playing the guitar both at school and outside of school, although he really emphasizes the role of being able to play guitar at home. Throughout his interview, his focus is on doing both his main musical activities outside of school.

The concept of improvisation was closely linked to his composing abilities, in which he noted that composing could happen anywhere: “well, I usually improvise and something will come” and “so wherever I’m improvising, something can happen.” This fluid process of improvisation and composition conveys a sense of flexibility and interconnectedness in how Eric is involved in his musical life, in which every aspect of his daily activities blend into his musical endeavours.

Multimodal meaning making

Engaging in multimodal meaning making is a key component of how innovative learners are engaging in music within their everyday lives. With Eric, this is no different, as his use of multimodal resources go beyond passive interactions and lead to ways for him to make sense of other media and use it for his own musical purposes. Eric stated: "If I'm watching a commercial, I'll hear the music and dissect it."

When composing, Eric would begin by writing his compositions, and then transcribing them into a computer program. While he would have liked to have more advanced equipment at home, he noted that he did have access to these technologies while at school. In regards to Eric's composing activities is that he noted, "I'm comfortable at home [to compose]. So I dunno, it's easier for me to write there." Eric's form of composing is not simply done in one mode, such as traditional forms of textual notation written solely on paper. Eric takes advantage of all the multimodal resources he has available to him to engage in his main musical activity. The way he describes his involvement in this multimodal activity though is not specifically through explanations of discrete activities, rather it is a part of the activity as a whole.

At the end of the interview, Eric is asked what musical activity he would want to do in the future, and why. He goes on to say that he would want to compose as a career, as "it's just something I really enjoy doing. And I would need the money to survive." […] Well, I hate mixing those two, but, whatever [laughs]." The impact of having access to the Internet becomes apparent here, as when asked what would stand in his way from making composing his career, Eric says, "If I didn't have access to information… SO I guess, the Internet is a big help. Umm. Being in a [school] program like this helps." It is not surprising that the key thing that Eric attributes to standing in his way would be access to information, as through the multimodal resources of the Internet, via YouTube tutorials or online forums, there is an abundance of information now available to learners like Eric. This makes seemingly limitless opportunities possible for accessing knowledge outside of traditional forms of education.

Other emergent themes

Eric's descriptions of his involvement in his musical activities are deeply entrenched in his sense of identity and the importance and value of music in his life. He describes playing the guitar as being "a creative outlet" and is quick to state "I guess I see myself as a creative person." When discussing what would happen if he wasn't able to compose, Eric responded: "Oh wow. I would Uhhh. It would be terrible. [Laugh] Uhhh yah that would greatly impact my life. I don't know what I would do with my time." And, reinforcing the role of music within his life, he stated, "Umm, its kind of just always in the foreground of my mind."

Eric goes on to describe how his musical involvement is directly tied to expression and self-identity, "Umm. It's a way to express myself," as well as connecting with others, "It's fun… to get up there and play in front of people." Eric's descriptions of his musical life indicate that music appears to provide him with a forum for social interactions and friendships, opportunities to perform with others, and as a potential source of confidence.

Eric's musical life is situated within all the interrelated areas of being an innovative learner, though the personal value he places on his musical involvement for expression, and well-being is prevalent. The concept of well-being is brought up when asked about the positive benefits or negative consequences of being involved, in that Eric says "I guess it is good for your health to be able to express yourself…" When asked if his starting to play guitar has something to do with who he is as a person, Eric says, "Umm. I guess. Um I have a quiet side to myself, and I have this other side to me, where I like to really get out there and express myself. So. (Pause) Maybe that's my outlet for that." He also describes his continued involvement in playing the guitar as an "outlet to get it out there."

Finally, it is evident that Eric values his musical involvement as a way of providing him with the ability to draw from emotion and expression to contribute to his musical creations, or vice versa. The emotional content he access through other mediums, such as film or television, appear to inspire him and foster his resourcefulness in his musical endeavours. When Eric is asked "Why do you compose?" he explains,

"Umm. I try to stay in a style. So umm metal. My main genre. But I like to try and write. I do rap. Umm. Anything that comes to me". When Eric is describing that he tries to "stay in a style" when composing, be it his main genre of metal, or writing rap, he finds inspiration in multimodal ways, as he notes: "Yeah. Sometimes if I watch something emotional, like a film. Or something. It will give me inspiration to write." Eric seeks inspiration from beyond traditional musical forums, using film and the emotional nature of the film format to help him become inspired. When discussing his guitar and composing, his descriptions of how often he is involved in these two main musical activities is somewhat malleable. Eric noted that with composing he gets writer's block, which can limit how often he does it, and with his guitar, "sometimes I will go like [laughs] on binges for several hours. And sometimes I won't play at all."

5.5. Jerry

Participant Name: Jerry

Gender: Male

Age: 18

Grade: 12

School Type: Secondary School

Top two musical activities: When asked about his top two most meaningful musical activities, Jerry focused on **composing** as the most important and meaningful to him. Jerry's secondary choice of musical activity was **piano.** He was involved with both composing and playing the piano several times a week, and while he has been playing the piano for more than five years, he had only been composing for between six months to a year.

Jerry is involved in a number of musical activities in his daily life, a majority of these activities occur both outside of school and within school contexts. Within Jerry's interview, he described all of his musical activities, which included:

- Composing
- Piano

- Saxophone
- Singing
- Ska Band
- Listening (Internet radio, YouTube, iPod)

When asked what future musical activity he would like to do most, Jerry said, “I’d like to keep writing music,” and when asked why, he replied, “Well, because it entails playing as part of it and umm it allows me to really express myself creatively and try to make something new. Try and have a sense of accomplishment in something that I love.”

When asked what would stand in the way of doing this, he noted that it would be,

> the stuff in everyday life, just work, education other things. I’m probably going into engineering not music so that’ll be a lot of time. Umm possibly myself if I get too discouraged and I don’t umm, if I’m not disciplined. That can be an obstacle as well.

While Jerry is an accomplished musician, for whom music is an interconnected part of his life, it is illuminating to see that he thinks he might go into engineering not music.

When developing the vignette to provide insight into Jerry’s musical life, it was difficult to separate his discussions of the interrelated areas. Further, in attempting to describe what Jerry was saying, it seemed the most appropriate to use his eloquent and at times, lengthy quotations to demonstrate his entrenchment in his innovative musical life. Otherwise, the deeply engrained contextual nature of his statements would not have the same impact for understanding his story.

5.5.1. Jerry: Interrelated areas of 21st century learning and innovation

Connecting

Jerry is engaging in connectedness in a way that goes beyond his connecting and active engagement with others. When asked, "How do you think it impacts people around you?" Jerry replied:

> Well I can't say 100% for sure but I hope that people enjoy hear me play anyway [laughs]. Well I've been told by my friends and family that they think the music is beautiful, like hearing it. So it brings enjoyment to other people. Uhm.. I think in some ways you can inspire other people if you continue, for me if I continue with my music I do it as much as I can and someone perhaps much younger than me, more inexperienced, maybe says want to get to that point, like I suppose in some way I can be a role model.

Within his response he is exhibiting aspects of what connectedness is truly about, having "the capacity to benefit from connectivity for personal, social, work or economic purposes" (OECD, 2012, p. 15), as he is making his musical involvement not just about him, but about being a role model for younger people. He goes onto describe the emotional and pleasurable values of playing music.

Due to the relative novelty of YouTube when the study was conducted, many of the participants had only been involved with YouTube for the purposes of listening to music or seeking musical knowledge. Jerry, like a few of the other innovative learners, used YouTube to enhance his musical composing, and as a way of connecting with a friend across the country. He engaged in creating and sharing his creations in complex, technological ways that stem from his immersive involvement in musical life:

> Well, aside from playing I also try, dabble in composing a little bit uhm both in playing in a SKA rockband for the past couple of years, and I've been helping with that. I trying to compose my own classical pieces. I listen to music not so much on the IPOD but listen to internet radio sometimes, CBC Radio 3, I'm pretty fond of..uhmm I listen to the odd Youtube or watch the odd Youtube video. I've seen some good stuff on there and I have a couple of friends I that correspond with who do their own either, mixing on the computer. I have one friend out in Nova Scotia that sings, he records singing on his computer and mixes back tracks for it. Listen to his stuff sometimes so…it's cool listen to..uhmm [pause]

Self-directed learning

One apparent feature of innovative learners is their continual striving towards building their musical knowledge and gaining musical skills. Jerry demonstrates a great dedication to practicing and learning more on the piano. When asked how often he plays the piano, he replied:

> Umm, currently not as often as I'd like cause in Grade 12 there's a lot of stuff, umm sort of when ever I get a chance to sit down so maybe a couple of hours a week right now but when I have time to, I can spend anywhere from an hour to three hours a day on the piano.

It is difficult to separate Jerry's descriptions into discrete areas of the framework for innovator learners, as he exhibits aspects of many of the constructs within a single quote. For example, in response to the question "what keeps you involved?" he says:

> Well on a personal level I just find it, it really…., I don't know, it's really nice, it relieves my stress. It.. ahh… it's a lot of expression in it. I love doing it. Beyond that, like I said, mentioned there's a lot of support around me, being in the band program here, you meet a great group of people. Other people that have same interests as you that support, support your uhmm your endeavours. I have a friend that is a bit better playing than piano than I am and eh he's, I told him I was writing a piece, he's like, "Oh soon as your done I want to play it" so I mean things like that makes you feel like your doing something other people are interested in. Or even like the school here, the musical that I've been involved in the past couple of years, our drama productions, uhmm which I haven't played a large part in but just err being a you know a background person, an extra chorus, it's so you being part of that vibe, that excitement, that energy that comes from that. And it's just, a really good experience especially because the teachers like Mr [teachers name] in terms of their music…… and they make sure that if you have passion for music that you can go explore that passion and have it live it to its full potential.

His passion for his musical involvement is not simply found within the contexts of formal music learning, rather it is interconnected within all of his musical activities whether formal or informal, and it is his passion for music that seems to be the core feature of his musical life.

Multimodal meaning making

While Jerry's activities are not specifically always technological in nature, they are deeply infused within the digital age. His musical listening is through mobile and digital ways of accessing music, be it YouTube, Internet radio or on his iPod.. His involvement in connecting with others through his music, through sharing via online formats, is enabled by the "profound changes in social, economic, and technological world which will in the end shape the futures of literacy" (Kress, 2010, p. 176). As such, we get a sense of multimodality in Jerry's musical life as he conceptualizes how his brain works, and how music fits in, and in a way, provides an eloquent description of non-technological multimodality, yet while still embedded within a digital age. Jerry describes:

> How [*my musical involvement impacts my life*] is a little hard to describe but I guess the best way I can look at it is specifically with composing, is that you get this combination of, ok what sounds good, sound kinda cool. That's the creative side and you're engaging your brain that way. Ahh but then there's also this beauty in how everything fits together and how you know you are putting these notes together to create a chord and maybe using what knowledge you have from theory and technical studies as well as your ear and everything, you kinda put those together. And sort of seeing how things progress, you use, when you're playing it and even more so when composing it, you are using both sides of your brain. You have to be both creative and technical at the same time. You have to otherwise you're missing part of it. And I think to be forced to do that puts me in that spot, it makes me exercise my brain in that way. It's like if you're going to run a marathon, you have to, errrrh have to exercise your legs, your lungs, your heart. If you want to be able to think critically and creatively at the same time you have to practice doing that, and you do that when you play music.

Many of the participants, but more specifically those that were identified as innovative learners, demonstrated a deep integration with multimodal forms of literacy, in which the words they used provided a rich context into how multimodal ways of listening to music or engaging with music have transformed within this digital age. Many participants, including Jerry, interchangeably used the words "listen" and "watch" when talking about listening to music online, or on YouTube, on other mobile devices. Considering that none of the innovative learners had an iPhone, which in current day would be considered highly multimodal and interactive, the use of terms for modes of

'listening' to music to 'watching' music were already present in these young people's vocabularies.

Other emergent themes

Jerry initially started playing the piano, due to his parents' involvement:

> It started off with my parents giving me piano lessons. They heard it was really good for kids to do piano, it's a good instrument to start off on music and apparently helped a lot of music students to do better in school. I don't know if its 100% true or not but it's certainly something that's out there uhm…

When asked if it helps him, in regards to his parent's rationale for him starting music, he stated for piano that:

> Yes, I do find it helps. Uhmm, If not in any other way than stress relief. I can be a bit of a stress case and playing piano in particular, but music in general, really helps me let go of that and get back in focus… [pause].. on occasions it gives me a medium to express myself in my academics as well as projects through music.

And then he responded without a prompt, that for:

> Composing, I'm not even sure, I did a couple odd things, I remember a long time ago I started piano we did a few things where we'd write something, little tiny one line things and ahh but think I started trying to do it a lot again… uhmm, last year it was for one of the shows, for one of my projects at school, it was an English project and we had to do something to express our understanding of the play Macbeth, and it was an open project, anything you want to do as along as it is something that demonstrates your understanding. So, I took one of the Acts in the play and I put it into music, not songs, lyrics but just tunes. I gave it different characters, different themes, I changed the themes slightly depending on what the mood the character was in or what was happening and then I recorded it on my keyboard at home, played it for the class and explained as it was going what everything meant. And I really, really enjoyed doing that and I guess it really made me want to try doing it more.

The underpinnings of his valuing of music to construct his sense of self and identity are tied to music being able to help him deal with stress and emotions. He was

then asked about what got him started in piano and composing, whether it had something to do with him as person, and he elaborated again in a very articulate way:

> I think in some ways, I think I have a very, very active imagination and I think that music is a very good place for that to be expressed. But it does come from outside a little bit too, it's not entirely just me. If my parents hadn't put me into it, I wouldn't have been exposed to it for one thing anyway.

Within this quotation, there is a direct relation to the area of *connecting*, and his active connectedness within his musical life, as well as attributing his learning to enculturation within his particular context. Further, his learning is personally relevant; while his parents helped him start, it was through his own confidence and social support that he continued. Jerry noted:

> It did a little bit to begin with my parents got me involved. Onwards from there to keep me going and to make me confident and try new things like composing, I've had a lot of people around me that have been supportive.

When asked "How does it impact your life," it Jerry goes into a very deep introspection on the coping mechanisms that his musical participation provides him. He explains that he values and is able to use his musical involvement to be resourceful and take the initiative to apply what he learns in music to other subjects, such as physics. Music has helped his "brain develop" in a certain way, and helped him "get that kind of a mindset."

When describing whether his musical activities have an impact on the place/environment that he was in, he described a deep personal valuing and appreciation for his musical participation. This also draws quite a bit on his connectedness within his musical activities:

> You know I think in some ways it does. It's a little, it's not a direct obvious impact but umm well at home it can be something as simple as, if I'm playing the piano maybe everyone is, including myself, are focusing on the music and not on the stresses of everyday life and you know getting on each others throats because of little things. We're just relaxing for a few minutes and something as simple as that can help make things more smooth in the family. I think in the atmosphere at the school, I think as an individual my impact is

somewhat small but *collectively…..it makes a difference because in playing piano, it means I'm one more person that is supporting music. That is showing that it can be done, encouraging others into doing the same and in same ways others do that for me and it creates an atmosphere where music can be appreciated* [emphasis added]. And composing, its, that's something you don't see quite as often, umm a lot of people just play and listen to music and not as many people try writing it, and I think that whenever, you know if I try doing that, if another person tries doing that, it begins opening up another dimension of the, the art. And it can encourage other people to do the same or even just look at things in a different way. More than anything, it just contributes to the atmosphere and the ehh support, the mutual support.

5.6. Cooper

Participant Name: Cooper

Gender: Male

Age: 15 years old

Grade: 9

School Type: Secondary School

Top two musical activities: When asked about his top two most meaningful musical activities, Cooper emphatically stated that **piano** was the most important and meaningful to him. Cooper's secondary choice of musical activity was **composing.** He was involved with playing the piano several times a week, and composing only about once a week. He had been playing the piano for more than five years, and composing for only 1-5 months.

Cooper is involved in a number of interconnected musical activities in his daily life, a majority of these activities occur both outside of school and within school contexts, but none of his activities were solely done outside of school, it was always a combination of locations, or in relation to other activities. Within Cooper's interview, he described all of his musical activities, which included:

- Piano
- Composing

- Listening
- Singing
- Computer
- Guitar (band)

Cooper at first appears to be much like many of the other participants in his interests in musical activities, including playing piano, composing, using the computer, and so on. But he begins to veer into a unique direction at the beginning of his interview that seems be important for revealing how innovative learners like Cooper conceptualize their musical lives. When describing all of his musical activities, he says he is involved in "Experimenting with it all." Rather than simply saying, yes he does these activities, he says *experiment*, suggesting immediately the possibility of his being an innovative learner.

Similar to Jerry, Cooper's descriptions of his musical life, and the areas of learning and innovation, were interrelated in ways that make it difficult to separate into discrete areas. Among the eleven innovative learners, Cooper is one of the younger participants, yet he is one of the most indicative of what it means to be an innovative learner — his musical engagement is deeply entrenched within his technologically infused life.

5.6.1. Cooper: Interrelated areas of 21st century learning and innovation

When asked about his composing activities, Cooper explained that it was an activity that he does both at school and at home, but then went on to elaborate on what his composing was about,

> Ya! I did a piece awhile ago that I had grabbed my sister's iPod and mine, I don't have any recording programs or anything so I recorded different tracks through her, both of our iPods and then I lined them up together and did vocals, I don't have a drum set so I had to grab my um Rock Band sense, like a video game, and um, I had to play this free-style drum thing in there and make a drum track through that, and played through some strings and piano, and put a little solo in it too.

Cooper's description of composing is unlike traditional forms of composing, using a pencil and notation paper, or through simply a music composition program. Cooper was resourceful in the notion that he did not have "have any recording programs or anything," yet took the initiative to expand his learning and musical expression through using other multimodal resources, specifically other technologies to assist with his interest. He mentioned that "It took about a few weeks, but...yeah…" Statements such as this were what initially prompted the discussion around what the constructs of what an innovative learner might look like. This sort of learning and innovation is unlike any previous generation of musical learner, and only possible because of the ease of use, the affordability, and the access Cooper had to digital technologies in the 21st century.

Connecting

As Cooper's interview was so interrelated within all three areas, it was difficult to pull specific aspects directly from his quotes to convey how he connecting. As will be seen, Cooper was not only engaging in connectedness with others in relation to music, connecting was also an integral feature of how he was interacting with others in his musical life.

Cooper tells how his mother took his composition off of his computer before he was even done with it, and "Like every time she's vacuuming she has her earphones in and she turns off the vacuum I can hear it. She just blasts it non-stop," and that "It used to be like jazz or something now it's my song every time." Within the interview, Cooper was asked about his friends and his playing piano, and he described that playing piano makes him in a way, someone his classmates are interested in, and in demand for his piano abilities:

> Well as soon as I said this in this class that I play the piano, I kinda had like ten heads just light up… [they] Whisper about me. And I ended up being in quite a few bands to play.

When describing his friendships in relation to his musical involvement, Cooper states:

> Like I noticed that some Grade 9s, the more, the ones like with more of a diverse talent or something kinda get more noticed and are more

> easy to get along with. Like I can guarantee that if I only played guitar I wouldn't be, I'd be probably playing like one song this year, or something like that, but, I don't know. It guess it makes it a lot easier to get along with people.

Cooper's sense of connectedness also appears to be internalized, as was evident in how he visualizes himself when playing:

> I'm very dramatic when I play. [...]I'm kind of almost like, I kinda get into another world and I've noticed that I kinda, I don't know if it's fully me or if it's just my hands that do it, 'cause the hands kinda go all over the place. [...] I really do get into it though and enjoy a lot.

Further, he appears to connect to his musical activities in ways that he describes as central to his systemic environment of being within a rock school program, and having the ability to perform and share his creations:

> I don't think I could survive anywhere else, I'd have to keep it locked away and not get to... I like broadcasting it. Like letting people know. Like I'm a big showman.

Self-directed learning

While Cooper is quite independent in his interests in learning and experimenting with his musical creations, he still describes his school rock band music program as a pertinent part of his life. Cooper noted that "the first semester I didn't have it [rock school] and I was suffering the whole way through, just waiting for it to end."

His initial impetus to start playing the piano, was thorough informal means:

> Um. I forget, but one day my mom had this old keyboard and I just sat down. She showed me how to play one thing and I just kinda picked it up like that and ...ya... wanted to keep playing.

Cooper's mother is described often in his description of how he started and continues playing piano and composing. Although his own persistent passion for playing and composing are also evident as well as his use of self-regulation to practice daily and become a better pianist. Cooper combines both formal music learning with informal

music learning practices. He notes his middle rock school program was a main part of how he got interested in playing:

> Oh, well I had Mr. [teacher], my music teacher from last year, because he runs a rock school program over at [middle school]...

> [School name] Middle School, and he [teacher] kinda, gave me the confidence to join in this year, cause I was, in my Grade 7 year I was nervous to join anything. I didn't think I was going to be good enough. And I tried out, and I don't know, it gave me a lot of confidence and boosted it. And it really didn't kick in that I enjoyed playing as much until last year because I... probably because of that. So...

Cooper's integrated valuing of his musical participation involves more than having access to the rock band programs, he places value and importance on the ability of his teachers, mother, and peers to help foster his confidence. Cooper did not note any negative consequences of being involved in music; he only expressed many positive ones.

Multimodal meaning making

Cooper is a key example of how multimodal meaning making is an interrelated part of being an innovative learner. This is apparent in his statements about how he brings his iPod everywhere he goes, and his immersive use of various multimodal resources such as iPods or music videos to create a music composition. While previous generations were resourceful in their creations, Cooper is able to utilize the abundance of information and capabilities of his multimodal and technologically-infused environment.

Other emergent themes

Cooper's sense of identity and how he navigates his musical life is structured around the role of music in his life.

> I made that [composition] and she told me the next day she was buying me a MacBook Pro so I can use the proper recording programs on that and make a whole bunch of stuff.

Cooper explained that “Ya. I was really interested in it, so I wanted to try it.” And related back to the area of connecting, in that his mother also saw value in his creations:

> Um ya, well, my mom, it's not even finished yet, I had to redo the vocal track, I just haven't got around to it. My mom stole it out of my computer and put it on her mp3 and listens to it 24-7.

When asked what keeps him playing the piano, Cooper explains, “I don't know. Playing just seems to ... I can't go a day without really playing something, it's like music is 100% me.” His passionate valuing of musical participation has a quantifiable value to him, as being inseparable from who he is. He elaborated that “I can't survive without it,” and “It's my life line basically.”

> The piano make me feel more at peace. And happy. But the composing makes me feel proud of myself for accomplishing something like that. Just a big sense of accomplishment. And I enjoy it as well. So...

