Online Music Knowledge: The Case of the Non-Musician

by

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Abstract

Five cases of ‘non-musicians’ seeking to learn how to make music and their use of online resources were conducted with the objective of exploring the information practice of users in the domain of music and how it may be used for the design of music information systems and platforms. The findings in this thesis are situated at the intersection of information-seeking behaviour, information practice, music information retrieval, music education, sociology of music, and user-centered design.

In all five cases (The Relentless; The Musical Silo; The ‘Non-Musician’; The Hobbyist; The Outlier), the use of online music knowledge was situated within a larger process of self-directed learning, as well as the larger socio-musical world of the non-musicians. Effective access to and use of available resources is paradoxically predicated on a non-musician’s ability to articulate their information need using terms with which they are not yet familiar.

The findings articulate the information practice of non-musicians as being characterized by the emergent nature of their information needs and the exploratory nature of their information practice. In particular, the user’s socio-musical world, learning or knowledge trajectories, as well as their modes of learning, offer an innovative approach to understanding and anticipating music information needs.
Acknowledgments

Ideas need to be nurtured; they take time to grow, and they branch off into unexpected directions. While tracing the path along which I have had the privilege to explore my ideas, I was humbly reminded that we do not accomplish anything on our own.

First and foremost, this thesis would not have been possible without the five individuals who shared with me not only their passion for music, but also insights into their personal lives. This thesis was built on their personal stories, and I sincerely thank them for their candidness and generosity.

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Table of Contents

ACKNOWLEDGMENTS ................................................................................................................ III

TABLE OF CONTENTS ................................................................................................................ V

LIST OF FIGURES ........................................................................................................................ VII

1 INTRODUCTION ..................................................................................................................... 1
   1.1 Research Context .................................................................................................................. 1
   1.2 Research Motivation ............................................................................................................ 4
   1.3 Why Music Knowledge? ...................................................................................................... 6
   1.4 Why Non-Musicians as Cases? ........................................................................................... 7
   1.5 Focus of this Study .............................................................................................................. 8

2 LITERATURE REVIEW .............................................................................................................. 9
   2.1 Music as Phenomenon ........................................................................................................ 10
       2.1.1 Sociological Approaches .......................................................................................... 10
       2.1.2 Educational Approaches .......................................................................................... 12
       2.1.3 Summary .................................................................................................................. 14
   2.2 Music as Information and Knowledge ............................................................................. 15
       2.2.1 Music as Information ............................................................................................... 16
       2.2.2 Music Information Retrieval .................................................................................... 17
       2.2.3 Music Information Behaviour and Practice ............................................................. 19
       2.2.4 Music as Knowledge ............................................................................................... 21
       2.2.5 Music as a Knowledge Domain ................................................................................ 23
       2.2.6 Music Knowledge as “Knowing How” .................................................................... 25
       2.2.7 Summary .................................................................................................................. 28

3 METHODOLOGY .................................................................................................................... 29
   3.1 Research Methodology Design ......................................................................................... 29
   3.2 Symbolic Interactionism as Research Framework ............................................................ 31
   3.3 Participant Recruitment and Ethical Considerations ......................................................... 32
   3.4 The Use of Cases .............................................................................................................. 34
   3.5 Conducting Interviews within Research Framework ......................................................... 35
   3.6 Analyzing Data with a Grounded Theory Approach .......................................................... 36

4 THE CASES ............................................................................................................................ 40
   4.1 The Relentless (Allan) ....................................................................................................... 40
   4.2 The Musical Silo (Giles) .................................................................................................... 41
   4.3 The “Non-Musician” (Simon) ........................................................................................... 42
   4.4 The Hobbyist (Chloe) ....................................................................................................... 44
   4.5 The Outlier (Jason) .......................................................................................................... 45

5 RESEARCH FINDINGS .............................................................................................................. 47
   5.1 The Socio-Musical Worlds of Non-Musicians ................................................................. 48
       5.1.1 Curiosity- and Interest-driven Learning .................................................................... 48
       5.1.2 The Role of Institutions of Music ............................................................................. 53
       5.1.3 Section Summary ...................................................................................................... 55
6 ANALYSIS OF FINDINGS

6.1 Situating Information Practice in a Learning Context

6.2 Learning Trajectories of Non-Musicians: Situating Emergence of Music Information Need

6.3 Learning Modes of Non-Musicians: Situating Music Information Seeking Behaviour

6.4 Seeking What We Have Yet to Know: The Information Practice of Non-Musicians

6.5 Towards Knowledge Platforms for Music Knowledge
List of Figures

Figure 1: Situating non-musicians’ information practice within their learning process.

Figure 2: Triangulating information needs, with an emphasis on learning processes.

Figure 3: Situating the emergence of Non-Musicians’ information need.

Figure 4: Modes of exploration inform information practices of non-musicians.

Figure 5: “Trajectories” of exploration as information practices of non-musicians.

Figure 6: The knowledge space within which non-musicians engage in exploration as well as orientation as information practices.
1 Introduction

In this introductory chapter, we will map out the motivations behind this study and situate its relevance within the field of information-related research as well as in relation to fields such as music education and ethnomusicology. This chapter also serves as a preamble to sensitize the reader to the various ways music is conceptualized in those fields and how mediation is used to conceptualize music in this thesis. Such broad conceptual discussions serve as the running thread that ties together subsequent sections on research methodology and research findings. The contributions of this research to existing discourse in information and music research will also be discussed.

1.1 Research Context

*...no musical style has ‘its own terms’: its terms are the terms of its society and culture, and of the bodies of the human beings who listen to it and create and perform it.* (Blacking, 1973, p. 25)

When the topic of my research around “Online Music Knowledge” comes up in conversation, it elicits a wide variety of responses from others, most of them filled with enthusiasm. I become engaged in conversations about online tools that allow non-musicians to compose music with no prior knowledge of musical composition, online communities where composers are sharing their music with each other, hacker-musicians that build their own electronic instruments and get together to jam once in a while, and inevitably Shazam, the iPhone app that will name and identify a piece of music that is playing. The most common response by far, however, is the story of how they once tried to learn music online, and now that I mention it, how they should have a go at it again.

The fact that the research topic elicits such immediate and yet diverse responses is telling in a few ways: firstly, everyone knows about music in some way and can articulate their take on it one way or another, even if it is total apathy and disinterest. Secondly, whatever it is that one knows or understands about music, their immediate response reflects a particular understanding that is ideological in its nature, in that part of that immediacy arises from the assumption that
they are talking about an inherent quality of music that should be as obvious to others as it is to them. In reality, each response reflects a delineated aspect or perspective of the continuum or spectrum of ways that one can engage with music, as mediated by enculturation, personal experiences, institutions, or popular media, for example. The nature of their response is almost inevitable, as ultimately “music has nothing but mediations to show: instruments, musicians, sores, stages, records.” (Hennion, 2003, p. 83) As such, there is no artifact that we can identify as music in some absolute form for research. To say that we study the way music is mediated is essentially the same as saying we are studying music. Instead of examining music through the lens of Western European music, particular genres or communities and cultures, this thesis examines music through the way non-musicians engage with it as part of a self-directed learning process. By studying non-musicians and their processes of self-directed learning, this research also aims to explore information seeking behaviour and practice within the domain of music, and to identify information needs that are unique to non-specialist users trying to navigate unfamiliar territory.