One of the emerging themes that many of the participants described in their interviews was that they personally valued their musical participation to be able to help them become more confident, or that it was a part of the process of them becoming more confident in their abilities. Cooper emphasizes this sense of confidence as being tied to his composing, his piano, and his sense of resourcefulness and resiliency in continuing to be involved in his musical activities by saying:

> Um, I was never really confident in myself that I could write something, but one day I kinda was just playing around and came up with something and decided to stick with it. Ended up just throwing it away. Had nothing to do with it. But then I just kinda encouraged myself to keep going with it, ended up with something that I liked. And I ended with that piece that I made just a few weeks ago.

Cooper was asked what his ideal future musical activity would be, to which he responded:

> Um. Well I was planning on becoming a music teacher, hopefully a rock school teacher like [my teacher], but I just need a job or something that's involved with music. I don't know how I'll survive without it.

The value of music to Cooper is essential, and through technology, he is able to bring his music along with him wherever he goes: “Like if I'm not playing I have iPod in and I'm listening to something, every where I go.”

5.7. Maya

Participant Name: Maya

Gender: Female

Age: 17 years old

Grade: 12

School Type: Secondary School

Top two musical activities: When asked about Maya’s top two most meaningful musical activities, she described that **singing** was the most important and meaningful to her. Maya’s secondary choice of musical activity was **acoustic guitar.** She was involved with both singing and playing the guitar several times a week, and had been doing both activities for more than five years.

Maya is involved in a number of musical activities in her daily life, many of these activities occur in a combination of outside of school and within school contexts, though a few of her musical activities are situated specifically within school contexts. Within Maya’s interview, she described all of her musical activities, which included:

- Singing
- Guitar
- Composing
- Recording Arts
- Computer
- Drums
- Tenor Sax
- Clarinet
- Dance

- iPod

Maya describes that she enjoys all her musical activities. Even activities that aren't specifically playing an instrument, such as dancing, Maya considers a part of her musical activities, as "I can't dance without music. So that's… music is my inspiration for dancing."

For Maya, music is a central part of how she envisions her life:

> I always… whenever I go on the computer or in the shower, I always bring music and sing. That's... (pause) Yeah, I get up in the morning or whatnot in the morning and put on the iPod and sing there too.

Regardless of whether she felt she was a good singer or not, she still stated that she felt she wanted to do it, because it "fun":

> I just… to be honest like I love to have fun, so much fun. And for some reason, sitting there with a friend in like a car blasting like your favourite song just sitting there screaming it and singing it is so much fun. Going out there and performing just holding a microphone is just fun. Like you know, honestly I don't know how to explain it. Just… like I said before, last semester while performing, I know that I'm not that good of a singer, but I sat there and got to front a band. And that's probably the coolest feeling ever, regardless of how bad you think you are, or how bad everyone else thinks you are. And at that time you know, nobody was saying, "Wow, you suck!" You're sitting there like, "Yes! That was a sick song!" So I mean that's probably so cool.

For Maya, from her descriptions, music is essential, and when asked why other young people should get involved in music, she was adamant that music is a pertinent aspect of life:

> 'Cause it's just a life without music is no life at all and if… even if you're not good at music, you should definitely just try. I mean like we have kids that come in here all the time that like first year playing guitar, "I'm going to go for it!" It's just… it's a sense of accomplishment whether you come out being like freakin'… (long pause)… whether you come out being like fan (--) or something. I mean… or you still come out being that person who can play one chord. It's still just a sense of accomplishment. And it's very inspiring and incredibly creative. It'll drive so many things from the deepest depths that you didn't even know you had in you. So…

5.7.1. Maya: Interrelated areas of 21st century learning and innovation

Connecting

When discussing Maya's involvement in the school musical, she quickly noted "I wasn't a big role or any… he [Eric] was in *The Wedding Singer* too!" Maya's friendship with Eric tended to continue through the interview as one of key elements of her musical life.

She builds on her musical knowledge through her relationships with her peers, in which she finds new ways of making musical connections through the knowledge her friends or peers share.

> All the music keeps me involved. Every day I learn of new music. This semester, these guys did a Tool set and I didn't know how much I liked Tool until they started doing it and now I listen to it all the time, and sing it, and have fun with it for sure. It's just the music; the ever-changing music just keeps you holding on to it.

Connecting is not just about passive involvement, rather it is the back and forth, give and take, of the connectedness between Maya and the people around her:

> I've had a few people sit there and listen to me and be like, "Oh wow! You're actually pretty good!" And then I've had people sit there and be like, "I'm gonna go in the other room. See ya later" (laughs). So honestly like, the people around me, I think it just… I dunno, I think… (pause) going back to being the open and free thing like if I'm sitting there being open and free, then they sit there and be open and free, whether it be singing or telling me a story or anything. So really, I mean I think singing just really relates to that a lot for me and the people around me. It's just… If I'm sitting there being open, it allows them to be open with me.

Maya's connection to her social and environmental contexts is an important aspect of how she describes whether her involvement in music has something to do with the place that she is in:

> Yeah, definitely. Umm, if I weren't in this school, I probably wouldn't be singing, like at all. Like I still don't consider… I don't classify myself as a singer. I classify myself as guitar, bass, like instruments. But, umm… (pause) if it weren't for this school, I would have never… like,

> I've been in this… the rock school program and the recording arts program since I was in grade 9. It took me until grade 12 to have the courage to sing in front of an audience.
>
> And if it weren't for rock school, then that would have never happened, at all. I would not have been able to develop the skills that I have now, though it's not… good (laughs). But if it weren't for this school and the environment, like at home like I lived with my dad until I was in grade 11. Like I said they'd always on the weekends have these musicians over and I learnt so much from his buddy Tim. Taught me so much on guitar. And then I even got a little courage to sing there and then eventually you get so comfortable with it regardless of how well you think you do, or how well you know you are doing that, that you just do it.
>
> So if it weren't for my family and this school, I probably wouldn't be the person I am. So…

Self-directed learning

Maya's descriptions of her early musical life demonstrate what Green (2007) describes as enculturation, in which her lived environment provided her with musical opportunities. Maya explained, "umm, when I was younger too, my dad used to always have his friends over and we would always jam in there. That's what originally kinda got me into it. My dad's jam sessions."

Maya's informal music learning was also a part of having those around her that had the opportunity to provide mentorship, and in non-formal capacities, teach her about playing the guitar. She elaborated on when she started playing guitar:

> Oh, like grade 4, when you had to start doing it in music classes in like elementary school. I took the biggest liking to it and then in like grade 6 or 5, I found, umm, my neighbours. They were like these crazy hippy people and they had acoustic guitars, and I got to take an acoustic guitar from my school on the weekends and they'd sit there and they'd teach me all these really like easy, simple, fun songs. Ever since then, I've always loved acoustic guitar.
>
> Yeah, well they ended up moving, but like everyday I'd go over there and if they were busy I wouldn't, but if they weren't, then they'd like sit there and they'd always make me these books full of like the notes you had to do and stuff. Yeah, they were really cool people.

When discussing what got Maya started singing, she described it as being for "forever," and described a form of self-regulation in her determination to go forward and learn, and to become a better musician:

> Umm, well this might kind of sound shallow, but like if we're going back to the forever statement, when I was little, like very young, I umm used to love Cher. And she, umm… every time I watched her on TV or anything, she was really vibrant and beautiful, and when she sang, everyone went crazy. I loved it! I loved the fact of being on stage and getting up there and being in front of tons of people. And of course I was like… my family wasn't like… they're not wealthy, so I was like, I'll get you guys money! Don't worry about it. Those were like the things that started it. It was really weird, but I loved the whole glamour when I was younger, but then I kinda grew out of it, but… that was probably the initial start of it. (laughs)

The notion of encountering, enculturation, and interaction, runs deep within her descriptions of her musical life:

> Yeah! It just… umm my dad's been a drummer for like before I was born. So, I remember there's this picture, I don't remember because I was too young maybe not even being a year old, and my dad's drum set was in, umm… in the room of my cradle and I was just sitting there watching her… him and, umm, I defin… I don't know, I think my dad and my mom both because they were actually… music was such a big part of their lives that it automatically had to be a big part of mine.

Maya's descriptions provided a comprehensive explanation of her use of self-directed learning as both a positive and negative consequence of her musical involvement:

> I think with all the instruments I play, singing is definitely not my main. But with all instruments, I find that once you started, you either need to make a commitment or stop making a commitment because then you start to feel crappy about yourself and that's the way it's been for me for a little while. I remember in like… I feel like in grade 10 I was a better guitarist than I am now because I had like not kept up with practicing and it's like the same thing with singing. Like if you give up for awhile, you're not going to get any better, and it's exactly the same for bass and guitar, and drums, and everything. And I've definitely, since throughout grade 11 and a bit through this year, like I kind of felt bad about myself a bit, even through just rock school classes. I'd just come to school and I'd be getting evaluated for a song and it's just like, "Wow, didn't learn it, just going to wing it." And that just makes you feel really bad about yourself because it's like

> 'OK, I know I have the skill to go home and practice, but I don't (laughs). So it definitely negatively impacts you in the fact that like you sit there and you like I have everything around me, all the surroundings to make myself a great artist, but you just don't do it. And then you're just like, "Wow, why did I even start if I'm just going to let myself down." Right? But, eventually like, it's just sometimes through like life, you just kinda get through this lazy phase or you're depressed or you're just too happy and going out with your friends. It's just hard to find time to do it. But then you gotta figure out your priorities right? Whereas like if you want to go somewhere with it then you know, keep doing it. If you want to make yourself happy, do it. Just don't sit and look at them and be like, "I should play those soon. Later!" (laughs)

In relation to playing the guitar, she notes, "I always felt like… I find that I can learn… I can pick things up quite easily. I just never push myself hard enough actually to excel." She appears to be cognizant of her lack of self-regulation when she was younger, which indicates that she may be aware of areas where she can improve. This is something that comes up later, when she notes that:

> I didn't start it because I was like "yeah I'm an instrument kind of person!" It was more like it was introduced in my life and it took awhile, and then eventually it was like OK, I need to have some skill here 'cause I can't live without it. So like throughout elementary school, I started doing guitar more and more. It started being more mandatory and every time, every New Year, it was like I couldn't wait for it. It was like the best part of music class, just getting to play guitar.

Multimodal meaning making

The concept of multimodal literacies within Maya's musical life come to light when she was faced with not knowing certain musicians or bands. Rather than admitting she didn't know whom Aerosmith or Bon Jovi were, she would search for the artists on YouTube:

> It's really cool. Rock school, it helps me learn of like… there's all these different bands that I would not have known of at all if I had not joined these classes. Like, I barely knew any Nirvana when I came here. I… like I just used to be one of those chicks who used to listen to rap music. I came here and they're like, "Yeah, let's do some Aerosmith or some Bon Jovi!" I'm like, "who are these guys?!" (laughs) Like I knew old music, like old classic rock. My dad's a drummer and he likes that stuff. But some things I'd never even heard of and I they were

> like, “You know this guy?” And I was like “Yeah I know them. What’s their name again?” I searched it up on YouTube.

This is somewhat different from previous generations, in which knowledge sharing would be one of the only or few ways to gain this form of new musical knowledge.

In considering how the digital age has transformed how young people are making sense of the world around them, and utilizing multimodal digital media, Maya’s descriptions of her early music experiences provide a rare glimpse into a young person’s life before they had internet access:

> Yeah, well… well like yeah it started out like that for sure, but, umm, when I was living in [bigger town than before] and stuff with my parents, they seriously had the sickest sound system and they just blared music all the time and I’d sit there and I’d like dance around and stuff. Even if I didn’t know the words, I’d be screaming at the top of my lungs. It was just exactly what I did. I loved music to the point to having to get up and dance around and pretend like I knew the words, so… (laughs)

When asked whether she still does this, she replied, “Yeah… but then the Internet has access, so I just search up the lyrics (laughs).” The changing nature of technology has made it possible for young people like Maya to simply “Google” lyrics or access knowledge in a blink of the eye.

Other emergent themes

When Maya explained how long she has been singing, she emphatically stated that “Oh! Freakin’ forever! (laughs) No, yeah I just remember when I was a little girl, I was like, I am going to be a rock star singer!” From this statement, the sense of identity that she has placed on her musical activities seems to originate from when she was very young, and in how she has gone forward to construct her sense of musical self:

> And then when I realized singing wasn’t something everybody could do, I was like, maybe I’ll be an actress or something (laughs), because I realize I’m actually not a good vocalist. It’s just something I enjoy to do in my time, that’s all. So, yeah

When describing whether her singing has anything to do with her as a person, she describes that it is a part of her personality, and adds to her character:

> Yeah, definitely. Umm, (pause) when I was younger, I've always been that put yourself out there kind of person. So, singing and the fact of having to be in front of tons of people have never really bothered me and I think that kind of like… (pause) pushed me to be an open person, like in crowds and stuff and have fun and stuff. So that kind of definitely adds to my characteristics for sure. I'm a big personality.

She then goes on to provide a very soulful explanation of her personal valuing of music for emotional expression and management:

> Umm, when you're going through a tough time—like I've been going through a tough time the last few months—music is probably… (pause) a saviour of mine, for sure. It's like, as soon as you turn on that song, it's… like it's gotta be a good song, the one that won't make you think of all the crap that's going on in your life. You turn it on and it's like you're in that song, that's all that's in your world right now, that song. And, that's just like the beauty of music right there. So if you sit there and sing it, you're sitting there thinking of the words and what that person thinks of them and how well that person's singing it, and how well you're doing. It's just all about you in that song at that time, and you get to be lost in each other's world there, as opposed to having to be in reality which is probably something that's the most relieving thing in the world (laughs).

And again, emotional components of expression and regulation are how she describes what she gets out of playing the guitar:

> What I get out of it is just… you know, you sit there and I don't know, it's sort of relaxing to me. You just sit down with a guitar and if you're feeling sad, you play sad music, you play happy music. Like that's probably the 2 best emotions you can get out of acoustic guitar. You can either play extremely sad music or really happy music. Like you can get a really hardcore metal sound out of it and all that stuff. So like they're really good for those 2 moods. And the impacts on me is like crazy because it's like you sit there and you listen to a happy song and all of a sudden you're like, "Yes! I want to play that happy song, I want to be happy!" but if you're sitting there and you're upset, you play sad music and maybe it's what you need at the time. So I don't know, I think the impacts are good and bad, depending on how you're feeling.

Maya personally values her involvement in singing as a way to boost her confidence. This is evident when she describes what keeps her involved:

> Probably… (pause) the music for sure. Like everything about the music especially something with amazing vocals in it, like this year or… yeah, this year, umm, last semester, I actually sang for a dream theatre set. He's the drumming [*pointing to a person*] (laughs), and it was so… I knew that I wasn't that good, but it was more like a confidence boost more than anything. Like I had to sit there and practice in front of all these people, practice in front of my band, practice in front of myself, my peers, my… everybody and then perform the show in front of all my family and friends and people I didn't even know. But it, umm… (pause) it made me feel… like when I was watching the video I knew that I sounded like crap! (laugh) But nonetheless, I don't regret any of it because it's an experience that I loved and I don't care how horrible I sound. I sit there and still sing at the computer and I'm like, "Yeah! That was a good one! (laughs) That was good even though I know I'm not that good!"

Looking at Maya's statement above, she is describing using multimodal video footage as a way of better understanding her singing capabilities. She is taking the opportunity to use her physical environment to perform for others, and uses video footage as a way of reflecting on her musical capacities and learning from the experience.

5.8. Jessica

Participant Name: Jessica

Gender: Female

Age: 15 years old

Grade: 9

School Type: Secondary School

Top two musical activities: When asked about her top two most meaningful musical activities, she described that **guitar** was the most important and meaningful to her. Jessica's secondary choice of musical activity was **listening to music.** She was involved with both guitar and listening several times a week, and had been only learning

the guitar for six months to a year, while she had been listening to music for more than five years.

Jessica is involved in a number of musical activities in her daily life, many of these activities occur as a combination both outside of school and within school contexts. Within Jessica's interview, she described all of her musical activities, which included:

- Guitar
- Listening to music
- Rock School
- Recording Arts
- Concert Band
- Singing

5.8.1. Jessica: Interrelated areas of 21st century learning and innovation

Jessica described other reasons she got started playing guitar, and clearly provides a link to her musical listening,

> Umm, the music I listened to, I guess... you know, like when you're listening to music... guitar, it sounds so cool, you're just like: "Oh! I wanna learn that!" and stuff, so... and just seeing people playing makes you wanna play too.

Connecting

When describing if playing the guitar has anything to do with the people around her, she says, "Umm, yeah, definitely, the people in my music class, my teacher, my Dad, and like my other family there (--) doesn't know the first thing about guitar, so anything I do sounds good to them." Jessica's involvement in her guitar playing is highly social, just as listening to music happens as a part of her home life with both her mother and father. This connectedness is particularly evident in how she describes her relationship and connecting with her father, and how he had stopped playing the guitar, but "he used to [play the guitar], and then he stopped, but then when I started playing

guitar he started playing guitar again, and then he... would like to jam with his friends, sometimes, … so..." She later goes on to describe that she has made friendships that are specifically music-related, with her regular friends not being into music as much,, "none of my friends are really like, involved, like they all love music but not like playing it, they don't know anything..." When discussing if guitar has an impact on the place she is in, Jessica notes that "Umm... yeah, I guess, like the music crew (laughs) I'd probably never walk a foot in here 'cause I'd be too, like... it would just be awkward." This provides context into how getting involved in playing the guitar has made it possible for her to feel connected to her music classmates, and develop a new sense of where she fits in.

Jessica notes that if she weren't doing the interview that she would be "playing on the keyboard with my friend (laughs), just messing around." While Jessica is connecting with others around her, she is also using the connectivity of digital technology to develop an interconnected relationship with the Internet, as a form of informal mentorship for learning to play the guitar.

Self-directed learning

The notion of self-directed learning is woven throughout Jessic'a interview. She describes developing very specific and personally relevant ways of teaching herself the guitar through self-regulation that are heavily laden with technological components (and aspects of participatory cultures), such as searching for knowledge via the Internet. She also is what Green (2007) would describe as an informal music learner. When asked what got her started playing the guitar, Jessica stated that,

> When I started playing guitar I was in Calgary, and my Dad and I went to a music shop, and they had guitars everywhere, and I definitely wanted one, so we kind of... been influenced by, like 300 guitars in the store that I was in (laughs), so, yeah...
>
> OK, umm, well, my Dad played guitar, and he was like... they were more Metal, but he played in... I guess it's cool to see him playing and playing a long time and stuff... so, umm, I sing and stuff, and I wanted to make myself better, in terms of like music and I think a musician, I don't know, I just thought that guitar would be right... the next thing to do, to make it better, you know? So... yeah, like my Dad, playing the guitar.

> I listen to music all the time, I... like I said, we recorded music when we were here, and... umm, well, when we were doing Rock school we had like our bands, so that would be that... and, yeah... umm, (--) listening to music on my computer all the time obviously... I, umm, sometimes mess around with my keyboard like, umm, little piano (--)

Jessica is exhibiting the four criteria of informal music learning practices: encountering her musical knowledge outside a formal education setting at the outset, being encultured within her lived musical environment, being deeply connected through her interactions with her father and music peers, and being a self-teacher.

Jessica describes her reason for wanting to start learning the guitar as a matter of loving it, but more so, she wanted to learn more once joining her music class at her current school:

> Oh, OK, umm... first reason? Because I love it, obviously; I wouldn't play if I didn't like it. Umm, well, I guess I joined the music class like right after and start playing, and so... being in a music class that made me want to learn more, and more, and more, and more, 'cause I was (--) a beginner, and everyone else around me so good at it (laughs), so obviously I wanted to become better, umm, yeah...

Jessica exhibits self-regulation in varying ways, and also uses self-teaching to expand her knowledge of playing the guitar. She was asked if in watching others playing if they teach her at all, and she laughingly said, “Yeah, umm, not really (laughs), I'll just see them playing, I'll just go learn like my own set, I guess, yeah.”

Further, Jessica describes her self-teaching in “Everything else like... I've taught myself, pretty much, I didn't take guitar lessons or anything... (--) plan on it, but I procrastinate...”

Jessica provides an example of the difference between her two previous middle schools, in which she describes a music class, where she would sit passively and learn a song as “ridiculous,” which seemed to be in contrast to her other school’s rock program.

> Yeah, umm, yeah... well, I came from two Middle schools. The first one was [school name]; they had like a Rock program itself, and the other one was like... we, we just had a music class, and we sit there

> and learn like... "Ode to Joy", or something (laughs), on the guitar, and I was like... "*ridiculous*" [emphasis added] (laughs)

To Jessica, music is an interconnected part of her life, even though she only starting learning the guitar ten months prior to the interview. She describes musical listening as the second most meaningful musical activity that she is involved in: “Well... listening to music, obviously (laughs), listening to music... I listen to music more than I... listen to other things, like... people talking (laughs).”

Her most meaningful musical activity was learning the guitar and using the Internet as a resource to build on her musical knowledge:

> ... of course school is important, but... but I'm like by myself playing my guitar and learning on the Internet... that's why I use the Internet, to learn songs... then that's, like... 'cause that's where I learn, taught myself pretty much, so...

She elaborated that she was learning the guitar on the Internet, or “where like... other people can teach...” When asked if playing the guitar had to do with people around her, she noted that “Umm, no, none of my friends really play music, except for friends in this class, and I didn't know anyone here, so... (laughs).” Her use of the Internet provides her with the ability to teach herself, and become a better guitarist.

Finally, she stays involved in listening to music not simply for the passive interest within the activity, rather as an active participant in her learning:

> Oh! Umm, well, the fact that I'm learning music, so I'll be learning a song, and I'll be listening to it, and I'll be list... or if I hear like a band that I like and I listen to more of their music, and I'm like (--), it's just kind of (--) learning (--) listen to all sorts of different kinds of music.

Multimodal meaning making

Jessica describes the Internet as a key part of her musical activities, and learning, yet her musical life is not completely technological. Her multimodal literacies provide her with the ability to transfer seamlessly between modes of making meaning and sense within her musical life:

> I'll usually kind of use a computer or something like that, but usually it'll be like a record... umm, so, I'll just come into my mind (--) down on paper, or... yeah, I would, umm, write it, and then I'll type it... I'm sorry, type it and print it (laughs) on my Dad's computer, that's what I would do, like last summer and stuff...

When answering the question of "how often do you listen to music?" instead of providing a numerical answer, Jessica provides a very comprehensive description of how listening to music is a central component to her daily life, in which listening to music takes on various shapes depending on the context:

> Umm, a lot, like, during class, when I shouldn't be listening to music I probably listen to music more, like, I'll just... I'll have my headphones on (--), and then it'll always be like quiet, umm, when I'm walking to school, when I'm walking anywhere, when I'm sitting at home on my computer, I... instead of watching T.V. I'd rather be listening to music.... from not listening to music, but I'm playing it (laughs), so pretty much all of the time.