Music Information Retrieval (MIR) remains the dominant paradigm that specifically addresses an information or knowledge-related challenge that is unique to the domain of music. However, the spectrum of its inquiry is driven by commercial demand and focused on serving users that are consumers of music that are mediated by record companies, talent agencies, and generally intended for mass consumption. The technical frameworks behind MIR also tend to be informed by music theory from the Western European paradigm, breaking digital encoded forms of recorded music down to structures of a musical nature that are unique to particular genres of music. While the definitions of these musical structures and genres are contentious ones, the paradigm of MIR research has been necessarily narrow in part out of a need for a shared

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1 The concept of inherent and delineated meanings within music is drawn from Lucy Green’s 1988 book, Music on Deaf Ears.

2 Mass consumption refers to the mode of distribution, not types of music such as popular or indie music.
objective in an already specialized field of IR research, and also in part out of the commercialization of research that has immediate applications in support of the recording industry’s interests.

As we look to other approaches to information research, music is recognized as a specialized area of inquiry within fields such as librarianship, archives, and more recently, digital humanities. In these instances, music is often treated as documents, or in its ‘textual’ form, drawing on music’s published manifestation as music scores and bibliographic records. Even musical instruments are treated with a similarly data-driven representation in order to facilitate research. While the potential to bring us closer to discovering new ways through which our knowledge of music can be organized and shared exists, the research agenda is geared towards institutional use and, thus, once again addresses the challenge of music-related information or knowledge within a limited scope. While the scope of such research allows us to consider broader issues such as the nature of music knowledge—something we will define shortly—the direction of inquiry remains driven by the needs of users within an institutional setting, as shaped by the practical needs of most music libraries and archives.

Beyond these approaches in information research, there are very few examples of substantial research efforts in which music plays a role in some way. The limited range of perspectives on music within the field of information research presents a great opportunity for exploration, particularly in the potential to gain new insight into common and emergent problems related to information seeking, knowledge organization, critical studies, and policy development. Such a research direction is ripe for development, and would be complementary and highly relevant to contemporary research in fields such as copyright law, cultural anthropology, music education, and ethnomusicology.

Music is possibly one of the most pervasive and popular forms of information being exchanged within the context of rapidly evolving information communication technologies (ICTs). The rapid development of audio formats in the 20th century was unmatched by that of other forms of media such as books and video. In 2000, Napster, a peer-to-peer music file sharing software, became one of the first international examples of how corporate interests are rubbing up against
the decentralizing effects of the internet, dealing to all stakeholders a reality check of copyright laws’ ability to manage and police the media sharing behaviours of consumers online. New business models emerged to cater to the emergent consumption behaviour of music, with new music information retrieval technologies designed to facilitate more innovative ways to find and discover music.

Music offers a lens through which we come to understand a world. To know music is never in its absolute sense; no music exists in a social, historical or cultural vacuum, and to conceive of it as such is in and of itself ideologically situated. This is the premise from which we explore the topic of online music knowledge within the field of information studies.

1.2 Research Motivation

...first, that new technology has presented a constant threat to established interests in the music business, and, secondly, that the outcomes of the ensuing struggles for control have had a major effect on the nature of the music which becomes available to the public. (Martin, 2000, p. 210)

The information seeking behaviour and information practice perspective is one of many through which music knowledge can be explored for the purpose of informing the design of systems and platforms specifically for the domain of music. The ideas discussed in this thesis have emerged as part of a pilot project conducted in 2009 on the music information seeking behaviour of participants in a flamenco guitar workshop. Ongoing collaborations with Dr. Kiku Day on the phenomenon of Shakuhachi transmission online and conversations with Greg Adams regarding the design of the Banjo Sightings Database Project (see Acknowledgements, p. iii) have also provided important perspectives on the real-life challenges of designing systems and platforms to support the transmission and preservation of music knowledge.

Developing knowledge platforms to support the exchange of music or other non-textually based knowledge presents a unique set of challenges. It requires collaboration between information professionals, domain knowledge experts, and most importantly, input from users for whom such platforms are being developed. In listening to the stories of individuals who pursue music knowledge in an online context, complex relationships between traditions and innovation
emerge, with tensions that are not easily resolved. While self-directed learners, particularly those that have limited engagement with institutional forms of learning, can be quite innovative in the way they negotiate these tensions, there is certainly room for developing online platforms that provide additional support for the browsing and discovery of music-related knowledge.

This thesis contributes to our understanding of the information practices of users, in particular those that have an interest in resources related to the domain of music. Specifically of interest to this study are individuals (referred to as non-musicians throughout) who have not been exposed to any regular music instruction over a significant period of time via either formal lessons with a teacher or interactions with a family or community member on a casual basis. While this research will inevitably touch on issues related to music education, it is motivated by an interest to develop domain-specific knowledge platforms that can support modes of study that do not necessarily fit into traditional institutional paradigms.

Recognizing that there are many ways to tackle the topic of online music knowledge, this study focuses on one particular process through which music is accessed or mediated: namely, the self-directed process of learning an instrument. This is done with the intent of offering a complementary perspective to the existing body of research on user behaviour in the field of music information retrieval (MIR), which tends to focus on behaviours related to music consumption in order to make ‘smarter’ recommendation and other music distribution systems. Better understanding of the unique information practices of users who engage in this learning process can be used to inform the design of music information systems and knowledge platforms.

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3 This definition is drawn verbatim from the initial research proposal. The rationale and subsequent transformation of the definition of the non-musician as subjects will be discussed in more detail in the methodology section.

4 By mediation, we mean the means through which we experience something. This concept will be discussed in more detail in the literature review.

5 Listening itself is, of course, also an act of mediation; a fuller discussion can be found in the literature review.
1.3 Why Music Knowledge?

The use of the term music knowledge in this study acknowledges the situated nature of the types of information people are seeking in support of their pursuit of music. However, for reasons of conventional usage, music information will also be used interchangeably throughout this thesis.

Whether someone wants to learn more about a band, an instrument, a musical style, a specific song, or a cultural practice, the type or genre of information they are looking for will differ wildly depending on how they mediate their understanding and engagement with music. This is also in contrast to the way music information is treated within MIR research as digitally encoded musical data from which musical information—such as musical key, chord, pitch, and rhythm—can be isolated and extracted as information.6

Music knowledge is distinguished from music information by its ephemeral and embodied nature, and its transmission in both written and oral form. It acknowledges the socially-mediated nature of knowledge in general, as well as the multiplicity of ways in which it is manifested in its temporal-acoustical form. In other words, music knowledge is not limited to dominant paradigms of understanding or valuing music, but rather casts a larger net to encompass music in all its different forms and meanings to different people and societies around the world.

This perspective informs our thinking across a spectrum of issues related to the transmission of knowledge, the production of music, inter-disciplinary approaches to music research, and the role of technology and emergent digital spaces, all of which mediate our experience and understanding of music in some way.

6 The iPhone app *Shazam* is one example of how MIR research, which is a highly interdisciplinary field within itself, has commercial applications.
1.4 Why Non-Musicians as Cases?

The title of ‘musician’, as it is commonly used within many Western European languages, carries with it the implications that musical ability is not common to every individual, and that it confers a social status that is earned in some way. The title is invariably tied to a shared ideology about the value and place of music in a society, an ideology which is perpetuated by the very same institutions whose existence relies on those values remaining as they are. These are ideologies about what constitutes as ‘good’ music, how does one ‘properly’ learn music, what is ‘worth’ listening to, and the class implications of an individual’s musical inclinations. Certainly such ideologies are questioned or subverted by individuals and groups large and small, but it is rare that they alter the fundamental way a society has generally agreed on as the ‘normal’ or ‘common sense’ way of understanding music.⁷ “Non-musicians” as cases—as defined earlier—allow us to pay attention to these larger issues while learning about the information practices of individuals who engage in self-directed learning of music.

The study of non-musicians also occurs in the field of music education and ethnomusicology. Research in music education has traditionally focused on institutional learning within public schools, conservatories, or university faculties of music. There are exceptions where the focus has been on the informal processes of learning music outside of institutional settings, but the findings are still related back in terms of institutions as rationale for education reform.

Research conducted by ethnomusicologists are not explicitly about music knowledge, but they seek to understand rich and complex musical discourses around the world in contexts that have traditionally been neglected by institutions of knowledge in the West. While ethnomusicological research all share a common anthropological and socio-cultural approach to music, their research output is as diverse as there are cultures in the world, as there are communities of practice within those cultures, and as there are social, historical, economical and political lenses through which

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⁷ A discussion on how ideologies around music are mediated can be found in the literature review.
they can be understood. In comparison, research in music education seems constrained by a focus on making a contribution to educational research, while ethnomusicological research appears to lack a common trajectory as each scholar draws on their unique combination of personal interests and experiences.

1.5 Focus of this Study

The purpose of this study is two-fold in its attempt to address the following:

1. What is the nature of information seeking behaviour and practices in the domain of music?

2. How can information seeking behaviour inform the design of music knowledge platforms?

The five cases of “non-musicians” in this thesis offer a way for us to study domain-specific information seeking behaviour and practices in everyday life contexts.

During the research process, the intersection of these two fundamentally different yet related inquiries created a dialogue that both broadened and became focused at various stages of research. While the findings primarily emerged from the data as part of the grounded theory approach, exploration of various literatures throughout the research process situates this study within a larger trajectory of music research across disciplines, as we will address in Chapter 2. The concepts discussed in the literature review lay the foundation for the design of the research methodology, which used symbolic interactionism as a research framework and grounded theory for analysis.

Having set the conceptual stage, each of the cases are properly introduced in Chapter 4 before we explore each of them in more depth under thematic headings in Chapter 5. The themes are organized into larger topics that articulate the socio-cultural world in which they are situated, the way their process of self-directed learning is shaped, and the use of technology and online resources within that process. Finally in Chapter 6, we present further analysis of the findings by drawing on concepts related to expansive learning and platforms for knowledge creation in order to discuss the emergent and exploratory nature of information practice among non-musicians.
2 Literature Review

Music has nothing but mediations to show: instruments, musicians, sores, stages, records. (Hennion, 2003, p. 83)

The ways to study music are limited perhaps only by the human experience and imagination. To acknowledge this diversity while adhering to a relevant definition of music for our purposes is not a simple task. Antoine Hennion, a French music sociologist, adopts the view of music neither as a subject nor an object. To study music, he argues, is to study the way music is mediated:

Music acts and moves, in relations to other mediations; it transforms those who take possession of it and do something else with it. Conversely, it does not denote the same thing, depending on the situation and the time. This co-production, the co-formation of a music and of those who make it and listen to it (with other activities) can be the subject of a more balanced sociology of music, where sociology has as much to learn from music as vice versa. (Hennion, as cited in Hennion, 2001, p. 3)

The concept of mediation, particular in its relation to defining what music actually is, points to the fact that we do not have ‘direct’ experiences of music in an absolute sense. There is no object that we can discern called ‘music’, without the help of some form of mediation, whether it is in the form of a recording, an instrument, a voice; music is also projected and presented to us through some form of mediation.

We will draw on this notion of mediation as a way to understand music throughout the literature review. One of the contexts through which music is mediated is of course its mode of study and inquiry. In the first section of the literature review, we will highlight some of the ways research in sociology and education have approached the task of understanding music as a socio-cultural phenomenon, focusing on theories that we will draw on in the discussion of the research findings. In the second section, we will draw on the field of information research to understand the way music is conceptualized as information and as knowledge, in order to articulate the reasons for speaking of ‘music knowledge’ as a related but distinct concept to music information.
In the last section, we will explore the ways that music knowledge is transmitted, particularly within the context of communities and the internet.

### 2.1 Music as Phenomenon

...the role of the intellectual is ‘to attempt to see on a large scale, to be in full possession of a multiple, and [...] connected intellection’. And this involves a journey through ‘multiple times, spaces and cultural formations’, in which the task is ‘resolutely [to] open a new epistemological spectrum and read the colours that our prejudices had previous erased.’ (Serres, as cited in Born, 2010, p. 209)

Music is the object of study in many disciplines and the subject of interest and engagement in many contexts. However, the pervasiveness of discourses about music is not reflective of the unity of that discourse. The way cognitive science and the social sciences approach music, for example, are remarkably different, each addressing a particular aspect of music within the paradigms of their own disciplines. In the humanities—where music is treated as performance, as socio-cultural artifact, as theory, as history—there is a complex ideology of music that is perpetuated by their respective institutions, and that frame the dominant discourse on what is ‘good’ music or what is ‘valuable’ music. There is a tendency within the humanities to reify music as a universally relevant human phenomenon, while being skewed towards a Western European perspective. Even when it reaches out to include music from cultures around the world, it is inevitably understood and disseminated through the same ideological lenses.

In this section, we will look at the way music is studied through the lens of sociology and education. The former informs the way we have conceptualized “non-musician” in this study, and the latter informs the way we conceptualize the process of learning music.

#### 2.1.1 Sociological Approaches

Investigations of artistic engagement have produced concepts that illuminate a diversity of social phenomena, including processes of social change and social reproduction, the role of objects and practices as status markers, and the use of cultural objects and texts as media for constructing everything from individual identity to social movements and national heritage. (Acord & Denora, 2008, p. 223-224)
Music is woven right into the fabric of our own society and other societies around the world. Whether in its presence and absence, in the music makers and the instrument builders, or in the virtuosic soloists or chorus of voices at a gathering, music and ‘hidden musicians’ (Finnegan, 1989) can be found all around us if we pay attention. The sociological approach to music has never been satisfied with looking at just the music (as an aesthetic approach would be), but it is interested in the various actors, communities, institutions, and their interrelationships with one another that makes music possible.

The exploration of music as an embodiment of social ideologies in high art, mass culture and social institutions (Shepherd, Virden, Vulliamy & Wishart, 1977), as a unique set of participations involving composing, listening, and performing (Dasilva, Blasi & Dees, 1983), and in the meanings of particular songs within social-historical movements (Denisoff, 1983) show just some of the ways by which social process can be analyzed through a musical lens. Howard Becker’s (1982) analysis of the art world—which contains discussion pertaining to music—offers a comprehensive framework through which all of our artistic and creative activities can be understood. He emphasizes the need to understand the complex interactions and relations that shape the normative understanding of common words such as ‘art’ and ‘craft,’ and prevent us from thinking very deeply about the actual meaning as it manifests in the world.

The sociological approach to music can also be found in the world of music research and scholarship, where it is often used to push beyond the conceptual boundaries of the disciplines as defined by centuries of musical practice within the Western art music traditions. Georgina Born, an anthropologist and musician, advocates for an approach to understanding music that “enables us to recognize the startling diversity of music’s existence in the world,” and to avoid the tendency for inertia within the field that can “obstruct that recognition” (Born, 2010, p. 210). Her research draws on critical theory, cultural policy, and cultural production and institutions, as well as theories of mediation, in order to articulate a view of music as it is experienced through the full spectrum of the human experience as the subject for research by music scholars.