Finally, Jessica describes that the Internet provided her with the opportunity to start listening to music:

> Listening to music? Umm... I'm just... huh! I think maybe the Internet, and me being allowed to finally use the Internet, umm, I would go into the computer and listen to music, and of course I'd always get CDs for my birthday, and for Christmas, and stuff... and (--), I had a lot. Also, umm, the music channel, MTV, I would watch... I've been watching that for years (laughs), since I was very little, and... yeah, I pretty much... that is all of the ads on T.V. (--) to start listening to artists, and... I guess, when you're little, yeah... pretty much the Internet and stuff... just music, and my Mom always, my Mom loves music, my Dad loves music, so... yeah.

Jessica's interactions within her multimodally infused world appeared to fluctuate back and forth from her technologically advanced medium of the Internet, to more traditional or "old" forms of media, such as ads on television. She describes her musical life in ways that are interrelated and rooted in multimodal forms of meaning making. Her ability to be multimodally literate is not something that she specifically acknowledges, rather, it is heavily laden throughout the language she uses, much like many of the other innovative learners.

Other emergent themes

"I've always like, loved music and stuff, and... yeah (laughs) it's just kind of... it's just something I want to do, so..." When discussing the impacts of being involved in playing and learning the guitar, Jessica notes that "Umm, takes a lot of my time, but that's like a good thing, so otherwise I could be doing other things, I guess... (laughs)." She demonstrates personal valuing of her involvement, in where she even spent more time with her guitar the previous summer than her friends "Umm, yeah, especially like last summer, I was staying most of the time for the guitar rather than going and hang out with my friends (laughs) and have fun (laughs) sounds so bad! But, yeah..." Her friends would call and "*Where are you*!? *What are you doing*!?" (laughs) I just kind of (--) playing my guitar."

Jessica describes the impacts of playing the guitar on her sense of self; her value of music is so strong that she loses what it seems to be is a sense of respect for others if they are "dissing" her music:

> yeah, I think... umm, like I'll find myself, this sounds kind of bad... I'll find myself like, if I'm with other people that don't have like an appreciation for music, like... I kind of lose... lose stuff for them, if that's (--) (laughs) but like, you know, if they're dissing something that you love it's like... well... they don't know what they're talking about? So that's fine.

When discussing her listening to music, Jessica mentions in passing that she also writes music. She then goes on to describe the personal value of being involved in that activity, in which she is able to transfer her strengths from her English class knowledge to her playing of the guitar and writing, thus being resourceful in building on her musical abilities.

5.9. Jackson

Participant Name: Jackson

Gender: Male

Age: 18 years old

Grade: 12

School Type: Secondary School

Top two musical activities: When asked about his top two most meaningful musical activities, Jackson emphatically stated that **guitar** was the most important and meaningful to him. Jackson's secondary choice of musical activity was **listening to music.** He was involved with both playing the guitar and listening to music several times a week, and had been playing the guitar for two to three years and listening to music for more than five years. While many of the innovative learners within this study had been involved in their musical activities for well over five years, and would often identify themselves as being musicians, Jackson is relatively new to being musically entrenched. And while he is identified as an innovative learner through the coding of the interrelated areas of learning and innovation, he appears to be an innovative learner that is just starting to flourish, and seems to demonstrate the capacity for deeper engagement.

Jackson is involved in a number of musical activities in his daily life, a majority of these activities occur both outside of school and within school contexts. Within Jackson's interview, he described all of his musical activities, which included:

- Guitar
- Listening
- Mentoring
- Performing
- Writing
- Improvising
- Live Music

5.9.1. Jackson: Interrelated areas of 21st century learning and innovation

Connecting

Jackson explains that his involvement with music is not just about playing the guitar, and that he uses his current knowledge, to share it with others: “And then like I don’t know if it counts but my six year old cousin sorta comes over and tries to play and I sorta show him a little bit. [laughs].”

In looking at what keeps him involved, Jackson describes his rationale, in which there are aspects of connecting, learning, and valuing. He found himself having people to play guitar with if he learned a new song, and he used this as opportunity to try out new resources, such as an amp:

> Shheez. Motivation actually its just like whenever people are like ‘oh ya you know like learn this song we’ll come in and we’ll play it together on Monday’. Oh cool, like … for the first like … what is that I guess year before I played just by myself and came I’d never played with an amp before you know. *[proudly]*

> I played with an amp and it was the best experience I’ve ever playing with everybody else, it’s just so much fun. Its like an involvement thing.

The social nature of Jackson’s musical life is something that seems to be relatively new since he started playing guitar, as he notes that “well I’ve known everybody, but then like when you get here you sorta start playing together you feel like you get closer sort of thing.”

Jackson goes on to describe the connected nature of his musical involvement, in where he derives a great deal of his sense of self through others wanting to be involved with music with him, as he says that he,

> Probably wouldn't be the same person without it. Sorta thing. Just the friends I have… friends I have now they would be like ‘Ohh you know can you learn a song for me next time you come over we’ll just sing together’, that kind of thing.

He further elaborates on the capacity of his musical involvement as a form of becoming less of a loner. His statement conveys that he values his involvement a great deal, and attributes his connecting and socializing with others to listening and playing.

> Maybe, I was I dunno I was kinda a loner back in the day. So. I started listening to music and then people sorta, I started talking to others about music and so it really helped me sorta … talk to people.

Self-directed learning

Jackson describes how he got started playing the guitar as a snowball effect, in which he built upon listening to music, exploring other genres, and then through interactions with his friend and it went from there:

> Umm. Its actually is sorta I didn't really get into music until about sixth or seventh grade. And then I started listening then. Then I sorta went through, started listening to different bands, and then my friends started guitar. And then I went to his house and we started messing around with his, and I was like 'aww I kinda want one now' so it sorta snowball effect kind of thing.

Jackson's descriptions of what got him started go on to convey self-regulation in his persistence and growth in learning the guitar, as he notes that,

> when I first got it [guitar] I thought it was really annoying and thing. And when I did get lessons, it started motivating me more to keep it going sort of thing. Its like first its most difficult and then as soon as I got the teacher it was like hey I can kinda do this.

Jackson describes the impacts of being involved in playing the guitar, as related to the fun he has in performing, as well as "teaching others, with the people helping me here you know, I want be able to help others as well with that." He is not only engaging in mentorship with his classmates, but he wants to go forward and share his knowledge through teaching others.

As will be seen within the area of multimodal meaning making for Jackson, he is using multimodal ways of seeking musical knowledge, and making it accessible to himself. He uses YouTube to seek inspiration or meaningful songs from other artists, to pair guitar tabs, and he asks his peers to watch their hands as they play a particular part

of a song as a way for him to learn. It is an intermeshed activity, and one not done in solitude by merely practicing in a room alone.

Multimodal meaning making

He notes that he plays a little bit of both acoustic and electric guitar, and that "as soon as I get home its in my hand kinda thing." And that "I'll be watching TV and it will be in my hand. I'll be sitting on the computer and it will be in my hand sorta thing. [laughs]."

When he discussed how he started listening to music, he notes that:

> I don't know, I just didn't really listen to music up until then [6th or 7th grade]. And I started watching MuchMusic first band that caught my eye was Billy Talent, heh. And so I went 'hey this actually is kinda cool, and started singing it later. So. . . I dunno. That's how I started.

And when he started with listening to MuchMusic, he has been changing what he listens to lately, and "I've sorta been sticking to the more underground kinda thing." He will "Just like I'll look up I don't even know if it's underground but I feel like I go on YouTube and like look up a band that sounds like a band." When asked how that works, he said: "like Google, 'what sounds like this band' and then I look them up on YouTube and its like a band that nobody had heard of, sorta thing. […] That usually works well. [*laughs*]."

Although he started with watching music videos on television, he would then start singing the songs outside of that activity. He described also listenig to music on his iPod, or on his computer, and when asked why on his computer, he noted that "its just when I'm on YouTube or sometimes I don't have my iPod, I'll just look up a random band, and yeah, I haven't heard that song, so it sorta clicks." Building on the multimodal ways that many young people are searching for musical knowledge, Jackson uses YouTube to find new songs that resonate with him, and that are meaningful. Through participatory cultures, and the multimodal nature of YouTube, Jackson is able to engage in more expansive learning opportunities. He illustrates that "I'll look up covers of okay I can't figure out this part even with the tabs, and I'll look at the guy and with those fingers and I'll be like Oh, that makes sense. You know." Jackson then comments that "If I can see it, it's actually a lot easier" and thus he provides an illuminating example of how he is

bridging his musical listening with visual modes of literacy. He appears to be engaging in fluid ways of learning and with technology in ways that seem to be an engrained part of his everyday life. Further, Jackson goes into detail:

> Which is what I do with some of these guys *[points at classmates in other room]*. I couldn't just see the tabs and do it. I'd be like 'how do you play that part?' and they'll just do it, and you'll be 'Oh okay cool'. Just watch their hands sort of thing.

His ways of learning are deeply engrained in multimodal literacies, in which simply reading guitar tabs is not sufficient. He needs physical demonstrations to contribute to his learning, which is now available online within the 21st century and the interconnected world and affordances of the Internet, Google, and YouTube, among many others.

Other emergent themes

Jackson describes his most meaningful activity as: "Actually just playing, I just enjoy the whole experience for it." He describes his musical involvement as a large part of how he visualizes his identity, in which he places meaning on being able to play guitar, and shape how others see him:

> I actually took it [music class] because I wanted to be able to show people I play guitar. Because people go, 'I play guitar' and they go 'no you don't' you know, don't look the part. And I'm like no I can kinda play. And so you know. I wanted to see if I could play! You know play in the concert.

He goes on to explain that people think of him as a regular guy, not a rocker type, and "They just sorta look at me, and they go 'you listen to rock?' and I go 'yeah! That's all I listen to'. Kinda thing." His involvement in playing the guitar has become a large part of how he shapes his sense of identity.

When considering whether starting to play the guitar had to do with him as a person, Jackson reflected back to when he first started, and described the personal value he was ascribing to playing: "Actually cuz I try to picture I didn't really have many hobbies I guess where I used to just sit around at home and go out with friends, now at least when I'm at home I do something…"

Playing the guitar has given Jackson the opportunity to become motivated to do things, as he again reflects on his life before he started playing:

> Like before use to be not motivated for anything, now at least I can be motivate myself to learn a song or … improve a technique or something. And then even with like school you know, school was kind of boring… came to this class actually enjoy goin' to school. Soo….

Jackson's valuing of his musical involvement presents various aspects of Pitts (2005) reasons for valuing musical participation, in which he describes it "as an opportunity to perform with others" (p. 10), a source of pleasure, and as a way to form friendships:

> It's just a total blast. You know, I've never had any experience like it, like at the concert [in which he performed], it was the most fun I have had! […] Yeah. The most fun I've played and had in like the longest time! Like couldn't think of… It's one of those moments in life that I'm never gonna forget. That sort of thing.

Jackson's sense of identity and sense of self are often discussed in tandem with his playing of the guitar, as well as his participation in playing the guitar as a definite social component: "I umm play guitar, people know it's a big part of my life now. So I usually have it on me." In regards to listening to music, he indicates that "Yeah. It sort of helps me… *[mimics strumming a guitar]"* and *"*Sorta, even then, its sorta a conversation starter. Like what type of music do you listen to? So that works well. In a social situation."

Finally, Jackson's involvement in playing the guitar makes him more motivated to attend school, and from that, it seeps into his other subjects and activities. His descriptions demonstrate his sense of valuing of his independence and his ability to build upon his musical activities to help him succeed in other areas:

> I didn't used to be motivated for school at all. But now I'll get my homework to play guitar you know. So I used to do that homework and that sort of went like okay I guess I did that homework, might as well I had one more class that had homework, and I'd do homework in that class, like hey I'm already half done, kinda thing. […] So it helped me finish homework. I guess.

This capacity for initiative to learn, and to be motivated by the challenge as a form of active engagement in his development, is related to *self-directed learning* and a key aspect of what Larson (2006) refers to as positive youth development.

5.10. Max

Participant Name: Max

Gender: Male

Age: 18 years old

Grade: 12

School Type: Secondary School

Top two musical activities: When asked about his top two most meaningful musical activities, Max stated that **guitar** was the most important and meaningful to him. Max's secondary choice of musical activity was **singing.** He was involved with both guitar and playing the guitar several times a week, and had been playing the guitar for more than five years, though only singing for between six months to a year.

Max is involved in a number of musical activities in his daily life, a majority of these activities occur both outside of school and within school contexts. Within Max's interview, he described all of his musical activities, which included:

- Guitar
- Singing
- Rock School
- Listening (iPod, Computer)
- Improvising
- Jamming (at home or with friends)

5.10.1. Max: Interrelated areas of 21st century learning and innovation

Connecting

Music is a central part of Max's interconnected life. He initially notes that "I listen to a lot of music" and that he is able to listen to music in a variety of places, "Uhh. I have an iPod, I have a music library on my computer, stereo in the car." The activity of listening to music is not just a solitary activity for Max, it is a way of being, in that "Uhhh. I listen to music all the time. Umm like when I'm by myself. I have my iPod. When friends are over on the stereo or speakers or whatever." He even notes that he will listen to music at school in the lab, or possibly during class. His life at school and at home has music woven through it, as he says statements such as, "At home we have a full music room that I jam with a band or friends a lot" and "Yeah I practice pretty much every day."

Initially getting involved in music was highly connected with his friendships, as well as his family members, in that they all had similar interests at the time. Max explains, that "Umm yeah. It had to do with a lot of friends were getting into it at the same time I was." And, that "Oh ya. Actually because my dad and my brother picked it up at the exact same time. So it was kinda a family thing back then." Continuing with playing the guitar was also an aspect of his relationships with his friends, as "Well after I learned guitar I had some friends that also picked up bass and drums. So we could have a little band going, just on the side." This connectivity to his friends blurs into his capacity for learning, as he describes the shared experience of fellow guitar players, and how the sharing of techniques and things that he has learned can help with forming bands, and finding friends.

The connectedness he has with his brother also led to him to start singing, as he explains, "Well my brother got started singing before I did. And he wasn't bad so I just thought I would give it a try. And eventually I got good enough to perform."

Finally, Max was one of the innovative learners that exhibited many of the aspects of Jenkins' (2009) participatory cultures. As will be discussed in other areas, Max attributes his continued involvement in singing as connected to his posting videos of

his band online, and receiving positive feedback and compliments. He posted his videos to "YouTube and Facebook. And I'm doing covers. I've had a lot of good responses on the internet." It is evident that there are relatively low barriers to his sharing of his creations, and he finds a strong support for what he is sharing, and gains a sense that his contributions matter.

Self-directed learning

Max describes his most meaningful activity as guitar, but more so, that "Uhh. Basically becoming a better guitarist. Player. The time I'm able to practice. […] At home it like yeah. That's what I do, because it's enjoyable."

Max describes both his most meaningful musical activities as activities he wants to become better at, rather than just naming the activities themselves. For his second favourite activity, it was "Probably learning to be a better singer." This is unique, as he was referring to something he had not been doing for very long but wanted to do more of in the future thereby reinforcing his interest in learning and growing as a musician.

Even in his descriptions of improving his skills, he emphasizes a self-teaching format, as he articulates, "I do a lot of improvising. Basically on guitar I learned scales, I improvise whenever I am playing."

Max was asked what keeps him involved playing the guitar now, to which he replied "Well now? Umm. It's just something I enjoy doing. Like almost like people watch TV." His comparison of playing guitar to watching TV is somewhat useful in better understanding the interconnected nature of music within his life, as TV often is a common activity for many youth. He builds on this saying, "Yeah that actually happens a lot. There's nothing to do around the house. I'll just pick up the guitar and play for an hour or something."

In addition, when asked if staying involved has to do with him as person, Max again brought up his interest in learning, and exploring his musical development: "Umm. Probably. The style of music I listen to and everything. Every time I hear a new song like 'I wanna play that' so I'll go home and learn it on my guitar. Ya." From this, he explains the role of his friends in his musical life, as he elaborates, "Definitely it has a lot

to do with who's around me. Friends influence the type of music you listen to. And that the type of music you wanna learn."

Within the contexts of his involvement in formal music class at school, he explains that while "Yeah I know a lot of people here that like the main reason they come to school is because they can come here and its fun. It keeps them in school." Yet, for Max, it is only one component to his interconnected musical life, "Yeah. For me its just another part of the day but its always the thing I look forward to. Yeah. Its good to have."

Multimodal meaning making

As an innovative learner, Max is involved in complex forms of multimodal sense making that are derived from his deeply engrained multimodal literacies. Simply growing up in a digital age does not predicate that a learner will be an innovative learner, or if they will build on their multimodal capacities and literacies to expand their knowledge, or to become involved in participatory cultures. As Jenkins (2009) notes, not all young people are involved in participatory cultures, and in that line of thought, the same goes for musical innovative learners, in that multimodal sense making and literacy are not an automatic activity just by being associated with multimodal activities. On the other hand, Max is an example of a young person that is engaging in participatory cultures both in terms of receiving feedback and in terms of his continuing growth as a musician. Further, he is making sense of his musical life, continuing to sing; based on the very multimodal interactions he is having with his friends, and the larger community of viewers online.

In posting his cover songs online, he is able to use multimodal forms of meaning making and expression to share his musical knowledge and skills with the world. In a cover song he posted to YouTube two years prior shows that he has over 34,000 likes on a particular cover of the song "Little Wing." Rather than just posting the video, he included a textual explanation of what he was doing, that "My version of little wing, using a custom strat, Fender HR Deville and two tube screamers, Ibanez TS9 and a Behringer T0800. I'm 15 if you're wondering." In his comment to his video cover, he is also providing the context to the viewer to better understand that he was only 15 years old at

the time of posting. Based on this multimodal form of sharing his musical creations and expression, he received over 100 comments either commending him for his performance, asking questions about technique or the instrument. This provided an opportunity for him to be able to interact with a larger community that helped him shape his sense of self as a musician and his musical abilities further.

Other emergent themes

Max describes how he started playing the guitar as something to do with who he was as a person, as he elaborates, "Umm it started off more like that. I used to have long hair and the guitar was kinda like part of my style. But then, it just grew into something I really like to do." He places personal value on his "style" and the image that he was conveying when he started, but was able to identify that it became a part of him, and something that was pleasurable to him.

In talking about whether the place Max was in at the time had any impact on his starting to play the guitar, he replied that it likely didn't have an influence, as while he had music at school, there was no program that focused on guitar. Rather, "it was more my own personal interest back then."

The value of music to Max appears very fluid and interconnected:

> Umm. I dunno. It just add another dimension to your life that would not normally be there. Rather than just sitting at home playing video games. Like most other people would do. Eh. Guitar is just like another option. (pause) I'm not sure what else (--)

Back to describing his involvement in singing, Max vocalizes that it has something to do with him as a person, as he elaborates:

> Uhh. It kinda does. A lot of people are shy to sing. And once you get over the point where you just realize that you just gotta do it. It kinda changes … changes who you are a little. I dunno

Max's singing started due to his brother's example, in which his father and brother both urged him to start a band, and keep singing. From his involvement in the band, and singing within it, Max describes what keeps him involved singing, to which he

adds a very multimodal and interactive reason, that “Mainly the success we have in the band this year. Uhh and I’ve had a lot of compliments from my friends and videos posted on the Internet and ya.” Through the feedback from his friends and online, he assigns value to this as the rationale for his continued involvement in singing. This investment in participatory cultures is not only multimodally charged; it also demonstrates the interrelated and digital nature of his musical activities.

Even the choices of music he made for the cover songs he would sing were based on whether he thought that a certain choice would let him build on his strengths, as he mentions that “My original cover was an Oasis Wonderwall, which is really weird, but it sounded good for my voice. Then I started doing Hendrix and stuff. Which worked even better. So yeah.” He views his involvement in this as an “accomplishment,” though back to the interrelated area of connecting, he clarifies that it had to do with the people around him, and his valuing of their belief in his abilities, “Because it probably would have never happened if it wasn’t for a few people who said to keep going,” as well as his social support from school, as “there is a lot of positive attitude towards my singing here [*at school*] So I just kept it up.”

Max describes a key impact of his musical involvement is that there is “a sense of pride,” and thus a personal valuing of music’s ability to foster or confirm this sense of achievement.

5.11. Cindy

Participant Name: Cindy

Gender: Female

Age: 15 years old

Grade: 10

School Type: Secondary School

Top two musical activities: When asked about her top two most meaningful musical activities, Cindy stated that **clarinet** was the most important and meaningful to

her. Cindy's secondary choice of musical activity was **listening to music.** She was involved with both clarinet and listening to music several times a week, and had been playing the clarinet for four to five years, and listening for more than five years.

Cindy is involved in a number of musical activities in her daily life, a majority of these activities occur both outside of school and within school contexts, with none of the activities solely occurring in just school contexts. Within Cindy's interview, she described all of her musical activities, which included:

- Clarinet
- Listening
- GarageBand
- Watching and making music
- Guitar
- Live Music

Music is a key part of Cindy's life. She describes listening as a something she does all the time, from being at home, to the car to school. She also uses a portable music player to assist in listening everywhere. While this not unique, as many young people listen to music throughout their daily life, in Cindy's case, it provides the context to better understanding her interconnected musical life is also interwoven with technological components.

5.11.1. Cindy: Interrelated areas of 21st century learning and innovation

Connecting

What got Cindy started playing the clarinet can be attributed to her brother:

> Umm, my brother. I used to hear him practice every day all the time, and I really liked the sound and how he did it with the music he was playing, so... I was interested in that, so he gave me his clarinet when he got out of Elementary school, 'cause he didn't wanna play anymore, and so since grade 5 I've been playing the... that, so, and I've always been into it, I've always kind of find the pieces, like I go online and try and research, you know, pieces that I can play by myself at home...

Her brother has continued to play a key part of her musical involvement, especially since she lived in a more remote setting. She describes how she is connected through him to listening to music, as well as the social aspects that it provides:

> Well, obviously I've lived in the country, so everything was so quiet, and I didn't... I don't like it when it's quiet, so... I'd always just turn the music on, and if like my brother used to have music in some (--), so I'd go to him and listen at it too while we were hanging around each other over there...

Going beyond her connecting with her brother, she also describes very social reasons for continuing to be involved in her musical activities, in which she elucidates:

> Umm, playing does, 'cause in... in the band is what keeps... like a band is like a... like for the band here, like a big group of people that are interacting, and comparing, and... like learning together, so it's a very social thing...

Self-directed learning

In trying to decide on which activity was meaningful to her, Cindy was trying to choose between "It's kind of like as high between... either just generally or listening to it? Or like looking for new kinds that are new bands or things like that, but..." While she ends up choosing listening to music as her actual second choice musical activity, the instinct to mention looking for new bands provides an indication of her interest in seeking new musical experiences. As mentioned in the quote earlier, Cindy uses online resources to "try and research" pieces and songs that she can play on her own. This influence of technology combined with an interest to learn is woven through her descriptions of her musical life.