It may come as a surprise to see music’s boundary-expanding quality requiring advocacy within the field of music studies, a field that is not without its own intra-disciplinary differences.
between performance, composition, education, musicology, ethnomusicology, and other finer distinctions. Becker (1995) uses music, in particular classical music, which has stayed essentially the same for the last 400 years, to illustrate the nature of inertia, which can be “the most insidious exercise of power” (p. 307). Our submission to this form of power is often unrecognized, as it simply “consists of letting people whose business it is define what that business includes, which versions of it are serious and important, and which don’t matter much.”

The complex layers of “practices and relationships” become integrated into a ‘package,’ and the more expansive and interrelated those layers are, the more inertia there is. The world of classical music making begins in our public schools, while existing institutions and infrastructures facilitate the production and distribution of music and, of course, the preservation and dissemination of knowledge. Normative practices go through the pipes faster, so to speak, while innovative and different ways of producing, distributing, preserving, and disseminating music take a lot more work to reach a much smaller group of people. In other words, musical innovation and creativity is not discouraged, but the price is high and not everyone can afford it. In Section 2.2, we will refer to Becker and Born’s conceptualization of music vis-à-vis social worlds to clarify our distinction between music as information and knowledge.

For many who did not grow up with music making at home, but certainly some kind of music listening, education is a context through which they were first introduced to music making. Our research subjects took different things away from their experience of public music education, which no doubt influenced in part their reason for engaging in self-directed learning. In the next section, we will look at the educational practices of music within public schools, extend Becker’s articulation of inertia as institutional power, and explore a context in which many first experience music making or music learning.

2.1.2 Educational Approaches

In this study, we situate the information practice within a larger context of learning, or more specifically, self-directed learning. This ‘situated-ness’ is one of the important distinctions that inform our conceptualization of music information and music knowledge throughout. Literature
in the field of music education does not directly address self-directed learning *per se*, as the research in education is intended for use by educators in instructional contexts. Rather, studies of *informal learning* are usually used as frameworks that educators can use as part of their pedagogical toolkit. Within the context of self-directed learning, where educators are not present, an individual’s learning and knowledge seeking strategies characterize such a learning process.

*Self-directed learning* as a term only occasionally turns up in literature that is primarily about adult or continuing education. It is also used to describe online or distance learning. No usage of the term was found to address the kind of everyday, self-directed learning that the non-musicians in this study are engaged in. *Informal learning*, a closely related term, is used most often to describe learning that occurs outside of a classroom setting, or simply refers to a form of life-long learning. However, its usage has been found in studies of learning that closely match the type of learning that the non-musicians in this study are engaged in. A recently published master’s thesis on adolescent girls’ informal learning reflects a shared interest in exploring emergent practices by looking at an often over-looked population:

*The thesis attempts to explore the processes and strategies that adolescent girls use in their self-directed informal learning activities in order to learn about multiple music making skills... It also attempts to explore the learning processes and strategies of a population whose musical practices are still very much in development.* (Mesbur, 2006, p. 13).

Lucy Green's (1988) critique of music education highlights the larger socio-cultural paradigms that has traditionally informed the conceptualization of music within our schools. Her research on the informal learning strategies and processes of popular musicians has informed the development of an alternative classroom-based pedagogy that draws on learning techniques used by popular musicians, such as learning by ear. The pedagogy is meant to offer a curriculum that has relevance to young people’s musical worlds, instead of imposing musical values and beliefs that are incongruent with their everyday realities, which actually turns students away from the pursuit of music (McPherson, 2005). Like Becker and Born, her approach to music education research was situated within an understanding of musical worlds:
Musical ideologies and practices, together with musical products, form a little social system, or musical world: a network of functions both mental and material, supporting and legitimating one another, yet also fragmented, divided and oppositional. (Green, 1988, p. 11)

Green’s adaptation of the informal learning of popular musicians into classroom pedagogies (see Green, 2001, 2003, 2008, 2010) was an attempt to transform music education from within, and to provide students already within the school context with an alternative pedagogy that explores music in ways that current music curricula do not. Her insights into the nature of music learning identified economic class as a determining factor in student success within the public school system. The fundamentals of Western classical music—such as reading music or the ability to play an instrument—are usually mastered within the context of private lessons. Students with the ability to access such lessons are positioned for success in the music curricula of public schools, while those without the means to do so usually do not excel and choose not to continue with music electives. Despite having a mandate to provide music education for all, public schools do more to discourage students from discovering their musicalities by offering an ideologically driven curriculum that validates only one particular way of knowing music, than if students were simply given free reign to engage in whatever musical interests they already have without prejudice.

2.1.3 Summary

Music itself is a boundary that is too impervious. Depending on the case, it either effectively outlines the precise borders of a practice isolated from others or, on the contrary, has to be ‘reconfigured’ within a larger set, from outings with friends, parties and shared listening to the same music, to a set of strongly integrated cultural elements. (Hennion, 2001, p. 18.)

As we have seen, music is always a mediated object whose existence relies on the mediating agents, many of which would not themselves exist without music. It is unavoidable that our discussion about music is situated within a social and cultural context. A critical awareness of music as an ephemeral object is necessary as we have a tendency to refer to music as a universal phenomenon that is common as a manifestation across human cultures and experiences, as exemplified by the field of music education. Such tendencies should be of particular concern
when dealing with music within the field of information studies, as the way we conceptualize music drives the way we study music information and knowledge.

2.2 Music as Information and Knowledge

The decision to use “music knowledge” instead of “music information” is informed by the belief that the situated and mediated nature of music is an important quality that is too often neglected in music-related research. Becker (1995) muses on a common but unnoticed situation in which researchers involved in the domain of music often find themselves. He speaks about the process through which he started writing the article on the nature of inertia by using the world of classical music-making as an example:

*I began by referring to John Cage’s catholic and democratic notions about what constituted music [“Music is the moral evaluation of noise.”]. But then I pretty much proceeded, as most sensible scholars would, to ignore those ideas, by accepting the notion that music is what is conventionally thought of as music, which is to say professionalized music someone makes a living by. (Becker, 1995, p. 307)*

Georgina Born (2010), directing her critique to music scholars, is much less forgiving of this unreflexive approach to research, particularly as it manifests in the ideological divide that separates researchers in fields such as musicology, ethnomusicology, and popular music studies:

*…it is notable that it has taken until the 2000s – more than a century after music recording began to transform the nature of musical experience, and 30 years after popular music scholars began to write on recording, for the first large-scale musicological initiative to appear: the UK’s Centre for the History and Analysis of Recorded Music (CHARM). While this is a welcome development, it indicates the profound dislocation that has existed between the philological orientation of score-based musicology and the aural-oral nature of recording...where it replaces the score as the primary medium of musical representation, education and circulation. (p. 235-236)*

In the field of information studies, the exploration of the domain of music in all of our sub-fields such as knowledge management, information retrieval and knowledge organization, has generally been minimal. The highest concentration of efforts can be found in the field of music
information retrieval (MIR), which itself is a relatively young field of research that has only been established in the last 20 years (Anonymous, 2006). While it is a field that is “largely dominated by the computer science and engineering disciplines” (Laplante, 2008, p. 12-13), with the retrieval of music documents such as scores and recordings as the primary research interest, it is an ever expanding field with champions actively seeking to better understand the human perspective within MIR (see Cunningham 2002; Cunningham, Reeves & Britland, 2003; Laplante & Downie, 2006; Laplante, 2008, 2010a, 2010b; Lee, 2010; and Lee, Downie & Cunningham, 2005, as examples.)

Based on the dynamic nature of musical worlds as described by Becker, Born and Green, MIR’s emphasis on musical scores and recordings would appear to be an extremely limited perspective through which to mediate our understanding of music. The use of the word ‘music knowledge’ in this study is used in order to draw attention to the nature of information seeking when situated within any real-life context (in our case, the context of self-directed learning). The idea that there is a qualitative difference between music information, as conventionally used and defined in MIR research, and the music knowledge that non-musicians are seeking in this study is an important distinction throughout this study.

We will explore more deeply current research in MIR and information seeking behaviour, as well as conceptualizations of knowledge within domain analysis, and the idea of tacit and embodied knowledge in order to consider how our epistemological assumptions ultimately impact the way we address information-related challenges within the domain of music.

2.2.1 Music as Information

Music Information Retrieval (MIR) and Information Seeking (IS) are two areas of information research that have the most developed approaches to address information-related challenges within the domain of music, as well as the most potential to develop new insights for the field of information research at large. The nature of both MIR and IS research is such that they are much more reliant on their parent paradigms in information studies, and have not yet fully explored the implications of working with music as a domain.
2.2.2 Music Information Retrieval

The focus on digital documents related to music, coupled with the rapidly evolving business of selling music and consumer behaviour in relation to buying and listening to music, have made MIR research a highly specialized and competitive field as “traditional ways of listening to music and methods for discovering music, such as radio broadcasts and record stores, are being replaced by personalized ways to hear and learn about music.” (Casey et al., 2008, p. 668) The focus on music that is used for personal listening and MIR’s roots in Information Retrieval (IR) has informed definition of what constitutes music information and what problems they set out to address. In this section, we will explore the epistemological framework that informs what constitutes as ‘music’ within MIR research.

Despite the recognition of “music’s complexity and plasticity,” which makes “the selection of possible retrieval elements extraordinarily problematic” (Downie, 2004, p. 15), the majority of research efforts are focused on exploring the ways metadata, high-level music content (harmony and melody), and low-level audio features (audio signals and spectrums) can support consumer behaviour such as music discovery and managing personal music libraries (Casey et al., 2008). Due to the focus on music in its audio form, information needs that are often identified—such as bibliographic, lyrics, genre, similar works, affect or mood (Downie & Cunningham, 2002, p. 300)—have generally excluded those that would occur within the context of learning. For example, the need to find out “how to play the piano” is not represented nor addressed.

Many of the major challenges that MIR has been struggling with—such as issues of evaluating MIR research (Downie, 2004) and designing systems that address the real-world needs of users (Cunningham, 2002, Laplante, 2008)—are related to the scope and definition of what music information entails. MIR researchers seem aware of this need in the way they describe the nature of the challenges they face and in the suggestions they offer.

On the challenge of defining relevance within MIR, a common area for evaluating IR systems, Byrd and Crawford (2002) writes:
'Information,' the explicit goal of conventional IR, has an unquestioned correspondence (albeit complex and ill-defined) with the concepts expressed in words in a query. The notion of ‘relevance,’ on which standard IR strategies depend, is bound up with the relations between concepts in a way that has little or no parallel in music. (p. 260)

On the need for more understanding of users, Downie (2004) notes without exaggeration that the “disconnect between assumptions commonly made by MIR researchers … and the real-world situation is remarkable” (p. 16). Even when a research agenda for better understanding of real-world needs is articulated—a research direction with great potential for identifying new areas of MIR research—one finds the scope to reflect a bias for problems that are industry-driven or consumer-oriented, whose solutions rely on the strengths of computer science and engineering:

There have been very few user studies that attempt to understand and evaluate the way that MIR tools get used by nonresearch communities. New research is required to better understand: requirements on user control of search; integration of MIR with professional work flows such as music production and engineering, musicology research, and music archiving; and how users navigate million-song music download services. (Casey et al., 2008, p. 693)

Research that supports musicological research may be the exception to the industry-bias I mentioned above, but musicology is only one of many approaches for conducting music research (see reference to Georgina Born’s critique in Section 2.2). While “melodic pitch will not be adequate for anywhere near all users and situations” (Byrd & Crawford, 2002, 259), it is ideally suited to extending and supporting the musicologist’s use of music score analysis as a major research methodology.

Research in the last ten years have shown an interest in categorizing music-related queries based on surveying a large student population (Lee & Downie, 2004), interviewing user groups such as non-music experts (Kim & Belkin, 2002) or online reference services such as Google Answer (Bainbridge, Cunningham & Downie, 2003), as well as observing music information behaviour in-situ such as in music stores (Cunningham, 2002; Cunningham, Reeves & Britland, 2003). There is a growing recognition of the role that culture and language can have on the way music-related queries are formed (Lee, Downie & Cunningham, 2005), and the relevance of natural
language processing methods to analyze music-related queries (Lee, 2010).

By and large, researchers recognize that the nature of music information seeking is highly exploratory and social (Laplante, 2008, 2010a, 2010b; Laplante & Downie, 2011), but there is also an awareness of the need for more user studies in a variety of contexts. There is no doubt that the MIR researchers' tackling of system-focused challenges is essential for the development of foundational technologies that will be used to enhance the functionalities of music-information systems. However, our understanding real-world music information needs remains limited, thereby making user-oriented studies a much needed area of research that, taken in conjunction with research that addresses issues at the systems level, can bring us closer to designing systems that solve real-world problems. Below, we will consider a few research approaches for studying information behaviour and practices that can account for a need of a more nuanced understanding of music as information.

2.2.3 Music Information Behaviour and Practice

Research in information seeking behaviour and information practice are great examples of fields of inquiry that emerged out of a need to understand the way people use information systems for the purposes of system evaluation, and developed into a field that recognizes the need to account for the larger social context within which system use and user needs are situated. Many well-known information seeking models show an interest in the external contexts within which the user and their information behaviour are situated (see discussions in Ellis, 1989; Kari & Savolainen, 2003; Savolainen, 1995, 2008, 2009; Wilson, 1999). However, a common difficulty in applying models of information seeking behaviour in system design is that while they offer a perspective on the stages and processes that individuals engage in when information is sought, the models do not easily translate back into a more holistic or situated understanding of the user’s needs. The ever-expanding models that try to account for contextual factors are indicative of a recognition of this limitation (see discussions in Bates, 2005; Courtright, 2008).

Research in information practice, as Savolainen (2007) suggests, reflects an effort to conduct research in information seeking that allows for a consideration of social factors which influences
users’ behaviours, while encompassing the research objectives that are addressed by studies of information seeking behaviour. “The concepts of information behaviour and information practice emerge form different discourse that open alternative viewpoints on information seeking” (p. 110). The two are closely related, and indeed complementary to one another as research approaches.

Speaking in general terms, there is a prominent interest in the information behaviour of users within their professional occupations, as well as information behaviour related to specific roles within institutional contexts and to demographic divisions (Case, 2007, p. 295). Research into music information seeking behaviour have been mentioned earlier and are mostly situated within the MIR community (Laplante, 2008, 2010a, 2010b; Lee, 2010; Lee, Downie, Cunningham, 2005). Recent research has shown an increased interest in domain-specific information behaviours such as those of music scholars (Brown, 2002), ethnomusicologists (Liew & Ng, 2006), and hobby-genealogists (Fulton, 2009). Other innovative approaches include studying the patterns of information behaviours as exhibited by an individual across different situations in order to better understand the role of context (Julien & Michels, 2004).