Multimodal meaning making

Cindy is involved in a diverse mix of musical activities. While previous generations typically went to concerts and watched music videos, Cindy's involvement in her musical activities involves multimodal ways of interacting within her life. For example, she says,

> I go to concerts of bands that I enjoy, umm, I do watch music videos on TV and on YouTube, and I use that program on Macs, the Garage Band whenever that I'm bored, and during class I use that and make music, umm...

The use of YouTube in of itself isn't what makes her interactions multimodal, it is her use of YouTube and other online sites as a part of her searching and "researching" pieces that she can play on her own at home. In addition, she notes that ""whenever, umm, I see or hear someone or something that I really like I'll film it or take an audio recording of it..." and "like... I like to make music videos and stuff too." Musical involvement for Cindy is not limited to her instrument – and being bored is not a reason to just do nothing; rather, she uses boredom as time to use GarageBand (music composition software) on the computer.

Other emergent themes

While Cindy uses many informal music learning practices in her daily life, she is also involved in formal music education, in which she ascribes value to the role of her music teacher who is leaving the school:

> And the thing is if I knew that there'd be one of those (--), or like do what I want to go back to band because the teacher pretty much does a lot for you, and not knowing or having someone that you don't like teach is a lot harder, so...

She sees the value of having a teacher that is invested in her learning, which demonstrates her interest in learning, and wanting to have people within her life that can foster that. Cindy finds value in her musical activities, as she describes what got her involved in listening to music, to which she emphasizes as a way of enhancing everyday life, and providing the opportunity for emotional expression, as well as regulation. This is seen in her comment:

> It's the way that you can express like how do you feel like in a day, like one day you can feel totally different than the rest and the music you listen to pretty much helps you cope with that and...

Again, she expresses an awareness of emotional elements as important in musical expression in her statement, "Well, I don't see what people like about me, but a

lot of people have like expressive emotional personalities, and it's just one of those ways to express that, I guess?"

Cindy focuses on the transformational value that music has for her. She expresses that the impact on her as a person comes from listening to music:

> And... it has helped me through a lot of stuff, like I don't think I would have been able to, like it's kinda of an escape thing to... you can put your headphones on and it's pretty much you, and what you're doing instead of everything else you have to worry about, and it keeps you focused in other like... I think it gives me focus.

Her involvement with musical listening is anything but passive; she describes herself as an active participant in her musical life. Cindy values listening to music for its ability for her to escape from everyday (Pitts, 2005), as well as its ability to help her focus on other areas of her life. This theme of escaping from the everyday repeats, as she elaborates,

> Umm, well, I guess, that's something like... if I'm listening to music and it's like I can't really listen to anybody else around me, if that's the way I want it they feel kind of (--), I feel kind of... it's kind of like a distance between that kind of thing, but it's... it's kind of a line that I wanted to draw, but then they don't kind of understand or whatever, so it's like expressing yourself again, like you just don't... sometimes I'm in one of those moods where I just wanna listen to music and not do anything else...

Playing her clarinet is also a source of personal valuing for Cindy, as she associates mainly positive aspects to her involvement, from a sense of well-being to the way her playing influence others:

> Well, when I play at home my mom likes to listen, and she always says that she's very proud that I can play things like that, or I'm actually interested in things like that, 'cause there's so many kids that just aren't, and so when I'm at home the people at my house like to... like enjoy it when I'm... take my instrument out, and here in the band where everybody enjoys listening to everybody else, so it's a very positive feeling for playing here and at home.

5.12. Logan

Participant Name: Logan

Gender: Male

Age: 18 years old

Grade: 12

School Type: Secondary School

Top two musical activities: When asked about his top two most meaningful musical activities, Logan emphatically stated that **guitar** was the most important and meaningful to him. Logan's secondary choice of musical activity was **writing.** He was involved with both composing and playing the guitar several times a week, and had been playing the guitar for more than five years, and writing for between four and five years.

Logan is involved in a number of musical activities in his daily life, a majority of these activities occur both outside of school and within school contexts. Within Logan's interview, he described all of his musical activities, which included:

- Guitar
- Writing/Composing
- Listening
- Singing
- Band
- Recording

5.12.1. Logan: Interrelated areas of 21st century learning and innovation

Connecting

Logan's describes how he connects with others, himself, and his larger community through his musical involvement. He describes the support he received from,

> Everyone. Ya. Everyone like is really supportive of everything I'm doing. All the band and stuff. Like I've worked with some, um, really big, like names in the industry and stuff. Like I've recorded with, do you know [famous Vancouver-based band]?

When Logan was asked about the possible consequences of playing music, he couldn't think of anything at the time, and further, the social aspect of his musical life emerged again, as he focused on his connectivity with others. He states,

> Like, I don't know. I don't really have anything negative at all to say about music. Everything that I've done has been really positive and everyone that I've met has been really nice. And all my friends that are in bands are like nice. Everybody's just like a nice person.

His deep involvement in his musical community, recording with famous musicians, and everyone's support, are only one aspect to the connectivity within his musical life. The acclaim of having worked with famous musicians is something that he personally values. Logan's friendship with another classmate, who is a musician, has been the impetus for his continuing to do music, and also his involvement in playing covers of songs. His life is extremely music focused and he practices around seven hours a day.

Self-directed learning

Informal music learning practices are how many young musicians and many of the young people in this research began learning to play their instruments. For Logan, it appears as though self-directed learning is part of the process of taking on the initiative to seek out his musical knowledge. Logan's lived environment provides him with opportunities to see other people playing guitars. His father played a part in how he was introduced to certain music. Logan explains,

> Ya. I usually like, what got me started was um, I was watching videos of like guitar playing and stuff and my dad told me to look up Van Halen so I did. [both laugh] I saw Eddie Van Halen play and that's what basically made me want to start playing guitar.

The notion of self-teaching is a part of Logan's vocabulary, as he said: "Ya. I'm pretty much self taught, like everything." His interest to learn was evident in his explanations of how started playing the guitar, since:

> I took my mom to Long and McQuade [music store] and uh, I was like, I really want to like, learn guitar and stuff and she bought me my first guitar and amp and I just practised and ever since then I just can't stop playing guitar.

His playing of cover songs with his best friend is another way he was musically involved, but he notes that "Ya, it was like, ah, you know like you can only do so many covers before people recognize you as a cover band." Due to this, he was inspired to move forward with his learning and expanding his knowledge, as "We wanted to do something different, so we just decided to start writing our own songs." Through continual work, he believes that they have improved in their writing skills, as he clarifies:

> At first, ya, we didn't write the best songs [laughs] but now, um, we actually know how to write. We've gotten like mentored from people ... like in the industry and stuff. So, uh, ya, we're like pretty, like we know how to write songs like pretty OK now.

Logan provides a clear example of how he is involved in his musical learning, and how he is cognizant of the ways that appropriating knowledge as one's own can be a form of learning in its own way, as he illustrates, "So, ya I think everybody can take something from somebody and you know make it their own thing, their own self or whatever, that's how they learn too." Going beyond just learning for his own purposes, he conveys much of what can be found in participatory cultures, in where he wants to share his knowledge, and finds it meaningful, as he describes "So that's how we learned and that's how we're going to like teach people if they need, stuff like that." Later in his interview he again notes that "Well if someone needs help on a song or something, or like, can't figure something out, I teach them… I usually like try to help them out […]: Like, um, or if they can't do it, I try to like, show them a simpler way to do it."

While informal ways of learning are how many learners like Logan are gaining musical knowledge and skills, formal education still plays a role in young people's lives. Logan describes his current rock school program as a way to build upon his self-taught

knowledge and engage in knowledge sharing between his teacher, friends, and classmates. He explains that,

> Well it's basically, it's taught me a lot about music. It's pretty much helped me through school, to like graduate and I've just learned a lot from Mr. [teacher] from everyone around here. Like you, you get a lot of friends and stuff, and you get like, you can teach other people stuff and they can teach you stuff and stuff like that.

His involvement in the rock program has also given him the opportunity to explore music recording, with the potential for him to record his own album.

When discussing his writing music, he explains that "It's sometimes with the band, and sometimes by myself, like I can sometimes just get ideas," […] "and I just like, I record them on my computer." Logan then elaborates that "Uh. I either do that or I just like remember like, for me, playing guitar I remember, I remember certain like patterns and I just like can just easy ... I don't like read music or anything, I never learned how..." This sort of resourcefulness is what leads to the aspects of Logan's musical life that have to do with his personal valuing of his musical involvement.

Multimodal meaning making

While Logan is extremely focused on his musical activities, specifically playing guitar and writing music, his way of speaking about his musical life provides an interesting insight into the fluid nature of how he musically interacts. When discussing when he watches videos, he indicated that he would often be strumming chords on an imaginary guitar. He states that "…like sometimes if I'm watching videos I'll do like this [indicates playing chords] and stuff.

Even his activities of writing music are not solitary, or as he notes that likes writing with other people, as they have "really good ideas and stuff like that and that's how I... I usually like write... I .. I'm not really like a person who writes by himself, I'm usually like better when I write with people." He has access to a variety of computer programs to help him compose, and with that combined with his interactions with his writing friends, as well as visceral way of diving into learning, his exhibits many aspects of being multimodally literate. While compared to some of the most multimodally

immersed innovative learners, Logan may seem to be highly invested in this area. However, it is possible that due to Logan's highly saturated involvement in a musical environment, where his goal is to be in a successful band and be famous, that his malleability to being a fully immersed multimodal learner is somewhat stunted. In focusing on breaking into the music industry and becoming "recognized," he has a very specific goal in mind, and may not take the opportunity to explore his existing multimodal literacies and ways of sense making to their fullest extent, compared perhaps to his other innovative learner compatriots.

Other emergent themes

As already discussed, Logan's descriptions of his musical life are peppered with mentions of his involvement with famous musicians, recording with them, being taught by a well-known musician, and how his writing of music is getting noticed by those in the music community. His strong sense of self and identity often shine through in his physical cues of excitement and pride when describing these social associations.

When asked about the impact of playing the guitar, Logan immediately stated that "Um... I think it's like, really like makes me really calm. So if I'm like stressed or something I just play guitar and I feel way better." The concept of emotional regulation through music is not new, and within this context, Logan is an ideal example of Erkkilä and Saarikallio's (2007) descriptions of musical activities as an inherent part of emotional regulation and self-expression. Logan continues that "Um, and like music is just like basically one of the reasons why I've gotten through school it's just like, it's something basically I need every day..."

5.13. Carter

Participant Name: Carter

Gender: Male

Age: 14 years old

Grade: 8

School Type: Secondary School

Top two musical activities: When asked about his top two most meaningful musical activities, Carter explained that he was involved in playing **Indian drums**, which were the most important and meaningful to him. Carter's secondary choice of musical activity was **listening to music.** He was involved with both drums and listening several times a week, and had been doing both activities for more than five years.

Carter is involved in a few of musical activities in his daily life, a majority of these activities occur both outside of school and within school contexts. Within Carter's interview, he described all of his musical activities, which included:

- Indian Drums
- Listening
- Video Game: Rock Band
- Drums

Carter is the youngest of the innovative learners, and while most of those identified as innovative learners were in Grade 11 or 12, younger music learners like Carter are also able exhibit all three interrelated areas of learning and innovation within the 21st century. However, his vocabulary in describing interrelated areas of the framework for innovative learners appears to be a bit more limited than his older counterparts. Additionally, his younger age may also be why we was only involved in four activities, rather than the six or more that many of the other innovative learners were involved in.

5.13.1. Carter: Interrelated areas of 21st century learning and innovation

While Carter's was a short interview, compared to other innovative learners, he still exhibited all three interrelated areas and many of the constructs associated with 21st learning and innovation.

Connecting

Carter's involvement in drumming was often something that would be fuelled by his social settings, in which his abilities in drumming became a part of school celebrations. His knowledge of Indian drums then gave him the opportunity to share playing the drums during cultural events. Carter explains that,

> Well, um, at my old school -- elementary. [School name] Elementary School, um, they had this Vaisakhi Day, and they wanted me to play the drums everyday, just to keep the crowd interested in what they -- what we were doing. And so finally, they wanted me to come back every year, so that's why -- that's what kept me interested and stuff, and so they helped me.

What is unique from the other innovative learners is that what keeps Carter involved is his interest in his Indian culture. He explains that:

> Okay, um, the thing that keeps me involved, like, I want to be really into my culture. I want to be, like, really religious also, and, um, Vaisakhi parades, I've been, like, all around the world, and play, like, in Vancouver and in USA, plus my team and stuff -- playing with them. That keeps me involved also, and my parents also, they're really good supporters.

While being involved more in his cultural and religious community is one aspect, he also broaches the support and involvement of his parents, as well as "like my elementary school really -- I was really, like, I was really tight with them and it helped." Carter does mention though that he is no longer as involved in his community, as:

> I don't keep in touch with them that much these days, 'cause at my old school, I was born there, I used to go there every day and stuff, and I knew, like, everybody there, but here, no, not so much, 'cause I wasn't born, like, around here. I wasn't, like, growing up in the same house . . .

When explaining what got him started listening to music, Carter's involvement with friends was the impetus:

> Well, I used to go to my, uh, friends house. He used to play a lot of rap music like 50 Cent. Things like that and he actually, like, he listened to it and said "I think you'll like it." And I loved it. I used to come to his house every day and love it.

Self-directed learning

Through his passion and interest for learning more about drums, Carter explains that what really got him started playing was connected with his efforts to learn more from his father.

> I think my dad just wanted me to actually, like -- he actually bought me the drums, because I wanted to, like, listen to it every day, 'cause I always keep on asking him what can I , like, okay, like, do this and stuff. So, he was keep on, like, getting the tape out for me and, like, so I could listen to it and I could copy it.

Carter exhibits many of the informal music learning practices that young people use to become musicians. He not only encountered music through his dad's drumming tapes, he was encultured through his cultural community and old school. He would also interact with his friends to learn about new music. Finally, through his own passion and interest, and often in his persistent pursuit of his father's knowledge or resources, he was able to engage in self-teaching in various capacities.

Within his music classes, Carter's teacher often gives out handouts for the students to learn, yet Carter goes beyond just using the handout, and will go home and find the music on YouTube, and listen for the relevant drumming parts, in an attempt to expand his learning. He is being resourceful in how he is learning, and thus applying personal value to his resourcefulness.

Multimodal meaning making

When asked, "What got you started playing the drums?" Carter answered, "I don't know. I think I was just bored one day and I just wanted to try it out, I guess." And that

he may have heard it somewhere before, in which is elaborates “I think I heard it, 'cause my dad had a bunch of tapes and I tried to want to copy it -- I think that's what it was.”

Carter is innovative in many ways, as he will go beyond just learning information within his music classroom. As noted, his teacher gives out handouts for the students to learn, yet Carter expands that: “I actually go home and I actually listen to it on YouTube and stuff, I actually, like, type it in, actually listen to the drum set in the background.” His use of multimodal technologies provides him with novel ways of learning, and seeking knowledge. Further, in using YouTube as his resource to learn the drumming sections, he is placing his sense of trust in the online authors of the videos to know how the song should sound. Carter also mentions “I listen to it and see what I can make of it, based on my mistakes, or something.” His learning is immersed in a multimodal format of literacy, and it is something that many innovative learners do intuitively, and without considering it something that is unusual. Having multimodal resources to create meaning, communicate, and learn is increasingly a part of 21st century digital living. It appears that using digital technologies are now an essential part of being a musical learning and listening to music. Carter’s iPod is the reason he says he continues to be involved in listening to music, likely due to the accessibility and portability. He even goes as far as to say he is addicted to it:

> Just having my iPod, I like to listen to it. I think I'm addicted to it! [chuckles] Definitely, I'm addicted to it. People ask me, like, why are you plugged in, and stuff. Like, I don't know, I'm just addicted to it. Like, listening to music. I love music.

Other emergent themes

In a sense, Carter’s interest in playing the drums as a way of becoming more involved in his culture, and becoming more religious, may also be a form of personal valuing of spiritual fulfilment. As Pitts (2005) notes that this can be a source of valuing of musical participation, it is worth noting that this was something that was evident in Carter.

Carter also describes the impact of being involved in the drums, in which he replied, “Being in the newspaper. I've been in the newspapers a lot with the drums. A

lot of times. Like five or six, seven - my dad has each of them, like every single newspaper I've been in." He continually comes back to the support and encouragement he receives from his parents, thus possibly alluding to his personal valuing of his social involvement, as well as the drums as a source of confirmation of his abilities, and his confidence. This is then echoed in his statement: "It gives me confidence and stuff to keep on trying, and trying, and trying, like, just keep on performing for other people." According to Pitts (2005), valuing rationales of performing for others, and demonstrating skills and knowledge, harken back to the ways that Carter is delving into his own learning.

> He goes on to discuss that performing has a certain value to it in helping him overcome nerves, as he says "Yeah it just keeps me comfortable with the public and performing, so I don't get nervous or stage fright."

5.14. Emergent themes

All of the 11 participants that were identified as innovative learners were well entrenched in many of the constructs that are represented in the broader area of connecting, though upon exploration of their case study vignettes, each participant was unique and diverse in their musical engagement. In interpreting the vignettes of each of the participants there were several themes that emerged, with many addressing the constructs found in the framework for innovative learners, as well as some that enhance the existing framework. To describe these emergent themes, this section will present a brief recap of the findings, and a discussion of what these emergent themes mean, in relation areas within the framework.

5.14.1. Connecting

Theme #1: Connectedness

As connecting is rooted in the systemic ecologies of an interconnected and digital society, innovative learners describe the social and cultural value of their involvement with their musical activities in terms of their own (in-person and virtual) community involvement as well as the support they receive from family and peers. Many of the

aspects of young innovative learners' musical activities are based in their social lives. Their musical activities provide the opportunity to be connected within their lives, both in-physical and virtual contexts. Many of the innovative learners were connecting with their musical activities both at home, as well as at school, as a part of how they interact, socialize, and expand on their opportunities for communication, expression, and learning. Participants such as Cooper described their involvement in friendships as a central part of their musical activities. Other main emergent themes within this area provide the context to better understand the role of technology, such as iPods, and the importance of musical listening, as key characteristics of young people's everyday musical lives.

It was apparent that musical activities were an important aspect of how many of the participants' socialize with their peers. Further, in considering how social and mobile technologies have shaped and transformed the very nature of connectedness, one participant described how even in the midst of having fun singing with her friends, "everyone has their iPod on," implying that even listening through headphones is a socially connected activity. This does present a potential limitation of the digital age, as this young woman described herself as quiet and shy without her musical activity in her life. It then becomes possible that with "everyone" being on their iPods enclosed within their musical world, that the use of headphones and a mobile device could in a way, hermetically seal young people into their own sound bubble. This may become an increasing concern for educators engaged in inclusive educational practices. Although the use of headphones may not deter a sense of connectedness with peers, community, and larger issues for some students, it may encourage solitary activities among other students that limit opportunities for connecting with others.

Theme #2: Connectedness and gender differences

Considering the digital divide among males and females (Jenkins, 2009; Rideout et al., 2003), this emergent theme holds particular importance for revealing a deeper understanding of gender within 21st century innovative learners. When looking at the types of involvement with technology that both males and females were engaging within their daily musical lives, it is apparent that both groups were increasingly using more advanced and social technologies and devices. While both females and males were

using mobile devices, YouTube, and a variety of other technologies as a part of their musical activities, there were some findings that emerged from the vignettes that may reveal possible gender differences, and the need for future research (e.g., while many females were using YouTube for watching music videos for listening purposes, or finding inspiration for their other musical activities, many of the males were using YouTube for more advanced forms of participation, such as creating and sharing their own musical creations (e.g., participatory cultures), or as a additional resource to composing).

In addition, within the vignettes of several of the female participants involved in many technological forms of musical activities, it became apparent that their involvement often involved some form of mentorship by their male peers, siblings, or father. Even though many females were technologically savvy, and took the initiative to research and learn new songs through online tutorials, many would rely on their male peers or family members for assistance. In the case of some female participants, even the action of accessing music from the Internet could prompt an interaction with a male counter-part or sibling to assist in the process. When looking at the discussions by the male participants, they rarely noted that they needed assistance in using technology, and never reported needing assistance or guidance from a female. These findings are congruent with the research of Garland and Zigler (1994) and Karcher and Lee (2002), where girls were found to be more involved in social behaviours for seeking help, or connecting with others when seeking knowledge involving technology. While participants that were exhibiting constructs associated with being an innovative learner were engaging in ways that were unlike their non-innovative peers, the role of gender, and a digital divide still surfaced among innovative female learners. This is possibly an indication that while young women are engaging in advanced technological processes, Jenkins' (2009) participation gap may still be evident.

Theme #3: Participatory cultures: Sharing and feedback

Based on the emergent themes as a part of this area, it was apparent that some participants were indeed sharing their creations via YouTube, and using the multimodal and interactive platform for receiving social feedback. One particular participant, who exhibited all three areas of being an innovative learner, described his experience with using YouTube and other social media as a platform to share his creations and receive

social feedback, and he was engaging in these sorts of activities in meaningful ways to his musical life.

Through posting song covers on YouTube, Max was using this forum for sharing his creations as a way to receive feedback and responses on his work, in precisely ways that align with Jenkins' (2009) descriptions of participatory cultures and affinity spaces. Further, Max's posting of his creations on Facebook would also afford a connectedness to his digital community (be it with strangers across the globe, or with friends and family within his own neighbourhood). Max's musical learning was no longer a model of one-on-one (e.g., teacher and student) but a many-to-many or crowd-sourced model, where sharing and feedback were direct components of his musical activities. As Jenkins (2009) describes young people's involvement in participatory cultures as one of the emerging aspects of our increasingly interconnected world, it was not unexpected that young people who exhibited all three areas would be more likely to be involved in these interactive and multimodal digital activities. The concept of sharing musical creations, and receiving feedback online is something that not only demonstrates the complex and changing abilities of our technological age and how these affinity spaces can provide new forums for learning, but it also gives insight into the ways that these types of learners are seeking interconnected feedback to fuel their musical endeavours. Implications for educators from these forms of participatory cultures in musical learning lead to a changing definition of what it is to be musically knowledgeable and connected, and thus challenges educators to understand and consider how to best incorporate these novel ways of learning into their classrooms.

5.14.2. Self-directed learning

Theme #4: Self regulation and an initiative to learn

A key aspect of the constructs in the area of self-directed learning includes young people seeking and acquiring musical skills and showing genuine initiative. They appear to be propelled by their interest to learn, "with or without the help of others," to assess and evaluate their learning needs and outcomes, and to go forth and implement these strategies in personally relevant ways of learning (Knowles, as cited in Wulff, Hanor, & Bulik, 2001, p. 153). This form of learning occurs outside of formal curriculum or

education, in which they look beyond their teachers for role models, musical skills, and inspiration to learn or play. As shown through the case studies, innovative learners were engaging in complex ways of searching for and learning musical skills and knowledge, and further, they were looking to role models for peer-based assistance in learning. One of the most common occurrences of self-regulation across all of the participants, but especially among the eleven innovative learners, was their interest and initiative in discovering new music, artists, and musical styles, as a way of learning or building upon their musical knowledge. Further, many of the participants sought out musical resources (e.g., YouTube videos or music) or interactions with others (e.g., other musical peers or feedback from others online), to build on their skills, and they used these new resources as a form of inspiration to learn.