Another approach to studying information seeking behaviour is by looking at social worlds that have the potential for exhibitions of information behaviour in ways that have previously not been considered. Chatman’s (1996) research into everyday information seeking of female inmates and retired women was developed based on her background in sociology, in an effort to address the need to understand the information requirements of populations on the fringes of society:

As a profession, we are only beginning to serve the needs of other populations. The process of understanding begins with research that looks at their social environment and that defines information from their perspective. (p. 205)

Interestingly, she uses the term “knowledge need and use” (p. 195) in passing while referring to information behaviour the majority of the time. However, the emphasis on social networks as an important source of information makes references to knowledge perhaps more appropriate. In the next section, we will consider in more detail our conceptualization of music knowledge by considering approaches in information research that address the topic of knowledge directly.
As Chatman’s research exemplifies, studies that are situated within the tradition of information seeking behaviour often broaden to consider broader social factors that play a role in shaping the user, while retaining a focus on understanding particular behaviours. Research in information practices has a much shorter history and is still in the process of establishing itself. Across different disciplines, ‘behaviour’ and ‘practice’ already connote a variety of different meanings. Furthermore, “familiar classifications and divisions can be questioned and that at times researchers may move from one discourse to another” (Savolainen, 2007, p. 118) Ultimately, both research approaches address the phenomenon of “the ways in which people ‘deal with information’ ” (p. 126), by focusing on the “needs and motives” of the users to engage in information seeking behaviour, or the “continuity and habitualization of activities” which shapes users’ normative behaviours.

2.2.4 Music as Knowledge

So far, the term *music knowledge* has been used to draw attention to the situated nature of *knowledge*, and distinguish it from the discrete nature of music *information*. These distinctions are meant to be complementary, as both are within the realm of interest within the field of information research.

To consider the ways in which knowledge is conceived in other fields of research, we set the conceptual stage by referring to a volume of essays edited by Mark Hobart (1993), which presents an anthropological critique on the often destructive results of well-intentioned development projects. One of his most salient and powerful assertions is that knowledge and ignorance are not natural binaries, but are in fact socio-culturally laden concepts, which carry with them implicit value propositions. He establishes the issue of knowledge claims and the attribution of ignorance as central themes in the field of development that are often overlooked.

He questions the presuppositions that inform development projects, and explores the dynamic relationship between scientific and local knowledge practices, and the attribution of labels such as “progress” and “modernized” and their inevitable counterparts such as “underdeveloped” and “ignorant.” One fundamental limitation of scientific knowledge, he argues, is that it does not deal
well with “processes which are non-natural and involves reflexivity on the part of the human beings concerned” (Hobart, 1993, p. 3). Such is the domain of local and Indigenous knowledge that has developed outside of the Western paradigm.

Hobart and many of the contributing authors rightly point out that characteristics of local knowledge are more about “knowing how” than “knowing that.” It is a situated practice that is subject to change and highly dependent on context. As such, this quality of local knowledge is often described as what impedes the process of development work, a point which fails to acknowledge that the development models could be lacking in themselves in adapting to local practices. Hobart is careful to outline that he is not advocating for some kind of romanticized return to “native wisdom.” Rather, it is a call to seriously consider the value of local knowledge and its contribution to a people’s wellbeing and agency. Another concern that he raised was the problematic nature of any attempt to “systematize” local knowledge, such as the development of knowledge classification systems within libraries.

It is useful to reflect on Hobart’s (1993) discussion on how knowledge and agency is attributed or practiced within a local context. “Unsystematic” knowledge, such as the kind found in online forums and video-sharing sites, do not fit neatly into an institutionalized paradigm and is adaptive to change, and its associated knowledge practices are emergent in nature. The process of responding to the emergent contexts guides the agent, not presuppositions of what is the right way to respond.

Researchers as outsiders also often ignore the existence of what Hobart (1993) describes as rivaling and “different versions of local knowledge,” (p. 20) resulting in the case of mistaken representation where one particular perspective is identified as the representative view. In fact, the attribution of ignorance occurs both ways: ‘locals’ are often very aware of individual and institutional practices and their impact on their lives; they just may not express it in the same way that the researcher may choose to articulate it.

Our exploration of music knowledge rests on the understanding that local practices—be it cultural, musical, or informational—shape the nature of the music knowledge that are valued.
The non-musicians in our cases, for example, demonstrated a desire for a form of music knowledge and music knowledge transmission that they could not find to some extent, which is why they embarked on a personal process of seeking music knowledge in different contexts.

At an even more fundamental level, what distinguishes music knowledge from other kinds of knowledge is all about knowing how: how to listen, how to make music, how to sing. Musical knowing is first and foremost mediated by our bodies. Our verbal description of our musical experiences and musical knowing are secondary to that embodied experience, which is the primary challenge that music as a knowledge domain presents to information researchers. The Domain Analysis approach to information research offers a framework with which to work in this area of study, while Polanyi’s (1967) concept of tacit and embodied knowledge offers us a way of conceptualizing non-verbal understanding.

2.2.5 Music as a Knowledge Domain

Domain Analysis is a theory as well as a view of knowledge (also known as an epistemology in philosophical discourse) that reframes traditional problems tackled by information science. By altering the fundamental approach to tackling research issues, domain analysis allows for different findings and alternative interpretations of past research. It makes the case that the nature of knowledge can be framed from the perspective of specific domains, addressing a need for pragmatically based research that has been articulated to various degrees by researchers in information science, as well as other orthogonal fields such as the social and computer sciences (Abrahamsen, 2003; Andersen, 2008; Fonseca, 2007; Gruber, 1995; Hjørland 2001, 2002; Hjørland & Albrechtsen, 1995).

As described by Hjørland and Albrechtsen (1995), the field of information science has sustained a prevailing research paradigm that emphasizes the user as the key to understanding how

8 This discussion on Domain Analysis served as the basis for a recently published paper (see Lam, 2011).
information-based services can be improved. Findings about the particular (cognitive process, information objects, modes of communication, information seeking patterns, etc.) are generalized to represent universal truths (sensemaking, cherry picking, etc.). The consideration of “the individual rather than the collective or domain-oriented aspects of knowledge as the focus of research” (Hjørland & Albrechtsen, 1995, p. 410) ran parallel to the paradigm of the scientific inquiry within the natural sciences.

The four prevailing paradigms in information science research that Hjørland and Albrechtsen (1995) identifies and critiques—they are respectively the object paradigm, communication paradigm, behavioural paradigm and cognitive paradigm—are described as being “distinctly individualistic in that they consider the individual rather than the collective or domain-oriented aspects of knowledge as the focus for research” (p. 410):

These mentalistic approaches assume that by studying the users’ behavior or thinking, IS can discover some hidden laws, principles, or regularities which can be used in designing information systems. In the opinion of these authors, IS should not discover these principles from studying the behavior of users, but rather construct such principles as instruments for optimizing certain social practices of an informative nature. (p. 411)

Domain analysis, if understood as a theoretical yet pragmatic perspective on the nature of knowledge, defines its research agenda as the “studies of the larger structures of disciplines, together with theoretical and philosophical analyses in addition to empirical analyses, etc.” (Hjørland & Albrechtsen, 1995, p. 404). Similar approaches to research were reported by the authors to be found in the field of education, cognitive science, linguistics, and information management.