Young people's use of multimodal resources to engage in finding inspiration or ideas for musical creations describes an innovative and non-traditional way of seeking knowledge. As discussed in numerous quotations throughout this chapter, the role of technology has unquestionably transformed how young people seek and acquire their musical skills. The role of YouTube on young people's roster of musical resources is without a doubt a large influence, as many participants described their use of YouTube not only to watch or listen to music, but also as a resource to seek musical knowledge. From this, they have the opportunity to inquire from a larger community beyond their local area, and finally have the opportunity to share their musical creations in the hopes of receiving feedback and mentorship. This sort of initiative to learn, propelled through such a social technology has provided young people with something no other generation has seen (e.g., Prensky, 2006).

Theme #5: Informal music learning practices

As discussed in Chapter 2, Green's four components of informal music learning practices are 1) encountering, 2) enculturation, 3) interaction, and 4) self-teaching. Upon analysis of the participant interviews, the concept of *Encountering* knowledge and practices outside of a formal educational setting was evident. More specifically, the location for a majority of young people's involvement in their musical activities either occurred outside of school settings, or as a combination of outside of school and at school contexts. The findings present the case that much of young people's musical

involvement is encountered outside of school walls, or within informal contexts during school time. With some musical involvement during school time, many of the participants would elaborate that the actual exploration of musical activities or involvement would occur once they were at home, or outside of school contexts. Further, as seen in the vignettes, *enculturation* was an inherent aspect of young people's daily musical lives. Many of the young people within this study reported that they began their musical activity due to being given a musical instrument by a family member. The participants also reported on many occasions that listening and/or watching music often occurred in a social context (e.g., with friends outside of school time), and thus their *interaction* with their peers, family, and others who are not acting as teachers in formal capacities, was a main component of their social contexts.

Each of the 11 participants that exhibited all three areas of being an innovative learner would be considered involved in Green's (2007) informal music learning practices. However, it could be argued that these participants went above and beyond simply informal learning and expressed a much deeper involvement in the area of how they were learning and engaging musically through highly interactive and technological forms of informal learning. Social interactions with people online went beyond enculturation, as young people like Cindy were not limited to their geographical borders or communities. Peer-to-peer learning has transformed how young people learn, making it possible for innovative learners to take on new roles in their own self-teaching, as well as being mentors and learners simultaneously (regardless of the scope of their musical knowledge).

5.14.3. Multimodal meaning making

Finally, in the last area of multimodal meaning making, the technologically infused nature of modern society has afforded many multimodal ways of communicating, expressing, and making meaning, and through that, the question of whether multimodality is a central aspect to the innovative learners' musical lives is at hand. As multimodal meaning making was the least exhibited area among all 93 participants, with only 24.7% of the participants exhibiting aspects of the area and its constructs, many of

the participants that did not exhibit this area provided a unique insight into the differences between those that exhibit multimodality compared to those that do not.

Of the 11 participants, as seen in their case studies, the multimodality within their musical activities was imbued with a continual influence of social and digital technologies. Through these 11 teenagers' descriptions of their musical lives, as well as in the descriptions from many of the participants that were not identified as innovative learners, the multimodal nature of our current technologically-inundated world is evident; technology has transformed how young people describe their musical lives, as well as how they utilize their digital devices and resources.

Theme #6: Multimodal literacies

The terms used to describe the act of listening to music has traditionally been the verb "to listen," in which the use of the ears to receive the sounds of music was considered the only way to be involved in musical sound. In this study, regardless of young people's involvement in multimodal meaning making, the terms *watch* and *listen* were used interchangeably in many participants' descriptions of listening to music. The multimodal resource of visual watching of music was commonly discussed when describing watching music on television, watching a song on YouTube, watching an iPod to better understand a piece of music, or a variety of other uses of the term "watch" interchanged with where "listen" would be traditionally inserted. Statements described using their iPod or YouTube as a way to listen, watch, or be involved in music when not directly playing. The description of musical listening was no longer limited to the modal resource of audio or sound, with participants' referring to both listen and watch interchangeably. For example, Max recalled in one sentence that he used to listen to music, and watch music on TV, seemingly without any awareness of his terminology usage.

Even beyond listening to music, their other activities, such as composing were not limited to the traditional mode of pencil and paper; rather many students incorporated various forms of digital media as inherent parts of their composition/writing process. The ways that multimodal technologies are immersed within young people's lives have transformed how they discuss music. The changing terminology and

definitions of music, as transformed by the multimodal ways of discussing the modes of being involved in musical listening or activities, presents a new landscape for educators, researchers and parents.

Theme #7: Multimodal musical resources

Based on the digitally infused nature of young people, it might have been expected that participants who were identified as innovative learners may be involved in more complex or more types of technology. However, as indicated in Chapter 4, there were few differences in the types of technologies all participants were engaging in. Based on this finding, it provides an opportunity to discuss how innovative learners find a way to go beyond traditional resources and expand on their meaning making. Their initial noting of using of technology did not appear to be any different from their peers. Indeed, it was not the types of technology they were using that differed; rather, it was the innovative ways they were using it. Innovative learners not only provided complex descriptions of their musical lives, and were involved in various forms of multimodal meaning making, they exhibited often unique ways of interacting with and using these devices and technologies in their daily lives. Innovative learners were deeply immersed, and were beginning to use these devices and technologies beyond what they were created for, in resourceful and novel ways (e.g., Cooper's innovative resourcefulness in repurposing technologies). This characteristic of resourcefulness, and advanced multimodal literacies, in the area of multimodal meaning making is a construct that was one of the most distinctive features that emerged from the accounts of innovative learners, in which their multimodal world was only the beginning of how their navigated and explored their musical lives.

Participants that didn't exhibit this particular area did not seem to present or discuss using musical instruments or technology as unique musical resources, even if they were involved in a variety of technologies and used many types of digital devices or forums. One of the participants, J.D., exhibited two areas, except for multimodal meaning making. Even though at the outset of reading his interview, he was using a laptop with recording equipment, an iPod, GarageBand, and iTunes to listen and practice music — the use of technology did not identify him as exhibiting aspects of multimodal meaning making. J.D.'s usage of digital technologies was not addressing

multimodal meaning making, as each technological activity was utilitarian and focused on the one activity, or purpose. He would discuss the use of these technologies as functional, yet they were not a central part of his musical life and he didn't seem to necessarily require the technological advances of the 21st century to be involved in musical learning.

5.14.4. Other emergent themes

Theme #8: Identity (and confidence)

One of the most common descriptions of the participants' musical lives highlighted how these young people were attempting to shape their sense of what their engagement in musical activities means to be them, and moreover how music relates to aspects of their identity. The centrality of music within young people's lives is often conveyed in very concrete terms, as seen in statements such as **"**Playing just seems to ... I can't go a day without really playing something, it's like music is 100% me." As with many of the participants, the use of a percentage or number to describe the impact of music on their life was common. Many emphasised that music is important to them, and enriches their life and well-being, and went on to describe how music is engrained even in their involvement in other activities.

The themes that emerged from many of the participants' vignettes, as well as from the larger interview study, was that of personal value being placed on musical activities as a way to foster or build confidence, specifically when talking about their sense of identity. Finally, many of the innovative learners described their musical activities as essential to their life, and a way for them to tap into their resiliency as a musician, and as a person; where having the ability to take on initiative to navigate their musical lives was something that was personally meaningful. After any length of reading and interpreting the innovative learners' vignettes, there is little ambiguity in how they portray the role of music in their life – it is essential, and provides them with the capacity to act on their own initiative, and regulate their sense of self, mood, and emotions.

Theme #9: Emotional expression (and regulation)

As has been documented within the literature (e.g., Ansdell & DeNora, 2012; Erkkilä & Saarikallio, 2007; North, Hargreaves, & O'Neill, 2000), music has the capacity for emotional regulation, expression, and well-being. Most of the participants noted some level of emotional influence from their musical involvement, though some only focused in their listening to music as a form of stress relief. Among the 11 innovative learners, their descriptions of emotional expression, regulation, or exploration were often related to their engagement in musical activities, such as a part of their composing or playing of their instrument. Innovative learners often provided more elaborate and deeper descriptions, thereby showing a greater awareness of the role of emotional expression and regulation in relation to their musical engagement.

5.15. Findings: Case study vignette summary

While 24.7% of the young people did not expressly exhibit any of the areas explicitly, this finding is somewhat expected. As the youth were not asked directly about each of these areas, constructs, or research questions, nor were they asked specifically about their in-depth technology usage, there may have been potential participants that would have exhibited aspects of these areas, if they had been explicitly asked about them. In addition, while only 24.7% of the young people exhibited aspects of *multimodal meaning making*, I posit that this is due to the lack of explicit questioning around this area and its constructs, and further, that many of the respondents didn't realize that certain technological or multimodal activities could be considered musical activities.

The multimodal literacies that youth are using to learn and explore music is only the first part of the changing definition of being musically knowledgeable, as this digital age has also opened up a variety of possibilities for musical expression within the classroom. Based on the saturation of multimodal resources within young people's lives, it would seem credible that music education will need to find a way to keep up.

In regards to technology usage among innovative leaners, there was not a significant difference in the types of technology they reported using, though if the participants were explicitly asked in detail about all their technology usage, there may

have been a difference. For the purposes of this study though, imposing this sort of intensive and guided questioning would not have enabled the participants to describe their musical engagement from their own perspective. The use of various technologies was evident across many of the different participants, with many of participants reporting the use of a variety of digital technologies like iPods, music video games, and laptops/computers. Participants that exhibited all three areas did have much more elaborate explanations about their technology usage (e.g., explaining in several sentences interconnecting their musical activities with other aspects of their life), compared to the non-innovative learner participants, and upon analysis of all the technologies mentioned within their interviews, one noteworthy difference was found. Of the participants that used YouTube for musical creations, sharing or discovery, those that exhibited all three areas were more likely to be involved in this multimodal form of meaning making.

The diverse socio-cultural and linguistic contexts that emerged from activities spontaneously mentioned in the musical engagement interviews led to an investigation of youth daily musical activities and digital media convergence. One of the most relevant findings from these interviews, in relationship to technology and musical activity involvement was that **all** the students noted they listened to music in one form or another, with a majority of listening occurring on a combination of iPods, Laptops and old media (e.g., Radio or Stereo). This is an important concept to consider when going forward with the exploration of these young people's musical lives, and how they differ from previous generations of learners. Mobile technologies are a central aspect of young people's musical activities and available resources that due to their novelty and ubiquity for this current generation of learners, provide a daily experience with technology and music unlike any other generation before them. Thus, it provides the impetus and justification to this study's investigation of what innovative learners look like within their musical lives, and how these novel resources of mobile and social media are now an inherent aspect within young people's daily lives, that has transformed how they interact, learn, and communicate.

The eleven participants that exhibited components of all three areas of being an innovative learner are unlike any other type of musical learner discussed in the literature. These young people's immersion in all three areas of *connecting*, *self-directed learning*,

and *multimodal meaning making*, as well as the emergent themes, provided them with the opportunity to become musical learners in ways that no other generation has ever seen. Vignettes such as Cooper's provide an in-depth insight into the fluid and deeply interconnected ways that 21st century evolving technologies, available at young people's fingertips, have transformed young people's musical engagement. Cooper was resourceful in his search for expanding his musical knowledge and skills, yet propelled by the affordances of multimodal digital technologies (e.g., his sister's iPod, his music videogame, and other resources), he was able to create a musical creation that didn't primarily employ traditional musical instruments. Rather, Cooper's resiliency in finding ways to be musical became possible, and were expanded, through what he had available to him, and what he chose to use, regardless of the resource's intended use. The examples of the innovative learners within the case studies provide a unique exploration of the intricate and diverse ways that young people are musically connecting, learning via self-directed means, and multimodally making meaning within their daily lives, both inside and outside classroom walls.

Through better understanding these innovative learners and their descriptions of their digital infused musical lives, it may be possible to use these interrelated areas, and their applicable constructs, as a frame of reference to identifying and creating new learning opportunities for innovative learners to reach their full potential within contemporary musical landscapes. As will be discussed in Chapter 6, the emergence of the innovative learner has presented a plethora of future questions for research, such as these emergent themes, as well as given way to a number of implications for educational practice.

Chapter 6.

Conclusion

Within this research, we find many examples directly from young people themselves to help us better understand the changing nature of learning and innovation related to engaging in musical activities in the current day. These illuminating examples are structured under each of the the six key constructs associated with innovative learners, which are situated within the three following interrelated areas, that align with 21st century frameworks of learning and innovation (Alberta Education, 2011; C21 Canada, 2012; Ontario Public School Boards' Association, 2013). These examples and the constructs were considered within a proposed framework for innovative learners focus on how young people are *connecting, self-directed learning,* and *multimodally making meaning* within their daily musical lives.

The proposed framework was constructed around the most relevant literature and the constructs that feature prominently in current literature on 21st century learning and innovation as a way to establish an initial foundation for the research. The interrelated and broad areas that provided the structure for this framework are highly fluid and interconnected; therefore, it was expected that additional themes or constructs would emerge through this initial exploratory research. Upon interpretation of the findings, it was apparent that through the statements of the participants, some of the areas, and corresponding constructs, could be expanded upon. Thus, there is room to investigate building upon this framework for future research, as will be discussed further below.

While each of the 11 participants that were identified as innovative learners exhibited aspects of each of the interrelated and broad areas, their depth of engagement within each of constructs varied between each of the music learners. The framework was not used to determine an exact "type" of innovative learner; rather, the aim was to

identify young people who were exhibiting aspects of all three areas based on the proposed framework. Further elaboration and revisions to the framework could then be undertaken to incorporate any emergent themes that manifest from the interpretations of the interviews.

In light of what was found, the sorts of changes to the constructs could include considering the emergent themes as potential complements, or expansion of the definitions and theoretical basis for these constructs and their overarching areas. As the interviews drew upon the young people's perspectives and wording, the sorts of statements that were made by the youth could be considered what they perceived to be important, relevant and meaningful to them, in telling their story about their musical engagement. Within the emergent themes, it was apparent that the notion of identity and confidence were tied to many of the participants personal valuing of their musical identity. In addition, many participants described a sense of resourcefulness that was relevant and meaningful to them, that emerged from their musical engagement. Emerging themes such as these may provide further ways to expand the proposed exploratory framework proposed in this study to better understand innovative learners in this digital age. For example, Figure 6.1 provides additional context to the framework based on the emergent themes that arose within the findings by adding a possible area of *personal valuing* of musical participation, along with *identity* and *emotional expression*, as potential associated constructs.

Figure 6.1. Possible revised framework for understanding innovative learners

6.1.1. Possible additional area and associated constructs

Based on the emergent themes from the vignettes of the innovative learners, it is possible that there could be additional constructs situated within another area, such as *personal valuing*, which is a broad and diverse area containing a wealth of research that holds numerous perspectives. The main focus of interest here is how 21st century learners are engaging in expression, communication, and learning that are personally relevant. The ways that young people describe their musical lives gives us a sense of the worth, merit, and importance they place on engaging in musical activities. The

constructs proposed for this potential area of 21st learning are unlike the other areas discussed as they represent what is personally meaningful to youth themselves, and affordances and opportunities they experience when engaged in music in ways that are transformative. While not definitive constructs, this section is presented as a way to commence the discussion of building upon the existing framework to better encompass all the interrelated of innovative learners. Particular themes emerged within the interviews that were not included in the initial framework based on the existing theories and frameworks for 21st century learning and innovation. It is plausible that while these emerging themes could become their own constructs, and in turn be a part of a larger area, it is of note that these potential constructs may be better suited to the existing interrelated areas already defined within the framework.

O'Neill (in press-a) explains that music learners take on active roles in the construction of their "knowledge, meaning and identities" (p. 9), and goes on to concur with Pitts (2005), that music learners are active constructors of the values within their musical lives and communities. A key aspect of the constructs that fall within this area of personal valuing is that they enable youth to engage in what O'Neill (2012a, 2012b, in press-a) calls transformative music engagement. O'Neill (in press-a) states that transformative engagement occurs when music learners:

> reflect critically on their values and make conscious efforts to plan and implement actions that bring about new "trails" or "entanglements" that are capable of transforming themselves, others, and their community in relation to the diverse music activities and music learning experiences they encounter. (p. 12)

Considering the importance of young people reflecting on their values, as a part of the "diverse music activities" and "learning experiences they encounter" (O'Neill, in press-a, p. 12), two key constructs relating to transformative music engagement are of interest here in that they reveal the scope of young people's personal valuing, and how it shapes their musical lives: 1) identity and 2) emotional expression (see Figure 6.1). These constructs are rooted in the role of personal valuing in youth engagement research, though the literature is quite vast and the connections between these two concepts and notions of personal valuing are not always explicit in the literature. Some researchers focus on the interrelations of engagement, motivation, and youth voice (Toshalis & Nakkula, 2012). Whereas, others address the sheer scale of the concept, in

saying that “there are several types/categories of engagement – academic, cognitive, intellectual, institutional, emotional, behavioural, social, psychological, to name a few” (Parsons & Taylor, 2011, p. 3). Parsons and Taylor (2011) go on to describe student engagement as historically about “increasing achievement, positive behaviours, and a sense of belonging in all students” (p. 3). Within each of these perspectives, there is a common thread that binds them, which is found in Furrer and Skinner’s (2003) explanation of engagement in learning as “active, goal-directed, flexible, constructive, persistent, focused interactions with the social and physical environments” (p. 149). From this, it is evident that engagement in learning is primarily centered on young people’s active learning and valuing of their interactions, rather than simply their motivation to learn, which is why the term *personal valuing* is being used.

The existing interrelated areas of the framework for innovative learners already include the notion of development of musical skills, knowledge, and a sense of self, as seen in self-directed learning, along with multimodal meaning making accommodating young people’s active engagement in their technologically interconnected musical lives. Based on this, it bears consideration that the emerging themes could potentially be incorporated into the definitions of existing overarching areas, rather than creating a new area altogether, though for the purposes of clarity, and the need of further investigation, they are separated for the time being.

Young people are active agents in their construction of their own musical knowledge and development (O’Neill, 2005), and their active music learning is firmly embedded in their personal sense of musical valuing. Young people, specifically music learners, have opportunities for autonomy, motivation, and initiative to learn, the capacity for well-being and personal valuing or belief in their abilities, and empowerment, and moreover, their musical lives are drastically different than any previous generation through the affordances of technology (O’Neill, 2012a). In considering the affordances of new technologies in relation to young people’s engagement in musical activities, this section briefly considers two emergent themes of young people’s personal valuing of music (identity and emotional expression) that emerged from the findings, and as potential additional constructs for future research, in relation to young people’s active involvement in music learning and transformative music engagement in a digital age.

Pitts' (2005) describes that young people value their musical participation, "as a way of enhancing everyday life" (p. 10). Young people like Cooper, are describing music and their musical life as almost life sustaining — as a central part of the person he is, and a way for him to be empowered and resourceful within his daily life. In many of his descriptions of his musical life, he portrays and values his musical participation as essential. He elucidates, "I can't survive without it. […] It's my lifeline basically." These sorts of statements build upon the previous discussions around identity, and how young people value their musical participation to shape it. Further, the concept of enhancing their everyday life extends to valuing taking the initiative to use their knowledge or skills in musical activities as a way to build on their other activities in their life, be it at school, or at home. This is concurrent with the role of positive youth development that Larson (2000) describes, where it is the process of young people having the capacity for initiative, and to be motivated by the challenge as a form of active engagement in their development (Larson, 2006). These sorts of findings are at time evocative of the area of self-directed learning, in the respect that these emergent themes are rooted in the young people's capacity to take initiative and use their musical involvement as a tool to expanding their learning, regardless of external influences.

Among the innovative learner participants, the role of their musical activities went above and beyond a tool to assist in concentrating while learning another activity, or to assist in focusing on a difficult task. More exactly, the interconnected ways that these young people described their musical activities provided insight into how their musical activities were not just a compliment to their other school or learning activities, rather an inherent essential part, in which they relied on their participation in music as a way to assist in cultivating their capacities for resiliency. This reiterates the other emerging themes in the area, such as their valuing of music as way to foster resourcefulness and well-being. Due to this interconnected nature of their descriptions of their musical lives, these participants didn't specifically speak in the terms of sole functionality or extrinsic utility. For many of the participants, their musical lives are an essential part of their survival and navigating what Larson (2011) describes as the complex and fluid world of being young people in the 21st century. Thus, it contributes to their valuing of their musical participation in helping them construct their sense of identity, and fostering their capacity for taking control of and regulating their emotional expression and well-being.

These particular themes are of particular importance to these innovative learners, as it appears to be how they shape their sense of self, and place in their technologically evolving world. Deeper investigations into the ways that young people are constructing and shaping their identity, and emotional expression and well-being, as a part of the framework for innovative learners, could provide further insight into better understanding and identifying these innovative learners.

6.2. Bigger picture: Building upon existing theory and research

The findings demonstrate that there are young people exhibiting aspects of innovative learning in music education that are unlike other music learners. These young people who are situated in all three areas of the proposed framework for innovative learners, were seen to be delving into interconnected and technologically infused forms of connecting, self-directed learning, and multimodally making meaning within their daily musical lives. These forms of engagement are unique to the affordances provided by 21st century technologies and the evolution of digital and social media within our contemporary society. The innovative learners within this study describe their musical lives in complex and interconnected ways, in which the fluid and interrelated areas of 21st century learning and innovation are an inherent aspect of their descriptions of their musical lives. These findings support and build upon the existing theory and research.

6.2.1. Connecting: Building upon existing theory and research

Investigations within an OECD report (2012) demonstrated that through the technological innovations of the digital age, connectedness has an impact on all of everyday human life, in which it offers the "ability to be connected and seizing the opportunities that connectedness offers" (OECD, 2012, p. 15). As technology is rooted in young people's social and cultural practices, the ways that they are communicating and learning are unlike any generation before. Further, the role of music within their connectivity has been transformed by this digital age. This current study builds upon this

existing research on connectedness, and provides a lens into the influence and implications of music within young people's connected lives.

Jenkins' (2009) research into participatory cultures describes the interactive and participatory ways that young people are communicating, learning and interacting within their in-person and virtual environments. The research goes on to describe the new forums for communication and learning, called affinity spaces (Gee, 2003), in where connecting with others is no longer a solitary action tied by geographical limits, enabled by crowd-sourced learning and limited barriers to artistic creation. This new generation is able to create and share their musical creations with ease, though the current discussions focus on young people as a whole or in non-musical contexts. As there is little focus in this area of the research on musical learners themselves, or the participatory and technological ways they are engaging in their daily musical lives, and building on participatory cultures for their own musical purposes, this thesis seeks to expand upon, and help bridge the gap within the literature and practice.

6.2.2. Self-directed learning: Building upon existing theory and research

McPherson and Renwick's (2011) research looked at the non-formalized ways that young people were acquiring musical knowledge and skills, where they are developing their own ways of practicing and learning, and actively seek out mentorship or knowledge from others. Their particular study addressed self-regulation as a construct of how young people are musically learning, but did not attend to the technologically-infused aspects of young people's musical learning. The current study builds upon this existing theory and research to better understand the extent to which innovative learners are engaging in self-regulation in complex and diverse ways.

The research of Green (2007) into informal music learning practices provided deep insight into the informal ways that young musicians are learning musical skills and knowledge outside of school contexts. That research maintained a focus on active musicians, without considering young people who do not consider themselves musicians, or even as learning musical skills. As the interactive nature of current forms of technology, such as YouTube, make it possible for young people of any or no musical

background to create, remix, and share their musical and artistic creations with ease, the concept of what it is to be musically knowledgeable in the 21st century has changed. This current study helps highlight the initial extent of what young people are musically doing both outside of school, as well as the technological components that have now emerged as part of within school and curriculum contexts, or in the emergence of innovative learners as a whole.

6.2.3. Multimodal meaning making: Building upon existing theory and research

The research of Kress and Van Leeuwen (2001) provide the framework for how multimodality goes beyond language and textual literacies, and through the various semiotic modes, provides a place for meaning making to occur. While Kress (2010) describes this meaning making as socially and culturally made up of multimodal resources that consist of "images, writing, layout, music, gesture, speech, moving image, soundtrack and 3D objects (p. 79), some research (e.g., Halverson, 2010; Yamada-Rice, 2010) demonstrates that there is a disproportionate focus on the modal resources of image, moving image and 3D objects. This disproportionate focus on visually related modal resources then creates a gap in the research around the role of music within multimodal meaning, and further how technologically-apt innovative learners may be engaging in multimodal meaning making within their musical lives.

Prensky (2001) was the first to utilize the terms "digital native" and "digital immigrant," to denote the gap between generations in their technological literacies. Yet, since then, the digital divide (Jenkins, 2009) has only grown, as the sheer speed of technological progressions has what I posit, has exponentially grown. When considering that Internet access is now universal in Canada, and that for Canadian youth "portable devices are used more than desktop computers to access the Internet" (Steeves, 2014, p. 2), the digital landscape has even changed since the introduction of Prensky's terms. This leads to the current study, and how the findings demonstrated a novel description of young people's technological lives, with music at its core, and from that possibly another form of learner, the innovative learner, that goes beyond simply being a "digital native" growing up in a technologically-infused society. This study then aims to extend the

theoretical lens, if only in an exploratory fashion, on the existing theory on what music education and musical learning look like in the 21st century.

6.3. Innovative learners versus simply just musically engaged

Within the data there were several participants that based on initial consideration (before coding) were thought to be innovative learners, due to their deep engagement with their musical lives, and passion for musical learning. It became apparent upon analysis, that while some of these participants could be considered deeply invested musical learners, and exhibited some of the constructs within particular areas — they were *not* in fact innovative learners. This realization provides a unique perspective into how these innovative learners have transformed their place in music education, in which they are unlike any other musical learner that music education has contended. In Chapter 5, it was noted that J.D. initially demonstrated aspects of the three areas that could have been placed him in the category of being an innovative learner. Though upon further analysis, he did not exhibit aspects all three areas, and rather was a wonderful example of being an excellent musician and deeply engaged in his musical life both within school and outside school, with access to technological resources. This example demonstrates that having access to technology and multimodal resources, in addition to being a passionate musical learner does not automatically equate being an innovative learner. Further it shows how just having the tools for multimodal meaning making doesn't denote actual immersion in that particular area, or the related constructs. The example of J.D. focuses more on his ways of connectedness, and self-directed learning, without a real investment in multimodal meaning making, thus illuminates how there is something uniquely specific about the young people that exhibit all three areas and the corresponding constructs, where traditional music education is only a small part of their musical learning. The area of multimodal meaning making is something that is explicitly novel to the current generation of young music learners, in where the affordances of technology have transformed the ways that they interact, connect, and communicate within their everyday lives. While previous generations had access to multimodal resources, it is with the emergence of intuitive and interconnected forms of media, that the discrete separations between modal resources become blurred, and thus

lead to a fluid notion of multimodality that is difficult, and at times nearly impossible, to separate.

I am not positing within this research that all young people need to become innovative learners, and become fully entrenched in all three interrelated and broad areas. While the proposed framework for innovative learners aligns with Canadian frameworks of 21st century learning and innovation (Alberta Education, 2011; C21 Canada, 2012; Ontario Public School Boards' Association, 2013), and contains many of the constructs, or rather competencies that can be found in these educationally-focused reports and research, there are affordances and constraints in attempting to cultivate innovative learners. It is not necessary for all students to be engaged in all three interrelated areas, rather it is important to understand how young people are musically engaging in their technology-infused lives, to what extent they are exhibiting areas of the framework for innovative learners, and this musical engagement looks like from the perspective and words of the youth themselves. As through this, it may be possible to expand on this framework as a resource for educators, researchers, and policy makers to be able to identify and create new learning opportunities for young music learners to reach their full potential to draw upon the areas and constructs associated with innovative learners growing up in today's digitally infused age.

Each of the contemporary Canadian frameworks focus on many positive aspects for future generations of learners and their 21st century curriculum, such as fostering an entrepreneurial spirit, preparing learners for success in the 21st century workforce and competitiveness in the global market, including social progress (C21 Canada, 2012), as well as providing clearly defined goals and outcomes for competencies and skills. Each of the frameworks appears to draw upon similar resources, and mission goals, with the C21 Canada (2012) *Shifting Minds* report providing the guiding principles that many other frameworks (e.g., Alberta Education, 2011) draw upon. Yet, these frameworks are honed to a generalized focus, of educational as a whole, in where if music is mentioned at all, music and other artistic activities are concentrated on the outcomes for other competencies (e.g., as an addendum to literacy competencies). And in many cases, skills like literacy and core subjects will include numeracy, language, or technological cultural STEM literacy, but music is not mentioned, and notion of the arts as an amalgamated whole is only an add-on. The language used in much of the literature

surrounding 21st century learning and innovation remains somewhat limited in its acceptance and incorporation of music, as well as the rest of the arts, which is why a framework that encompasses and is cognizant of music is needed, and essential for music educators, policy makers, and researchers.

6.4. Troubleshooting assumptions

One of the main tenets to this exploratory research, which aims to better understand what innovative learners look like in the 21st century, is that technology and digital media are central and interwoven aspects of young people's everyday lives, communication, expression, representation, and learning. Being "connected" in today's digital age is something that underpins many of the reports on 21st century learners, both in Canada and the United States (e.g., OECD, 2012), yet one of the assumptions of many of these educationally focused reports is on the using these frameworks for learning and education, to address the key competencies and outcomes (e.g., literacy, numeracy), as "essential for students to become engaged thinkers and ethical citizens with an entrepreneurial spirit" (Alberta Education, 2011, p. 2). The C21 Canada (2012) report describes that "the primary reason that education systems exist is to meet the learning needs of students," yet this discussion also is heavily laden around the notion of Canadian education contributing to "economic competitiveness and social progress" (p. 7). The inculcation of educational aims as a means to fostering entrepreneurial spirit, through the lens "highly creative and innovative people" as the "drivers of the 21st century" at the outset delivers a wonderfully succinct, and almost utopian goal. It appears that these goals and outcomes are envisioned for adoption by educational policy makers, provincial leaders, and curriculum designers, as seen in the 21st century learning frameworks in Alberta, Ontario, and Canada-wide (e.g., Alberta Education, 2011; C21 Canada, 2012; Ontario Public School Boards' Association, 2013). Yet, when considering the language that is used to describe these new models for learning in the digital age, there seems to be an impulse to tie creativity and innovation to mindsets furthering the next generation of learners to be prepared for the creative workforce, to contribute to global economic progress. While this is a worthy objective, that proposes to address the contemporary needs of 21st pedagogy, it is worthwhile to consider that the terminology and mission statements of many of these frameworks for education may

be biased specifically towards these sorts of goals and outcomes. Thus, emerging curriculum and content may be skewed to this language, due to the prevalence within many reports, and confident endorsements by head authorities of provincial school districts (e.g., Ontario Public School Boards' Association, 2012), and subsequent adoption (e.g., Ontario Public School Boards' Association, 2013). This is compounded in its scope, as frameworks such as C21 Canada (2012) aim to "cast a learning vision for governments, jurisdictions, school boards and education leaders, while engaging local and public support in achieving shared learning goals" (p. 5). I speculate that it seems somewhat of a lofty investment into re-envisioning all of a province's entire educational goals to address the needs of the 21st century, when there is still about 90% of the 21st century remaining to evolve with the technological progressions of current society (e.g., at the time of C21 Canada (2012), there was still 88 years remaining in this century to define *21st century skills*).

This sort of saturation within these 21st century educational frameworks places such focus on technological competencies and literacies with a focus on the frameworks over the learners' contexts themselves. Loveless and Williamson (2013) broach the need to focus more on the learners themselves. Loveless and Williamson (2013) note that, as "learner identities are being re-thought, reimagined, and reshaped at a time when many aspects of socio-economic, political, and cultural existence are themselves being influenced and relation to technological change" (p. 11). Considering this evolving landscape for learning within a technological age in the contexts of music, O'Neill (in press-b) goes on to detail that,

> When young musicians reflect critically on their values and make conscious efforts to plan and implement actions that bring about new ways of viewing themselves, others, and their world in relation to music activities, they are actively constructing their musical selves. (p. 10)

Building from this, O'Neill (in press-b) describes how young people's musical selves, and in turn musical worlds, are "sometimes found, sometimes forged, and sometimes forced while still appearing to act in the name of individual autonomy and agency" (p. 10). This is an important point, as through young people's navigation of their musical selves through various personal interests, social situations, and environmental

contexts, they “go about ‘making up’ their musical selves within the unique configuration of the musical worlds they inhabit” (p. 10)

With the accumulation over the past few years, of the literature, educational reports, and in turn curriculum all focused on 21st century digital skills and competencies, O’Neill (in press-b) notes that these young people are “being encouraged to think of themselves as the ‘digital generation’ immersed in ‘social networks’ and ‘participatory media cultures,’ and to act and aspire to ‘connected learning,’ ‘peer-based learning,’ and ‘do it yourself learning.’” (p. 13). Yet, this may lead to a discourse of inevitability, in which Loveless and Williamson (2013) describe young people’s sense of self and identity as “being-assembled-together” (Rose, 1996, p. 171, as cited in Loveless & Williamson, p. 22), and “shaped around a constellation of web-like terms and concepts” (Loveless & Williamson, 2013, p. 22). Loveless and Williamson (2013) warn that “their very ‘human agency’ is itself fabricated and inscribed in terms of free choice and self-actualization” (p. 23). Through this barrage of finely tuned terms and concepts founded in this technological age, “it appears as though many young people are coming to recognize, identify and relate to themselves in such images and assumptions” (Loveless & Williamson, 2013, p. 23).

Just as various authorities within the field, with their own underlying perspectives and agendas, have constructed frameworks for 21st century learning, with specific terminology and messages that target young innovative and creative learners, the language being used within young people’s lives seems to be prompting them to shape their sense of learning identities around these technologically-minded vocabularies, and becomes a part of young people’s empowerment in their musical lives. O’Neill (in press-b) describes this as how “transformative engaged agency or active and purposeful engagement, especially involving digital technology, is empowering some young musicians to navigate their musical worlds in ways that matter to them” (p. 3). These new learning identities are being fabricated on what is available to the young people within their lives, and O’Neill (in press-b) cautions “that we must not take the simplistic view that these transformations in young people’s learning identities have developed naturally in response to technological change or are the mere result of socialization processes” (p. 13). Both O’Neill, and Loveless and Williamson bring forth the notion that these learning identities are shaped and crafted with particular outcomes in mind, and

question what the intentions of various authorities, or adoption of buzzwords or language, would be in presenting this packaged sort of learning identity to young people in the 21st century.

In navigating their musical lives, young people through the affordances of digital media, and a socially interconnected age of social media and participatory cultures, are able to do so with ease, and a sense of engaged agency (O'Neill, in press-b). However, bearing in mind this concept of the pre-packaging of young people's musical learning identities, the question of how much ability to act with a sense of agency these young people really have, as their conceptualization of their musical lives and selves has been constructed in relation to their environment (e.g., heavily laden with terms such as *'do it yourself learning')* and the encouragement of considering themselves digital or 21st century learners. An example of this could be questioning whether contemporary young people are really enacting change through social media, or whether the packaging of the terminology that is available to them, is giving them a false sense of autonomy and ability to be proponents for change (such as the notion of 'social justice warriors'). In these cases, people who believe they are engaging in a noble movement are using buzzwords and social media campaigns in the attempts to advocate social change without really having an in-depth impact due to making "disproportionate noise" (West, 2014, para. 8).

It is then with prudence, the use of terms like '*feeling empowered'* from the perspectives of young people can be considered, as they are drawing upon the terminology available to them, and that has been presented as relevant. While it is indeed the nature of what young people in the current day are entrenched in, it further calls to question the implications of this assembled sense of identity, how it will evolve through technological changes, as well as future developments and shaping of the messages and terminology underpinning 21st century learning frameworks.

Upon searching the literature, a majority (or rather, a large recent influx) of these reports, frameworks, and development of language around constructing a 'digital generation' have occurred in 2010 onwards. One consideration of this current study, is that the interview study was conducted in 2010, in where these sorts of 21st century digital learning frameworks were only being presented, and not fully adopted at that time

within young people's lives as would be apparent in 2014. As the language was not commonplace at this time, it could be expected that future studies could expect more of these terminologies and concepts to emerge, especially in how the young people describe their musical engagement in relation to 21st century skills and competencies.

6.5. Limitations

As noted, this study was conducted in the Greater Vancouver Regional District, in British Columbia Canada, and was intended as being exploratory in nature to investigate the proposed framework of innovative learners. It was assumed that the participants in this study would have somewhat similar characteristics to youth in the rest of North America, such as technology access and usage, though it cannot be guaranteed that these similarities are consistent across provinces and states until a cross-Canada study is conducted.

One of the primary limitations of this study was found within the research instruments. As participants were not asked directly about their technology and digital media usage and interactions, the results were that not all participants mentioned the role or function of technology in their daily musical lives. Even though technology and social media may have been a prevalent aspect of their lives, discussing technology in relationship with their musical activities may not have been automatically associated when asked about their musical lives. The focus of the questions within the interview protocol was on the top two musical activities in relation to their participants' lives. It became evident through their responses, that some technologically based activities were not always viewed as specifically musical (e.g., creating YouTube videos with sound editing). It may be that a specific musical instrument would be provided as a top musical activity, when in fact the use of YouTube may have been the primary activity that they had in mind, but due to the preconceptions of what a "musical" activity would be, the participant may not have realized that YouTube was an option. As this study used the perspectives of the young people themselves, and from what they felt was most meaningful and relevant to them about their musical engagement, the focus on what was not said is not the focus. Rather, the use of content analysis allowed the focus of the research to be on their dominant perspectives of what they were *actually* saying about

their musical engagement, and the units of meaning that were pertinent to the participants themselves.

Due to aspects of the data and analysis being qualitative in nature, there is a possibility that the data may be interpreted differently within different contexts. All efforts were made to limit biases of interpretation by using the terminology that the participants themselves used, and by the use of content analysis as a method of interpreting the young people's narratives in conjunction with member checks.

While within this study all the participants played a musical instrument or sang in some way, it is understandable that this may not be the case across all contexts. The 93 participants that were involved in the interview study were chosen based on their interest in volunteering in the study, as well as the involvement of their teacher, school, and school district. As the young people that participated in the study were volunteers, it is understandable that their participation in a study about their musical lives would be due to their interest in music or playing music itself. Considering this, it would be necessary for a larger scale research study to better address a larger demographic sample, in which some participants may not play musical instruments or sing. Further, by obtaining a larger participant sample that included a more diverse range in rural, urban, and suburban youth, as well as a range in socio-economic status, could provide a basis for better understanding the gaps in opportunities that may occur through these differences. While the existing study's participants were primarily from middle-class suburban neighbourhoods, they provide a basis for commencing the discussion and development of the framework in an attempt to understand the ways that young people are connecting, learning, and making meaning within their multimodal lives.

Further, as the sample size was relatively small, it is possible that with a more representative sample of Canadian youth, that different interpretations and findings may arise, though the use of content analysis aimed to reduce this limitation. There is very little literature that discusses the ideal sample size for content analysis (Mason, 2010), though Mason (2010) details that grounded theory methodologies (with a similar vein of analyzing categories of meaning like content analysis) as found by Cresswell (1998, as cited in Mason, 2010) would require a sample of 20-30 for a guideline. As this study was exploratory in nature, a large sample size was not appropriate to unpacking the

proposed framework. While this small sample size did not encompass a large demographic across all Canadian provinces, it did provide a much needed snapshot into the lives of young people in the Greater Vancouver Regional district, and in turn, through content analysis, the discovery of these novel ways of connecting, self-directed learning, and multimodally making meaning in their musical lives. Due to the study being conducted with this particular sample of participants from the Greater Vancouver Regional District, in British Columbia, Canada, in 2010, if another study was conducted, it may find varying results due to different sets of young people, with different backgrounds, demographics or geographical contexts, and especially due to the evolving nature of terminology in current day, though having this particular demographic context was necessary to initially constructing and exploring the framework for future studies.

The nature of technology has drastically changed in the past five years, since the commencement of the study. Considering that the study was conducted in 2010, the technology (and terminology) discussed and measured at that particular date was not as advanced as it is currently in 2014. While technologies such as the iPhone and various other technologies has changed since the study, the findings provide a unique perspective of technology in young people's lives in the year before social media and iPhones became a superfluous aspect of their daily lives, as the availability, affordability, and the ubiquitous use of iPhones, iPads did not occur in Canada until after the study was completed. For context, the iPhone had only recently been released, and was not available in Canada (through wireless providers), and was still a significantly higher price than other phones at that time, and further, the iPad or multimodal tablets were not in existence at this point. As the technology discussed within the interviews likely has evolved into much more advanced digital media, the study is limited in its ability to extrapolate what the current voluntary interview statements would be in current day about youth digital media usage. It is expected that based on recent literature and news reports, that there has been a large upswing of youth using digital media and devices, and more specifically smartphones and tablets, and in multimodal and musical ways. The changes in technology since this study occurred provide a reasonable cause for another study to address the newest technological progressions, but due to the fast paced evolution of technology today, it is impossible for any study to keep up to the pace

of these changes. With that said, this exploratory study's findings are still very relevant and useful as they address the emergence of mobile and social technologies within young people's daily musical lives, and thus a baseline for understanding the notion of the innovative learner. This study replicated in the future with the same students could prove to demonstrate the increasing digital media and device usage today, as well as provide a longitudinal perspective of change over the past five years.

6.6. Practical implications for pedagogy and practice

6.6.1. Within music education

In response to Green's (2007) book on *How Popular Musicians Learn*, there were several critiques of her strategy, as it was viewed that by embracing informal music learning practices, the role of the teacher would be eliminated (Green, 2008b). This critique is also applicable when appending the concept of participatory cultures, self-directed learning, self-regulation, and even multimodal literacies. At an initial glance of the literature in these areas, and considering the learning potential of these interrelated areas and constructs, young people today are capable of educating themselves and others in music, without teacher intervention. When considering the practical implications of how these innovative learners are engaging in their musical learning, I posit that this is not the case. There are diverse new forms of digital media engagement, expression, learning, and communicating: ranging from basic interactions with portable music listening devices (e.g., iPods, iPhones), more intricate interactions, such as YouTube, gaming communities (e.g., social gaming communities like Twitch where viewing someone gaming across the world is a social interactive activity), and multimodal social networks (e.g., Snapchat, Vine, Instagram). Yet, many music educators just require an understanding of what these informal ways of learning are — and how to build upon the areas that innovative learners exhibit within their own teaching. While the current state of formal music education is focused on "school-based ensembles," which through its narrow definition of "music" may indeed regulate the ability of music education to impact society and social engagement outside of school (Jones, as cited in Frierson-Campbell, 2008, para. 5), music education within the school does not need to remain unchanging. The role of the teacher in music education is still

essential, as youth still need someone to facilitate their music education while fostering the opportunity to build on the three areas of innovative learning, as well as help youth navigate the changing landscape of musical learning and expression.

6.6.2. Importance of the teacher and classroom

Adults have the ability to influence how youth are enculturated into music, and many popular musicians come from musical families or environments (Green, 2007). Many of the participants within this study initially commenced their musical activities through their interactions with their siblings, or parents. Jenkins (2006a) suggests that adults, and in this adaptation, music educators, can use contemporary media content, such as television to instigate conversations with youth about issues that may be difficult to understand due to differences in generations. This provides youth with ways of communication that are relevant and familiar, as Prensky (2001) notes that in comparison to their pre-digital age educators, contemporary students have become technologically literate from early childhood. These conversations can provide a forum for reflection and new ways of talking about issues, such as sexuality, violence, politics, and social lives. Taking Jenkins' suggestion and applying it to music education, it could be possible to engage in similar conversations using multimodal resources such as YouTube, where image, video, text, and music are ways to discuss meaning, moral and ethical issues, and even the logistics and legality of creating multimedia video. By providing a way for youth to connect their interests outside of school to meaningful concepts in the classroom, educators may find a way to critically engage their students in ways that traditional routes have not had a chance to otherwise.

Taking the concept of affinity spaces, where informal learning can flourish, music educators could attempt to engage their students in creating participatory cultures online within the classroom. While many teachers may believe that they already have existing participatory cultures in their classrooms, as they let their students "surf the net" for music videos and sheet music, they are not truly enabling a participatory culture, nor does it present the chance for their students to engage in the three areas of connecting, self-directed learning, or multimodal meaning making. It is easier to understand this issue, and how simply providing access to these resources within the classroom does

not foster the opportunity to build upon these areas by looking at a particular area as an example. Using specifically the area of connecting, and considering how participatory culture consists of a combination of the five outcomes that Jenkins' identified, while it is beneficial to give students the chance to use new technologies and expand their knowledge online, they may really only be exploring potential new genres of music to listen to. Or in the worst-case scenario, only viewing the use of the computer for non-connected related actions, as just another curriculum task that does not relate the young people's out-of-school experience.

The practical implications of better understanding the areas, and the six constructs associated with innovative learners is rooted in the unveiling of the key features of each area, as a way to best assess whether particular activities or projects foster an environment for students to explore these areas. For educators trying to better understand the ways to incorporate the changing world of technology into their classroom, better understanding the characteristics that innovative learners exhibit may provide a launching pad to encouraging these sorts of learners through their musical activities. Instead of simply providing Internet access and a social media component to a curriculum, educators could see the benefit of creating opportunities for multimodal meaning making, emotional expression, and connectedness within a musical activity.