The domain-specific approach allows the researcher to be more reflective and analytical about the epistemological foundation in information science, which is an interdisciplinary field by its nature. It provides theoretical as well as practical frameworks (see Hjørland, 2002) for the pursuit of more holistic research that addresses domain-specific information problems, rather than individual-specific ones. After all, individuals operate within one or more domains, but the
individuals themselves are not representative of the domain’s body of knowledge. The call for research regarding the nature of knowledge is made explicit:

*The domain-analytic approach is concerned with the nature of knowledge, its possible modularity, and the autonomy and explicitness of texts in discourse... Some research must be done in order to establish some qualities and quantities of modularity in different domains or in different kinds of knowledge.* (p. 416)

This paper is situated within the domain-specific approach, not only by virtue of the subject of inquiry—that being knowledge within the domain of music—but also because of the pragmatic objective to support the design of knowledge platforms specifically for knowledge within the music domain.

### 2.2.6 Music Knowledge as “Knowing How”

One of the unique qualities about our knowledge of music is that it is not explicit. The nature of embodied knowing—as exemplified by athletes, surgeons, and musicians, just to mention a few familiar examples—presents a unique set of challenges, related to its preservation, classification, organization and retrieval, that are difficult to address based on existing theories and models within information studies. This embodied aspect of music knowledge is particularly important to our discussion of the cases, each of which represents a snapshot of an individual attempting to learn how to make music. While they ultimately seek to acquire a form of embodied knowledge, they still have to articulate that need in order to find the resources they need or to ask for help as part of that knowledge seeking process. This leads to an interesting dynamic of recognizing that there is a need to search for something, but not always knowing how to articulate that need. The conceptual and practical challenge this tacit dimension of knowledge presents—which is arguably not unique to music knowledge—is perhaps the crux of what makes the music domain such a rich domain for conducting information-related research.

#### 2.2.6.1 Tacit and Embodied Knowledge

*We can know more than we can tell.* (Polanyi, 1967, p. 4)
One obvious challenge of trying to learn how to play music online is a bit of a paradox: How can you search for something without knowing what you are looking for? The problem becomes exponentially more complex as one proceeds. To articulate what you want to learn before you have even started is a process of trial and error, of trying your luck in the abyss of the World Wide Web. More likely than not, you do have a starting point based on your interest in a song, an instrument, or any number of things. To start articulating further what it is you want to learn and how you’d like to learn gets more difficult. Often, the role of teacher is to provide a trajectory and a direction for you along which to progress in your learning pathway, but information, even if it is a curriculum or a lesson plan, does not really amount to the same thing. For one, you are not exactly qualified to implement those lesson plans, and the important element of feedback is obviously lacking. This echoes the paradox that Plato proposed in *Meno*:

\[
\text{...to search for the solution of a problem is an absurdity: for either you know what you are looking for, and then there is no problem; or you do not know what you are looking for, and then you cannot expect to find anything. (Polanyi, 1967, p. 22)}
\]

Despite this apparent paradox, we are obviously capable of identifying problems or information needs, and going about solving the problem or satisfying our need. How we go about that may not be easily articulated except with hindsight. Polanyi (1967) observes this phenomenon in terms of scientists’ experiences with scientific discoveries, but his insights are applicable to a variety of contexts in which a problem has to be identified and solved:

\[
\text{It is commonplace that all research must start from a problem ... But how can one see a problem, any problem, let alone a good and original problem? For to see a problem is to see something that is hidden. It is to have an intimation of the coherence of hitherto not comprehended particulars. (p. 21)}
\]

Encompassing ideas about intuition, gut feelings, and hunches, Polanyi (1967) articulates the nature of tacit knowledge, and argues that this is what allows us to ‘know more than we can tell.’ This tacit knowing, as with all of our knowing, is mediated by our physical bodies. It is through a discussion of our body that he articulates the concept of attending to and attending from:
Our body is the ultimate instrument of all our external knowledge, whether intellectual or practical. In all our waking moments, we are relying on our awareness of contacts of our body with things outside for attending to these things. (p. 15-16)

While “awareness of contact” is how we attend to the world around us, our body is how we attend from:

[The world] appear[s] to us now in terms of the entities to which we are attending from them, just as we feel our own body in terms of the things outside to which we are attending from our body. (p. 16)

The source of this awareness is also where our tacit knowledge resides. In the case of music, a pianist may be explicitly focused on the music, while their tacit knowledge triggers every finger movement and application of the sufficient strength with which to strike the keys. As soon as you ask a pianist to articulate every single finger movement, their explicit knowledge ‘fails’ them, and they become unable to perform the music until they focus their attention back to the music and away from the physiology of their movements.

There are also objects that become extensions of our bodies. Polanyi (1967) uses the example of a blind person using a stick to help them ‘see’ where they are going. At the beginning, the process of learning how to use the guiding stick is a process of attending to the object itself. It is only when you begin to attend from the object—when the feeling of the stick hitting an object means more than simply that—in conjunction with your body that this becomes an embodied part of knowing.

Our own body is the only thing in the world which we normally never experience as an object, but experience always in terms of the world to which we are attending from our body. It is by making this intelligent use of our own body that we feel it to be our body, and not a thing outside. (Polanyi, 1967, p. 16)

This conceptualization of tacit knowledge hits on the fundamental need of obtaining knowledge of the ‘knowing how’ category: it is turning an object—be it your body, instruments, or tools—from something that you are attending to, during the initial stage of learning and familiarizing, into something that you are attending from. More importantly, recognizing that tacit knowledge
cannot be ‘retrieved’ or transformed into an explicit form of knowledge is an important step in identifying approaches to information systems that are not designed to facilitate this form of knowledge.

2.2.7 Summary

In our discussion of music as knowledge, what becomes clear is the distinctive way through which music is mediated: it is experienced through our bodies in the act of listening and the act of making. To explore the knowledge domain of music within the field of information studies requires a deep awareness of how embodied and tacit knowing impacts the way we approach problems of information behaviour and articulate users’ needs in terms of music information. It also highlights the conceptual limitation of thinking of music in terms of information, especially once we recognize the tacit nature of much musical knowing. While music knowledge is not ‘retrievable,’ it is situated. In the final section of the literature review, we will explore the concept of community and the online context as contexts within which music knowledge is preserved and transmitted.

While there is an awareness of a “need for scholars from different musical disciplines to work together to solve a variety of musical puzzles” (Fujinaga & Weiss, 2004), the field of information research has unavoidably, for practical reasons, inherited paradigms of its respective sub-disciplines as it explores the unique insights that the world of music can bring. However, what also emerges clearly is that researchers are cognizant of their field’s inherent limits, the opportunities for expanding boundaries, and the need to reach out to other disciplines for insights into how others have solved similar research problems.

The breadth of research that has been covered in this literature review reflects the interdisciplinary influences that have shaped this study from its conceptualization to research and analysis. It also reflects a research approach that acknowledges the importance of situating user research within particular contexts, whether that be a socio-cultural world, a knowledge domain, a media space, or more likely some combination of these and other contexts. All of these issues will be touched on to various degrees in our effort to explore the information practices of non-musicians.
3 Methodology

Having set the conceptual framework that has informed this study, this section will discuss the rationale and approach that informed the design of the research methodology, as well as the processes through which the methodology was applied. Symbolic interactionism offered a reflexive research framework and shared our concern with the blurry boundaries between the objects and subjects of study, while grounded theory offered a method of analysis that suited the exploratory nature of this study. We will discuss in more detail the recruitment process, the interview sessions, and the consideration of “case” as a unit of analysis.