6.6.3. Changing role for music education

If the purpose of education were to provide students with the skills and knowledge to become full participants in their creative, public, and social communities (The New London Group, as cited in Cope & Kalantzis, 2003), then it would appear that music education would also hope to encompass those goals. To enable youth to achieve this inclusive sense of community through music education, music educators would need to understand how their students experience music both in and outside of school, and more so, facilitate their students with the opportunity to contribute to their music education with their own knowledge and skills. Moreover, the emergence of the innovative learner enables the opportunity to transform the environment in which musical learning and innovation takes place. By envisioning music education within classrooms as a space to equally explore formal curriculum, informal music learning practices and

aspects of participatory cultures, music educators may potentially be able to foster this comprehensive goal for educating youth to become a part of this creative, social, technological and civic community. Youth are already learning and experiencing music and a sense of community outside of school walls, as seen in the innovative and resourceful descriptions from the innovative learners of Self-Directed Learning, yet young people do not have a forum within formal education to express and share their knowledge. Just as Green (2007) poses that informal music learning practices are able to a part of formal music education, it would seem that the affinity spaces found in participatory cultures could also foster a new identity for music education, where music educators build upon their students' existing skills and competencies in informal music practices and technology. It is important to acknowledge that the notion of formal versus informal music learning and education are somewhat limited in their scope within young people's contemporary contexts, and that the ways that young people are learning are across a spectrum of inside and outside school environments, in which role models, teachers, and mentors are necessary. Regardless, it is still relevant to the current discussions of these novel ways of learning within young people's lives, that informal music learning practices provide the initial forum to situate these conversations within a digital age.

Many youth engage in informal music learning practices within their online participatory cultures, where they not only encounter music, they are enculturated into musical and technological worlds, interact and share musical knowledge, and teach themselves musical skills and knowledge. These skills and practices can be brought into the classroom. Green (2007) suggests that music educators learn these informal music practices along side their students, acting as peers rather than 'teachers of knowledge.' Music educators may also find that they are able to learn from their students how participatory cultures can enable learning music to be a part of a community, rather than a classroom lesson to be mastered.

Moving beyond the strategies for music educators to better become familiar with what and how young people are musically learning outside their classrooms, the notion of 21st century forms of teaching can be considered. The opportunities for music educators to move beyond traditional teaching techniques, and to embrace multimodal and digital forms of teaching and learning, are bolstered by the emergence of new

technologically infused ways of teaching from other curricular areas. *Flipped classrooms* and *flipped learning* are a testament to the changing nature of education in the 21st century, in which music education can potentially take a cue, especially due to the multimodal nature of musical learning itself. Within a flipped classroom, lectures and tutorials are watched/learned by the students at home, or outside of class time (rather than the passive within-class structure of traditional lectures), and the in class time is then reserved for "active, hands-on, student-centered," and interactive forms of engagement (Foust, 2012, p. 100). Within classroom time, there then opportunities for "group and independent learning," as well as making it possible for the teacher to accommodate diverse learners, and enable learners to succeed (McNulty, 2013, p. 41). Within a flipped classroom, it is possible to incorporate many of the ways that young people are learning outside of the classroom (e.g., informal music learning practices such as self-teaching, or peer-based learning). This environment provides a space to include aspects of what is important and meaningful to the young people themselves, as they bring forward their own questions, interpretations of the lecture or tutorial, along with their own knowledge and skills, within a forum that encourages these explorations, and experimentations in their learning. Within a music classroom, flipped learning could provide the prospect of learners learning the lesson via online lectures before arriving in the classroom, in which they could converse on online forums with their peers about their thoughts, reflections, and initial questions. Once in the class, the young people would then be able to engage in meaningful dialogue with their peers and teacher to discuss any questions or revelations they had during the lecture, and then spend the class time focusing on items that the teacher can facilitate and provide further guidance on (e.g., properly holding a violin, or the correct finger placement on a guitar). Due to the physicality of some resources, such as musical instruments, some skills are still necessary to experience in person, and often can be expedited by careful guidance (e.g., learning to bow a violin). The example of a flipped classroom for music education then provides a focus on the young music learners' active engagement in their learning, and integrates technological components into practical applications, without detracting from the learning itself.

In viewing music education as no longer just an institutional entity on its own, music educators can try to incorporate aspects of the areas of 21st century learning and

innovation within their classrooms, to create a comprehensive understanding of the ways youth are experiencing and learning music, both at school and outside of school. As these concepts are still theoretical in nature, and this thesis only begins to unveil the gaps between what educators know, and what young people are doing outside of school walls, I don't attempt to provide the actual real-time solutions to help music educators strengthen these connections between music inside- and outside-school walls, or a continuum between the two (as many young people seem to envision or describe it). Rather, I do believe that providing educators with an understanding of these areas and constructs, and their features, may provide a starting point for change for music education to include the meaningful ways that youth are connecting, learning, and multimodally making meaning within their musical lives.

6.6.4. Considering multimodal meaning making within music education

As technology is constantly evolving and progressing, it is becoming difficult for music educators to stay ahead of what students are encountering outside of school, and I am not just speaking to the musical activities of listening to music on mobile devices. Informal music learning practices encompass what youth encounter in their social contexts in and out of school (Green, 2007). Green (2007) addressed that musical learning can occur even without the presence of an adult, as peer-to-peer learning can empower youth to share their expertise with each other online. In response, it is important to mention that many youth are indeed sharing their musical expertise and teaching their peers in more ways that simply teaching one another guitar chords. This sharing of music expertise is seen when they are playing music video games that are connected to players around the world, or engaging in participatory cultures online where music videos are uploaded and critiqued by other youth, and adults. These are all ways that our music students are learning about musical expression outside of how they are taught in traditional school curricula.

As discussed, the concept of multimodal literacies posits that multimodality is a central literacy practice for both youth and adults alike within our media-centric society (Cope & Kalataniz, 2000). Multimodal meaning making and literacy are not limited to outside of school based-settings, rather enter the forum of formal education as young

people bring these multimodal literacies with them to the classroom. The boundaries between traditional literacies and new media literacies are permeable and continually changing, and due to this, they require critical reflection about the ways they influence musical learning, expression, and how young people make sense within their particular contexts. Educators must be wary of the potential of the media to shape and convey particular messages, as the mainstream media (through technological advances) has the ability to distribute their messages in a format that most classroom curricula do not currently employ, one that is meaningful and of relevance to the youth. The media and its messages have become entrenched in contemporary youths' activities, communicative actions, and knowledge. With that, the role of music educators becomes even more central, as they now may be one of the only resources to assist their students in thinking critically about music and media literacy education.

6.6.5. Key implications for music education with innovative learners

Many educators, researchers and policy makers seem to view music education and learning as existing in two separate (rarely overlapping) spheres consisting of formal music education and informal music learning (Green, 2007). In my observation, technological advances and communities of practice are only an addendum. Further, "classrooms today typically lack 21st century learning and teaching in part because high-stakes tests do not assess these competencies" (Dede, 2009, p. 3).

Yet, through the emergence of these innovative learners, and how their interconnected musical lives provide opportunities for them to deeply engage in their musical learning unlike any other generation. We can use these young people as models to envision music education as an entity of its own and build upon the New London Group's mission for education: to ensure students "benefit from learning [and engaging] in ways that allow them to participate fully in [creative], public, community, and economic life" (as cited in Cope & Kalantzis, 2003, p. 9). From this, we may find that there are spaces still left relatively unexplored as ways of paving the way for an inclusive musical future — in which aspects of informal learning and formal education can be embed into the very make up of music education. Within these spaces, there may be room to foster the development and growth for young people to engage in the areas of

the framework for innovative learners, as a way to provide connections between music education and learning for youth, both in and outside of school.

6.6.6. Implications that arise from the gaps within the literature and in practice

As evident from the gaps within the literature and in practice, musical sound is underrepresented as a mode of representation in literature and practice. As I have discussed, music educators are faced with the difficulty of understanding how students today are gaining knowledge and communicating about music, as the Internet, mobile devices, and computers have enabled youth to grow up in a multimodal experience of learning. A greater difficulty arises when attempting to use the multimodal learning resources as a way of expanding learning opportunities within music education. Within the literature and practice there is a disproportionate focus on the modal resources of image, moving image and 3D objects (e.g., Halverson, 2010; Yamada-Rice, 2010), including separating the modal resource of visual from the term multimodal (e.g., visual and multimodal representation) (Matthewman, Blight, & Davies, 2004, para. 1). Many teachers are starting to adapt to the changing ways youth are learning and acknowledging that there are multiple modes of communication, yet this focus on image surpasses the inclusion of music and sound. Classrooms are expanding the learning opportunities for exploring visual formats of expression, including building websites, collaborative Facebook pages (Shaltry, Henriksen, Wu, & Dickson, 2013), learning computer animation (Siegle, 2014), constructing podcasts and videos (Smith & McDonald, 2013), exploring 3D video games like Minecraft (Jenkins, 2014), yet the modes of musical sound, soundtracks and non-musical sound are seemingly ignored. As someone who views music education as a pertinent part of a youth's experience in life, in where young people are personally valuing their musical participation, I am concerned with the implications of how the literature and classrooms are managing to include other modal resources as relevant forms of meaning making, while dismissing music and sound as equal contenders.

Kress and Van Leeuwan (2006) emphasize, "information is now so vast, so complex that, perhaps, it has to be handled visually, because the verbal is no longer adequate" (p. 32), and that "visual literacy will begin to be a matter of survival, especially

in the workplace" (p. 3). While they succinctly show the need for the visual modal resources of multimodal literacy for the future of education and the workplace, youth are becoming increasingly media and modally literate in more than visual modes of representation and communication. Multimodal meaning making is not limited to constructing meaning with the individual modes, but is predicated on the assumptions that modes are interactive with each other and that their products of interaction also are a component (Kress & Van Leeuwan, 2006). Musical and auditory modal resources need to be incorporated if not immersed into the research and classroom practice of multimodal learning. Youth are learning to become multimodally literate without the help of classroom education, as I have already mentioned, where they are self-teaching through Internet resources and engaging in peer-to-peer exchanges of knowledge, including a mixture of modal resources. It is time that teachers became a part of this discussion and started to become a part of the multimodal and media literate population in our technological society. To this end, this study aimed to better provide a an exploratory, yet illuminating understanding of the multimodal meaning making, and all three areas as a whole within the contexts of music education, for the advancement of knowledge for educators, researchers, policy makers and implementation into practice.

There is no doubt that youth are consuming a wide range of multimodal resources and meaning making, many of which still rely on text as a part of their make-up, including and not limited to blogs, social media, online gaming, books, magazines, and texting (Chandler, O'Brien, & Unsworth, 2010). More importantly, youth are not just consuming these media, but also producing it as well, as Jenkins (2009) reports that more than half of youth in the USA use the Internet, and 57% of those youth are creating, publishing, and editing forms of multimedia. Even though many of these relatively novel ways of creating and expressing creativity are still rooted in traditional forms of literacy, such as reading text, multimodal resources used on the Internet, and with new forms of media, still require basic literacy in reading and writing to navigate this technology, and to then make meaning through it. For instance, a young person could not write a blog post, interact with social media like Snapchat, edit a music video, or use Garage Band to create a piece of music, without basic text-based and technological literacy. Moreover, if considering that the creations by youth that they post/upload onto the Internet likely will be viewed by people of all ages, it may be that many interactions

on the Internet might require a higher level of reading and writing literacy than they might require at school where the curriculum is generalized for particular grade levels.

Many educators, who have not grown up with these new mediums of expression such as listening to iPods as a way to learn guitar chords by ear, may feel that students cannot learn successfully while engaging in the concurrent activities. Teachers may feel alienated by these new technologies being used in the educational forums, and not know how to integrate them into their practice (Conlon & Simpson, 2003). Yet, before even attempting to find ways to connect these new media literacies into the classroom, teachers need to experience them for their own selves.

There seems to be a disconnect between what teachers learn in their teacher preparatory courses and what they will actually face when they arrive in their classrooms. Based on the observation of a technological knowledge gap in contemporary educators, it is justifiable to infer that media literacy education is hardly discussed in music teacher prep programs, if it all, and the focus on traditional forms of literacy continue to dominate the content. While learning the techniques to teach brass instruments and put together a band class are useful for a music educator, why wouldn't learning to navigate the Internet, search YouTube and edit and upload music performances also be equally important in teacher preparation. It is an understandable concern that providing extensive media literacy education might lead to an overemphasis on technology *instead* of education, rather than technology *as a part of* education. Though, concerns aside, I posit that with well thought out music teaching preparatory curriculum that has been informed by contemporary literature on the multimodal and media-centric ways students are learning, and a curriculum that enabled teachers to physically interact with emerging technology, music teachers would not be entering their classrooms unprepared to recognize how their students are engaging in music and learning outside of school.

It is one thing to read about something, to discuss and reflect upon something, but it is an entirely different matter to actually "do" it." It is obvious from the literature I discussed earlier, that language and verbal communication do not comprise the entire experience of knowing and extracting meaning. Kress (2010) provides the example of the difference between asking a science student to verbally describe a nucleus and

asking the student to draw the nucleus. Simply stating the textual definition of a "nucleus" does not convey the relationship in size between the cell and the nucleus, and where the nucleus is spatially located within the cell. Instead of a shallow engagement in thinking about the properties of the nucleus as a verbatim response, the drawing or multimodal representation of the nucleus provides the student with a multilayered experience in expressing their knowledge. Similar scenarios occur when asking contemporary students who play historically accurate video games. In asking the student to read a book on the American Civil War or to listen to a teacher lecture about it, they may not find any relationship to the content. Yet, when relating the topic to the sounds they heard, the visuals they saw, and the spatial landscapes they encountered while playing the video game, they may be able to provide a detailed answer that not only contains an understanding of the complex relationships of the historical story, but with interest in learning more (Jenkins, 2009). Jenkins (2009) accounts for this by explaining that educators have long known that "direct observation and experimentation" enable students to learn more, and that "simulations broaden the kinds of experiences users have" (p. 42). In short, simply living in a monomodal world is no longer an option for educators who want to relate and understand how to teach their multimodally and technologically literate students.

Potential solutions to this knowledge gap for teachers typically include providing their classrooms with new media such as computers and connections to the Internet, yet that in of itself does not solve the problem. Teachers need to have the opportunity to see the learning potentials of these new mediums, and get a chance to actually interact and engage with them. A potential solution is to give the teacher the opportunity to develop their multimodal and media literacies over the course of their teacher prep programs and classroom curricula, in partnership with their students, and using the framework of innovative learners as a guide.

6.7. Directions for future research

There is a need for further research into the areas that innovative learners are exhibiting, specifically within music education. Drawing on the findings of this study, future directions for research should encompass a wide range of areas from

comprehensive investigations. These investigations include research into 1) young people's technology usage within their musical lives, 2) their vocabulary within these musical lives, 3) better understanding the spectrum of types of learners, and finally 4) how best to enable young people to engage in all three areas, and the related constructs, associated with innovative learners in the 21st century.

6.7.1. Need for investigations into technology and musical language, usage, and contexts

It is essential to better understand the areas that these innovative learners exhibit, and how these interrelated areas combined enable young people to become these sorts of innovative learners. Further, as these young people have been shaped through the technological revolution and digital age, and the technology itself is at the root of this phenomenon, there needs to be further research into the ways that young people are technological engaging in their musical lives, how these technologies are interlaced within the areas of an innovative learner, and the ways in which these technologies and their affordances and constraints can be interwoven into formal education. The OECD (2012) states:

> While educational institutions and teachers are increasingly adopting technology in teaching, there is an urgent need to address this issue in a systemic way. This means identifying which policies and practices will best suit the objective of providing students with a rich learning environment while improving their satisfaction, with convincing reasons based on effective practice, and thus boosting learning gains. More must be done to improve the knowledge base about technology use in education so as to inform the debates. In particular, activities intended to train and support teachers for course adoption of technology should be based on validated effective practices. All this requires not only more experimental research but also increased efforts to better disseminate existing findings and thus avoid reinventing the wheel. (pp. 12-13)

As it is demonstrated that it would be best to have further investigations into the ways that young people are adopting technologies, and how best to incorporate these technologies into educational contexts, building on this current research is central to building a larger and more comprehensive study of the technological ways that these innovative young learners are involved in their musical lives.

Considering the existing research within the area of technology and music education, Thibeault's (2014) highly useful philosophical discussion on re-envisioning media and technology within the contexts of music education substantiates the need for further research into the ways that "we both change and are changed by technology" (p. 36). The necessity of better understanding the deeper implications of technology within young music learners lives, as well as within music educators' contexts is essential to navigating the evolving nature of becoming musically knowledgeable in a digital age. Tobias (2013) explains that while "K-12 programs represent an important but somewhat narrow range of the diverse ways people know and do music" it is possible that music educators are in need of further clarification (para. 1). Tobias proposes that "knowing how people learn and do music in their everyday lives can assist" music educators in going beyond the "narrow range" of K-12 programs. He calls for expanding the model of music education as,

> Reconciling differences between the musical cultures present in contemporary society and our K-12 music programs necessitates looking beyond whether people participate and focusing more closely on how they engage with music. Expanding the types of participatory cultures and musical practices addressed in music programs may help music education evolve with society. (Tobias, 2013, para. 5)

This focus unveils the need for bridging the gap between what young people are doing outside of school, and what exists in current curricular contexts. Tobias (2013) goes on to provide complex scenarios and observations as a way to unpack the concepts of participatory culture, technology, and media convergence that may occur in music educators' and learners' lives, yet does not investigate case studies of contemporary young music learners and their technologically-infused lives, or their perspectives on their musical engagement. Further, many current studies still remain devoid of a musical focus (or even music as one of the key components) in the research on participatory cultures. Going beyond this gap, there is a lack of music-specific research and practical applications that directly address many of the constructs (e.g., participatory cultures, and multimodal literacy) that in comparison are profusely examined within general educational research or other curricular areas, such as visual arts. Bearing in mind the ever changing nature of technology and its inculcation within musical engagement and learning, thorough investigations of the interrelated areas of

musical engagement actually happening in student and educator lives (both within the classroom and outside school walls) could be deemed as essential.

Considering the scale of the current study, and that digital technology and culture has drastically transformed in the past five years, as seen in digital and social media developments, a follow-up study with a larger sample, and a focus specifically on the constructs, and the interrelated areas, of 21st century music learning and innovation would be necessary to better map the terrain.

Need for investigations into technology and musical vocabulary

Adding to the blending of various ways of expression, learning and communication, is the increasing difficulty with how there is no longer a separation between software and hardware anymore. Just as I posit the vocabulary has become blended between modes (watch/hear/listen/see/play), I think that the terminology around technology will also become blended in the future. As researchers and educators, the difficulty with keeping up with the technology will only be bolstered by our resistance or return to using discrete categories for particular technologies. Future research could be necessary in the field of the words that young people use to describe technology, as do they use the terms *devices, electronics, or technology*, or is there a completely new vocabulary to describe their technological involvement in their musical lives? Using the term "smartphone" in coming years may not be necessary, as it may be expected that all phones are multimodal and interactive. The terminology used to describe basic digital devices continues to change daily, from the types of hardware (e.g., iPhone, Android Phone, Blackberry), to the types of software or apps used on these devices (e.g., Twitter). The implications for this actually are quite relevant to researchers, educators and policy makers, as we need to be up to date in the vocabulary we are presenting and using around our youth today. How can we as researchers ask questions about technology in a way that is relevant to the youth themselves? Our use of the term digital denotes that there is something other than digital (e.g., analog) - yet current day youth today have never known a time where being digitally interconnected via the internet, mobile phones or laptops was not commonplace, let alone a time when anything digital instead of analog was considered ground breaking new technology.

Within pedagogical contexts

A future study would need to better understand all the technological ways that young people are engaging in their daily lives, both inside and outside school contexts. Within a future study, it would be pertinent to address how and what types of technology and social media are now a part of their formalized classroom settings, and how educators are being tasked with or their personal expectations for incorporating these technologies. While as mentioned, many schools are attempting to keep up with the technological progressions that have emerged within outside school contexts (e.g., social media mandates within classrooms). Many of these initiatives are fuelled by initial considerations about the need for integrating technology, and not based in the actual multimodal ways that young people are engaging in these digital and social technologies, nor consider the diverse forms of meaning making and expression that are inherent aspects to young people's musical involvement in these technologies. A future study that investigates the pedagogical implications of these changing technologies within the music classroom, better mapping the sorts of language and vocabulary that young people use to describe, the sorts of meaning young people ascribe, and their technological and musical activities, could help bridge the gap between what is happening in young people's real lives, versus the curriculum, research and pedagogy that currently exists. Further, in bridging the gap between what is happening in young people's lives and what is within the curriculum, it may present a novel landscape for reforming the very nature of teacher education and professional development. In re-envisioning what is relevant and meaningful to young people today as a part of pre-service teacher education, it may be possible to break the cycle of continuing to look at teacher training and professional development from the traditional strategies used in previous generations (where knowledge and learning were primary textual and verbal). Going forward, the findings of this research, and future investigations of the influence of technology within musical contexts, provide a basis for better refining the needs of young people today, who are connecting, learning, and making meaning in multimodal and digitally infused ways, unlike previous generations of learners. From this knowledge, it then becomes tangible to develop a platform to reset teacher education and professional development into the digital age, in which information is limitless, and technology provides a boundless possibilities both in-person and virtually (and a combination of in between).

Within music education

While in 2007, Green (2007) was adamant that youth and adults alike are declining in their music-making involvement, this dissertation has presented that through the affordability and access of technology to engage in music-making activities, young people are now able to connect in new ways that were not available even 7 years ago. Music-making is now tied to the actions of creating, expressing, and interacting with other media within the collective virtual world of the Internet, and physical world combined. Music-making is no longer a standalone activity for many youth who engage in the area of connecting. Exhibiting aspects of being involved in participatory cultures (e.g., social networks, collaborative online authorship, creating anime music videos, remixing YouTube content, elaborate podcasts) give young people the chance to incorporate music-making, music listening, and combinations of the two into their new media environments. Green's descriptions of informal music learning practices provide a stance that many youth learn these musical skills and competencies through self-teaching and enculturation, with at times little intervention by adults, then are propelled by these interconnected ways of learning that have emerged in current digitally-infused society. To better understand these new forms of learning, and their legitimate value for application in music education, further research into specifically these innovative learners and their musical lives both inside and out of school is essential.

6.7.2. Suggestions for music educators

With generalized curriculum turning its focus to 21st century skills, innovation and learning (C21 Canada, 2012), the emphasis is now on young people's learning as a whole, not specific subjects, and more so, little to no mention of music education. Thus, within the parameters of formalized music education, the curriculum has remained relatively stagnant to the new media literacies that youth are engaging in and require for their futures, even though 21st century skills (in general) are at the core of many of these digital age educational frameworks (e.g., C21 Canada, 2012). As I have already noted music education is faced with the language and content currently being used in school becoming inaccessible to a generation of youth that are making meaning from more than just written and oral curriculum, where musical expression and exploration are multimodal and often technological in nature.

By better understanding these constructs, and the broad areas that innovative learners are exhibiting both inside and outside of school, we may be able to accommodate the changing landscape of how youth are learning, by enabling communication and engagement with musical sound. It is pertinent to note that providing educators and researchers with an understanding of the theory behind these areas is only the first step to helping them provide expansive learning opportunities for expression and exploration in music. They also require a practical framework to help them identify and interpret these ways of musical engagement, and to inquire into what is relevant to the youth themselves and why. Considering frameworks, such as the C21 Canada (2012), are developed with the outcomes of student success in their social, economic, and global futures, with little to no regard to music education, it seems that many frameworks for music teachers simply provide instructions and guides on how to teach. Yet, it obvious that since students are now used to playing an active role in their own music learning and expression outside of school, it would make sense to provide a framework that enabled them to also be a part of the process of inquiry and to explore their multimodal literacies in ways that traditional curricula likely aren't prepared to address.

I pose that a future research into using this framework for innovative learners situated within an inquiry based project could be used to identify what youth already know about music within their technological lives. Based on this information, and through this framework, music educators would then be able to recognize and interpret these existing literacies and find ways to develop expansive learning opportunities in collaboration with their students. Further, they could facilitate the opportunity for their students to foster a greater understanding of their own musical lives. Just as the multimodal forms of learning seem to be at an arms length from formalized music curriculum, the natural ways that youth inquire seem to be stifled (e.g., play, interaction, experimentation). In turn, our understanding of what they actually want to know or already know may be reduced. By using an inquiry model of learning, it would be a holistic learning experience for both the teacher and the students. Not only would the music teacher be learning to recognize what youth already know, and that what they are saying is meaningful and relevant to them, they would be able to work side-by-side with

their students to discover the language that is used to explain their musical engagement, all within the students' own context and interpretation of their musical knowledge.

6.7.3. Media literacy

The definition of music is continually evolving due to emerging technologies and ways of interacting with musical sound. The criteria that define music and artistic values changes over time, but the one thing that remains static is that they are always determined via socio-cultural contexts (Gruhn, 2006). Music is a part of the multimodal resources that modern youth are engaging in on the Internet and within their various forms of media. A difficulty for many music teachers may be in recognizing how their students are engaging in musical activities outside of the format of practice, performance of technique, exercises, notation and prepared performance that they traditionally have implemented in music classrooms. The abundant quantities and diversity of information currently available and accessible to youth and adults in contemporary society can be overwhelming, and an initial look at the resources available to understand and interpret how youth are engaging in media literacy and musical engagement presents both opportunities and challenges for music educators. Hinchey (2003) points out that "the amount of information is enough to overwhelm novices who need a concrete and concise overview of the territory before stepping into the classroom" (p. 295). In the case of comparing music teachers and students, the teachers seem to be the novices in new media literacies and the students are the experts.

Even though students are arriving in the classroom with knowledge of engaging with music in diverse ways, and are able to intuitively communicate using these technologies, there are massive quantities of information. Further, due to the collaborative ways that information is disseminated through the Internet, neither the students nor the teachers understandably have a refined way to determine the reliability and credibility of the content they are interacting with. The Internet and mobile devices in today's society provide an experience that encompasses a majority of the modal resources that Jewitt and Kress (2003) identified. Yet, there is a difficulty in "determining the credibility of multimodal texts," as the authorship and origination of the content cannot always be verified (Baildon & Damico, 2009, p. 265). It seems that a majority of

Internet users, especially youth, are not interested in the credibility of information, rather they are interested obtaining the information regardless of legitimacy and reliability (Burbules, 2001). Baildon & Damico (2009) noted that YouTube is one of the resources that youth commonly use to learn to play instruments, learn techniques, and share their knowledge with others. Considering that YouTube is a vehicle to deliver user-created media by anyone with an Internet connection across the world, the legitimacy of the content is questionable. Through comments from users on YouTube, youth are able to get positive and negative feedback about their uploaded artistic performances, tutorials on "how-to" play an instrument, and various other musical-activity related videos, all without the intervention of formalized music educators (Burgess & Green, 2009), yet how is credibility of comments, feedback and content really regulated?

More importantly, many of the resources for musical learning and engagement on the Internet are a result of large amounts of members of the Internet community contributing sharing, editing and appropriating knowledge; this concept of an online problem solving collective is called crowd-sourcing (Brabham, 2008). However, with a large collective of knowledge, how do youth determine what is reliable information, should they be concerned with copyright law or crediting the original author of the piece of music they are appropriating, and how do they determine what is morally or ethically appropriate? In Flanagin and Metzger's (2010) report on youth digital media usage and the credibility of the Internet, they noted that children for the most part "displayed an appropriate amount of skepticism when presented with hoax websites" (p. xiv). However, it is important to note that younger children were more likely "to be fooled by false information online", and less blatant media advertisements were harder for youth to differentiate form legitimate content (p. xiii).

It seems that to be a part of this media-centric and multimodal world, youth today require some sort of education on learning to navigate the media centric world, while learning to view credibility and authorship as legitimate concerns. While some media literacy education occurs within the home, it is typically centered around privacy concerns and not engaging in sharing of private information with strangers on the Internet (Flanagin & Metzger, 2010). Where will youth learn to critically evaluate the information they encounter in the media when it comes to music or creative expression? While music teachers may have a growing knowledge gap in regards to emerging

technologies and new ways of engaging with music, and with that a similar inability to critically determine the credibility and reliability of content on the Internet, their role in their students lives is essential at this time of fast-paced information sharing. Teachers now hold the possibility of helping their students think critically about the ways they are engaging with music, instead of passively wondering why students are more interested in *surfing* YouTube than playing or learning their instrument.

6.7.4. Participation gap and where to go from there

There is a divide between technological literacies, not only between educators and students, but also between the students themselves**.** The changing nature of technology within young people's musical lives has lead to the question of how educators can increase the learning opportunities for students to explore and express music within this predominantly digital age. Before that can occur, educators and furthermore curriculum designers and policy makers need to realize that students and teachers bring diverse and varying skills and knowledge about these multimodal and media literacies.

The notion of "digital natives" and "digital immigrants" helps explain the growing knowledge gap of multimodal and media literacies between students and teachers (Prensky, 2001, 2006). Yet, educators need to acknowledge that individual youth do not have identical abilities to navigate technology, media and new musical mediums, and that there seems to be a continuum of knowledge of multimodal literacies and technological capabilities. While the term "digital native" helped start the conversation of the emerging digital generation of learners that has never known a time without technology, and illuminated the root of the issue at that time, the vocabulary once again needs to shift to acknowledge that most young people under 20 years of age are now considered digital natives. This nullifies the term's ability to describe separate groups; therefore, in 20 years, the question will become: won't a majority of the literate world be considered a digital native then? Even the use of other terms such as "digital settlers" to describe those that helped shaped the digital age (Palfrey & Gasser, 2008), inundates the ways that people are categorized. Regardless of growing up in a technological age, there still remains a participation gap in young people's (and adults) technological

knowledge and skill. It is possible that Jenkins' (2009) participation gap is one of the reasons that some of the young people within this study were exhibiting aspects of the three areas except for Multimodal meaning making, as they have not had the opportunity to develop or explore the technological possibilities that exist around them. The ability to multimodally make sense or meaning is predicated on having access, knowledge on how to use, and the interest in using these revolutionary multimodal technologies. Jenkins (2009) addresses this concern as the "participation gap," where youth are no longer separated into the groups of those with access to technology and those without. To be more precise, it is pertinent to note that there is a spectrum of access and abilities. Within this gap, some youth are developing higher levels of comfort with the "online world," and where youth from lower socio-economic statuses or geographic locations may be less comfortable with it due to their reduced access or familiarity with the new mediums (Jenkins, 2009, pp. 16-17). Future research endeavours may best be suited to focusing on this spectrum of young people, and whether participation gaps are eliciting negative outcomes or more specifically impeding some young people's ability or opportunities to become innovative learners. Finally, in doing this, it would present a significant contribution to the literature, and offer educators with new knowledge to learn how to interact with their students, and better understand these new ways of learning, as well as provide policy makers with the resources to best incorporate these technologies into music education in meaningful and relevant ways.

6.7.5. Future study: A snap-shot of young people's real-time contexts: ESM and iPhone app

Future research is needed to provide a comprehensive picture of how youth are engaging in musical learning experiences during their daily lives, while fully utilizing the mediums that youth are intuitively using to express themselves and communicate (e.g., iPhones). This research could investigate the three areas of an innovative learner, and further, delve into how these constructs are important aspect of young people's musical lives. This could be done through the development and implementation of an innovative method of data collection that would enable youth to participate in the research using mediums of expression and communication they are currently using on a daily basis (iOS devices, push-notifications, and location-sensitive alerts), and that they almost

always have on their person (e.g., iPhone). In other words, a future study would need to develop a way to investigate young people's musical lives, using multimodal mediums involving music and digital media that could be used as both research tools and the object of study to examine how young people use them and the functions they serve in their everyday lives.

Experience Sampling Methodology (ESM) could then be used to develop a "snap-shot" of youth daily subjective experiences (Shernoff & Csikszentmihalyi, 2009, p. 132). This method would combine music and digital technologies, in the form of an App for iOS Apple devices (e.g., iPhones, iPods, iPads), in which real-time ESM research could be collected without interfering in the young people's daily activities. Participants would be able to respond to the survey using their own mobile devices, thus addressing a key goal of this future study: to better understand young people's subjective musical experiences with their own mobile devices and technology within the same contexts they actually use them. This intuitive format would enable young people to provide self-reports in a way and time that is convenient for them and that represents their true everyday context, thus reducing the inconsistencies inherent to retrospective self-reports (Csikszentmihalyi & Larson, 1992). ESM has proven to be an effective tool to explore flow (Peterson, 2006) and musical experiences within the natural occurrences and contexts of daily life (Sloboda, O'Neill, & Ivaldi, 2001; Greasley & Lamont, 2011), and thus I posit it as an ideal way to comprehensively investigate how young people are connecting, learning, and multimodally making meaning within their musical daily lives to help bridge the gap between existing literature and educational practice, and to contribute to knowledge within this field.

6.8. Summary

Contemporary music educators are faced with a changing landscape of music education, where youth are no longer simply learning music through formal music learning practices. Music is a large part of contemporary youth's lives and culture, especially as musical creation, learning, and expression are possible without the assistance or supervision of an adult. The technological advances in creative expression online have led to participatory cultures, in which they may offer a way for

music educators to facilitate connections for youth between their musical experiences outside of school walls and within music education. By identifying each of the overarching areas, and their related constructs, such as Jenkins' (2009) outcomes from involvement in participatory cultures, Green's (2007) informal music learning practices, or multimodal literacies, it is possible to provide scenarios that integrate the innovative learners' framework, to help music educators understand their new roles within these new spaces for learning. Scenarios are complimented by the vignettes of innovative learners, to provide a lens into what young people are actively doing within their everyday musical lives. Through these in-depth scenarios, and the findings of this exploratory research, it is possible to provide educators with a better understanding of the non-traditional forms of musical learning that their students are engaging in, and the affordances of 21st century in-person and virtual spaces for learning. This research, through a comprehensive literature review that informed the proposed framework for innovative learners, is theoretically grounded in how young people are connecting, learning outside formal contexts, and multimodally making meaning in their musical daily lives, while then providing data from the young people's perspectives of what the youth are actually saying about their engagement in their musical activities.

If the purpose of education is to provide students with the skills and knowledge to become full participants in their creative, public, and social communities (The New London Group, as cited in Cope & Kalantzis, 2003), then it would appear that music education would also hope to encompass those goals. To enable youth to achieve this inclusive sense of community through music education, music educators would need to understand how their students experience music both in and outside of school. More so, educators need to be able to facilitate and provide their students with the opportunity to contribute to their own knowledge and skills to their music education. By envisioning music education within classrooms as a space to equally explore formal curriculum in tandem with the three interrelated areas of the proposed framework for innovative learners, music educators may potentially be able to foster a more comprehensive goal for educating youth to become a part of today's interactive, creative, social, technological, and civic community.

Youth are already learning and experiencing music, and a sense of community outside of school walls, as seen in the resourceful descriptions from the innovative

learners, yet young people do not always have a forum within formal education to express and share their knowledge. Just as Green (2007) poses that informal music learning practices are able to a part of formal music education, it would seem that the affinity spaces found in participatory cultures could also foster a new identity for music education, where music educators build upon their students existing skills and competencies in informal music practices and technology. Many youth engage in informal music learning practices within their online participatory cultures, where they not only encounter music, they are enculturated into musical and technological worlds. The ways in which they interact and share multimodal musical knowledge, and teach themselves musical skills and knowledge, provide them with skills and practices that they bring with them into the classroom.

This research hopes to provide a basis for future explorations of the interconnected and technologically infused world in which young people are engaged in musical activities. Further, it hopes to provide a context for understanding how new forms of 21st century learning and innovation can be embedded into music education as a complement and connection to musical learning in the classroom, rather than merely an addendum to formal music practices. I believe that providing educators with an understanding of these areas and constructs, and their features, may provide a starting point for change for music education to include the meaningful ways that youth are connecting, learning, and multimodally making meaning within their musical lives.

In sum, due to the technologically evolving landscape of young people's musical lives going forward into 2015, and the emergence of innovative learners from these technological affordances in which they are connecting, learning via self-directed means, and making meaning in revolutionary multimodal ways, often unlike their non-innovative peers or previous generations, it is essential for multiple research studies to specifically look at the technological ways that young people are musically engaging. Finally, further development of a framework of understanding innovative learners is necessary, to provide educators, policy makers, parents, and communities with the tools to best foster the positive transformative aspects of these innovative learners' musical lives.

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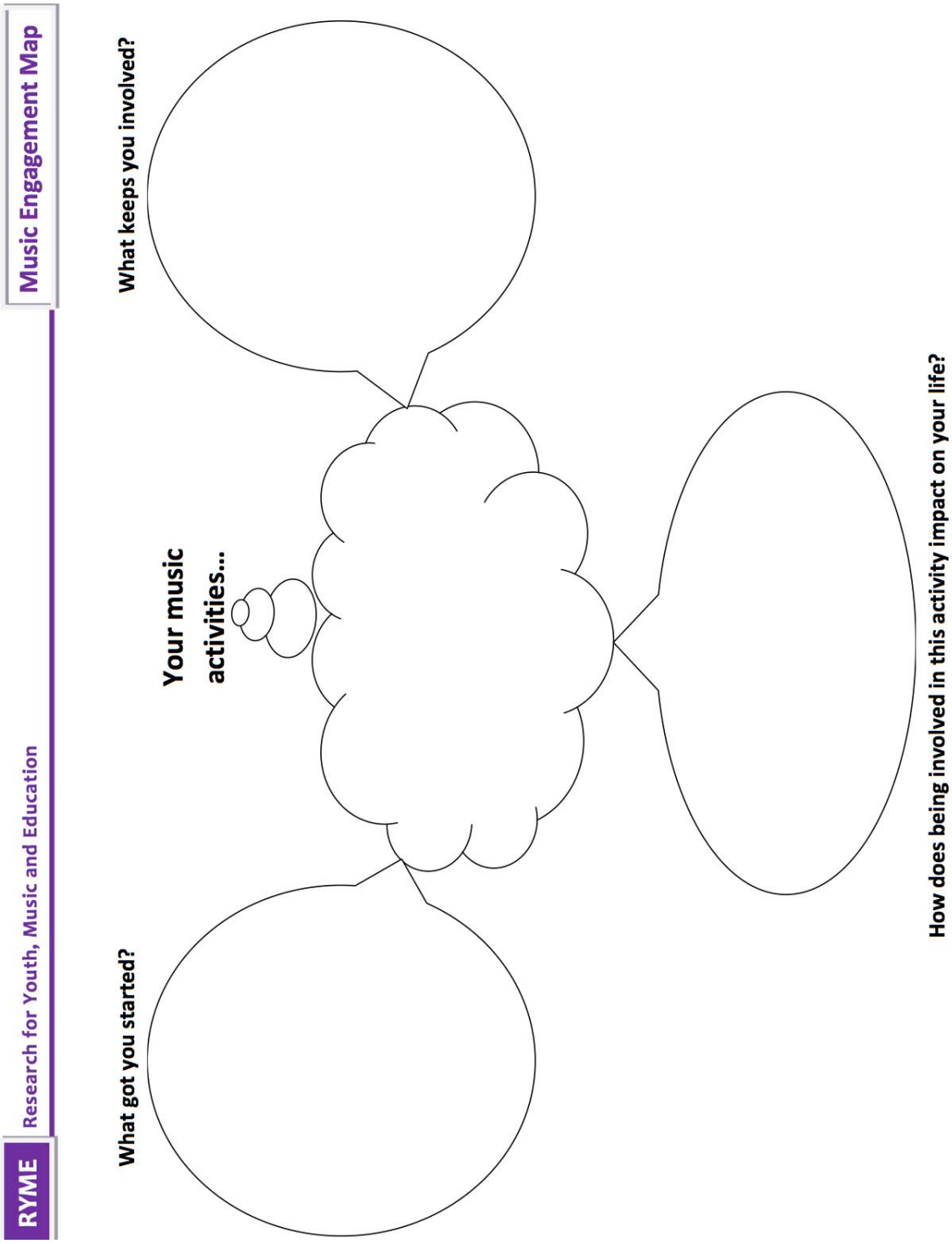
Appendix A.

Music Engagement Map (MEM)



Appendix B.

Interview Protocol

Research for Youth, Music and Education

Youth Interview Protocol

Collect informed CONSENT FORMS from parents and youth (check that both forms are signed)

Record youth's name and demographic information on the STUDENT INFORMATION SHEET

Note digital tape number and say youth's name and school on recorder before beginning (check sound levels and recording time)

My name is _____ and I am here to interview some of the students in your school to find out about your involvement in music activities. I would like to ask you a few questions and give you a chance to tell me your thoughts and ideas about the music activities that you are involved in. This is not a test and there are no right or wrong answers. I would like to record the interview but no one at your school or at home will be told what you say and we will not use your name in the research. You may refuse to answer any question and stop the interview at any time. Are there any questions you would like to ask me about the interview before we begin?

Section A. Your music activities…

1. Let's begin in the centre by listing of all the music activities that you are currently involved in both AT SCHOOL and OUTSIDE OF SCHOOL. Students your age are involved in all kinds of music activities, so try to include everything you do, such as singing, playing any instruments, dancing to music, using a computer in some way to do with music, music video games, or even listening to music.

Write the list of activities on the MEM sheet.

Ask if activity is done mainly **at school**, **outside school** or **both** – indicate this on the sheet

(S = at school; O = outside school; B = both)

Prompts:

Listening to music (write types of music listened to…/describe medium)

Playing any instruments? (write all instruments played/describe ensembles)

Singing? (write what kinds of singing or type of songs sung…/describe ensembles/groups)

Dancing? (write what kinds of dancing…)

Using a computer or video games? (write the kind of activity…)

Are there any other activities you do that involve music? (e.g., composing/improvising, writing about music, etc.)

2. Of the activities we have listed, which activity is the most meaningful to you – the one you do the most or like the most or are the most interested in?

Circle the activity.

NOTE: If listening to music is the ONLY activity, use it for the rest of the mapping exercise. Otherwise, ask about the other activity (if only 2) or say: Other than listening to music, which activity is the most meaningful to you – the one you spend the most time doing, like the most, or are most interested in?

IF possible, MAP up to TWO music activities other than listening to music…

3. How often do you do this activity?

Place code next to activity:
1 = done it just once
2 = few times a year
3 = every month
4 = few times a month
5 = once a week
6 = several times a week

4. How long have you been involved in this activity?

Place code next to activity:
A = just started
B = one to five months
C = six months to a year
D = two or three years
E = four or five years
F = more than five years

Section B. What got you started?

5. For this same music activity, let's write in the left hand circle all the reasons that got you started in the first place.

Write down all the reasons given…then ask each of the following…

6. Do you think it had something to do with who you are as a person? (your own values, temperament, attitudes, motivations, time, abilities, etc.) Probe for what and how?

7. Do you think it had something to do with who was around you at the time? (family, friends, mentor, etc.) Probe for expectations/encouragement/role models – what and how?

8. Do you think it had something to do with the place you were in at the time? (school, church, community, group or organization, etc.) Probe for available opportunities, structure, organization, accessibility - what and how?

Section C. What keeps you involved?

9. Now… for this same music activity, let's write in the right hand circle all the reasons that keep you involved.

Write down all the reasons given…then ask each of the following…

10. Do you think it has something to do with who you are as a person? (your own values, temperament, attitudes, motivations, time, abilities, etc.) Probe for what and how?

11. Do you think it has something to do with who is around you? (family, friends, mentor, etc.) Probe for expectations/encouragement/role models – what and how?

12. Do you think it has something to do with the place you are in? (school, church, community, group or organization, etc.) Probe for available opportunities, structure, organization, accessibility - what and how?

Section D. What do you get out of being involved?

13. Now… let's write in the bottom circle the impact of being involved in this music activity. What do you get out of being involved? What impact does it have on your life?

Write down all the reasons given…then ask each of the following…

14. Do you think it has an impact on who you are as a person? (your own well-being, personal skills, creativity, abilities, etc.) Probe for what and how?

15. Do you think it has an impact on who is around you? (family, friends, mentor, etc.) Probe for support or relationships – what and how?

16. Do you think it has an impact on the place you are in? (school, church, community, group or organization, etc.) Probe for partnership with adults, belonging

to school culture, neighbourhood, organization, integration into a peer group) –what and how?

17. Impacts can be positive things like benefits or negative things like consequences or things you have to give up to do it. Can you think of anything other impact that being involved in this activity might have for you?

GO TO MUSIC ACTIVITY SHEET (MAS)

Section E. Music Activity Sheet (MAS)

Complete the statements about the music activity sheet (MAS) on a 10 point scale from 1 = not at all to 10 = a lot.

After MAS is completed ADD THE FOLLOWING QUESTIONS:

Who do you think is a good musician. Someone that you admire?

Why do you think that ___ is a good musician?

Do you think that you could become as good a musician as ___? Why do you think this?

What sorts of things would help/keep you to/from becoming as good a musician?

Do you think that ____ was born a good musician?

Do you think that most people could become good musicians if they wanted to? (Yes/No) Why?

Future Music: If you could do any musical activity in the future, what would you like to do the most? Why?

If you could do the music activity you have chosen for the future, what do you think would help you to do it or enable you to do it to the best of your ability?

What do you think would stand in your way or make it difficult for you to do it?

What do you think are they most important reasons why young people should be involved in music activities?