3.1 Research Methodology Design

...all research on culture, including music, exists at the interface of two dimensions of ontology: not only the ontology of the embedded musical or cultural object, but the analytical ontology that we bring to our analysis—and which, through projection onto the object, can either enable us to recognize the startling diversity of music’s existence in the world, or obstruct that recognition. (Born, 2010, p. 210)

The purpose of this study is to explore information seeking behaviour within the domain of music but outside of a traditional institutional setting such as music conservatories and music faculties. In particular, the widespread availability of instructional material for the purpose of learning music is no doubt facilitating modes of music knowledge transmission and acquisition that was hitherto not possible, or occurred at a much slower rate. The scope of this exploratory research encompasses individuals who consider themselves a “non-musician”: an individual who has not been exposed to any regular music instruction over a significant period of time, via either formal lessons with a teacher or interactions with a family or community member on a casual basis.

The choice of the word “non-musician,” and the fact that they are placed between quotation marks, has a reflexive purpose. On one hand, it is easy to see why the participants are defined and described as non-musicians (without quotation marks) in the sense that they are not professionals, they do not make a living from making music, and they have forged very
individual pathways of learning. On the other hand, the way “musicians” are conceptualized, particularly as a profession, is not consistent across social and cultural boundaries. There are many cultures and societies in which music and other so-called “creative arts” are activities that everyone engages in, and in those contexts there exists no concept of being a ‘bad’ singer or a ‘bad’ dancer. There are also examples of cultures in which musicians are not given an elevated status, but are rather considered the profession of the lower class.

The reason for using the term “non-musician” has been addressed in the introduction. Firstly, the use of the term helps us identify a broader community of users that can benefit from the organization of music knowledge beyond conservatories and universities. Secondly, it draws our attention to the assumptions we carry about the way we conceptualize music and musicians. Finally, it also increases the relevance of the research findings for different academic disciplines that are working within the domain of music, such as music education, music information retrieval, and music libraries and archives, to name a few.

Instead of being prescriptive or risk appearing pedantic to the targeted general audience by giving a seemingly authoritative definition, “non-musician” was not explicitly described in the recruitment material. Instead, participants self-identified as such, thus allowing the meaning of being a “non-musician” to emerge as part of the research process.

Individuals who self-identified as having no musical training provided a much richer sample with which to conduct the cases compared to those with experience in conventional musical institutions. It was anticipated that self-identified non-musicians’ conceptualization of music would not be limited by the institutionalized and Western European paradigm of music, which would allow the personal patterns of interaction the subjects have with the world of online music knowledge to emerge without being tinged or informed by socio-cultural norms and conventions within that paradigm. This is not to say that they are ‘free’ from any exposure to such norms and conventions, but that socially normative practices of taking lessons at the local conservatory is not taken for granted as the only way to learn music. By virtue of the nature of their engagement or disengagement with such institutions, the subjects either consider themselves as non-musicians, or are perceived to be non-musicians.
The availability of instructional resources online that are created and made available by different actors within the domain of music has made alternate ways of learning music possible. In order to gain a better appreciation for this emergent phenomenon, this exploratory study began by raising the following questions:

1. How do individuals go about their search for music knowledge?
2. How do they come to acquire music knowledge?
3. What motivates them to seek music knowledge in an online setting?
4. How do they interact with the content and resources they encounter?
5. How do they engage, if at all, with conventional institutions of music knowledge?

As the world of online music knowledge is not one that I am familiar with, it was expected that these questions merely serve as an entry point to engage with actors in the social world of interest, rather than being a rigorous set of questions that is deemed meaningful prior to putting these questions to the test by trying them out in the field. As anticipated, the focus shifted from the seeking and use of online resources for learning music, to understanding the larger socio-musical context through which non-musicians self-directed learning is shaped, and to situate the use of online resources within that larger picture.

3.2 Symbolic Interactionism as Research Framework

"Interactionism is sometimes portrayed (by positivist/structuralist critics) as a subjective social science or a micro-level sociology, but both these images are quite mistaken. Symbolic interaction is intersubjective to the core and envisions the development of language or ongoing symbolic interchanges as fundamental to the human essence (and the human struggle for existence)." (Prus, 1996, p. 22)

As discussed in the introduction and in the literature review, the meaning of music, pragmatically speaking, is always socially situated, and experientially mediated. When research is conducted to study processes that involves music—whether it is information seeking behaviour, learning style, consumer patterns, or any number of other processes—the research methodology must
acknowledge in some way how the research subjects conceptualize music. This is equally true in cases where the researcher has direct access to individuals, as it is when only participant or environmental observation is conducted.

The perspective of symbolic interactionism (Blumer, 1969; Meltzer, Petra & Reynolds, 1975) within the pragmatist’s approach to research offers a refined set of perspectives related to the observation of social phenomena. Blumer, who originally coined the term, describes four fundamental premises upon which this perspective lies. First, an individual’s reactions to things around them are based on what those things mean to them. Second, the meanings of these things are based on the social interaction with, and interpretations of, other individuals and their actions. Third, these meanings are iteratively revised and interpreted by individuals as they continue to interact with people and objects around them. Fourth, the actors that define a world, whether they be individuals or organizations, exist in a complex and dynamic network to one another, each in a state of flux and continually changing themselves and each other.

The literature review conducted thus far supports this approach towards understanding the conceptualization of music from the individual’s perspective, and reflects the objective of this exploratory study to understand the iterative and interpretive process by which these individuals engage in the seeking of music knowledge. During the coding process of the interview transcripts, this framework focused the attention to the way each case subject interprets and understands their world, the actors that compromise that world, and how that in turn informs their learning process and information seeking behaviour. The result of applying this framework throughout the coding process is reflected in the organization of the research findings in Chapter 5.

3.3 Participant Recruitment and Ethical Considerations

As mentioned earlier, participants in the research self-identified as either musically untrained or as a “non-musician.” Our own working definition of a ‘non-musician’ was not made explicit to potential participants, not in an effort to deceive them in any way, but to allow individuals to reveal how they perceive themselves. This is consistent with the symbolic interactionist’s
approach, which acknowledges the multifaceted way in which people generate meaning in the world around them, and act based on those meanings.

While there is a general expectation that the subjects have never pursued music education in any formal sense, or have not been exposed to a high level of musicianship in their surrounding environment, it would be difficult to find subjects who have never picked up a recorder in elementary school, or taken dance classes, and in general totally and completely ignorant of music. In fact, all of us have an affinity to certain aspects of music, whether it is an affinity for recalling melodies, a great sense of rhythm, or the sensitivity level of our aural perception. In other words, the subjects have not had the benefit of Western musical training, either formally (in music institutions) or informally (the regular or occasional tuition of family members or friends). Inevitably, they have participated in some kind of musical activities, such as attending concerts, being shown how an instrument works, singing along in church services, or fiddling around with instruments and music-making on their own or with other non-musicians. The five subjects selected for the cases share at least this important quality between them, even though their personal stories are no doubt quite different.

A general “Call for Participants” (Appendix A) was sent out via email as well as social media outlets (Facebook, Twitter, LinkedIn), and each recipient was asked to forward the call within their own networks. In the exception of the call sent by email, there was insufficient space to identify the research as being part of the University of Toronto (i.e. the 140 character limit on Twitter), while still taking advantage of the re-distribution abilities that are typical of social media platforms. In those cases, the social media profiles from which these calls were announced had clear and publicly accessible indication of the researcher’s status at the University of Toronto, and were linked to a web page (Appendix B) containing the title of the study as well as its institutional affiliations.

The call was deliberately broad in terms of its wording in order to encourage a higher number of responses. As mentioned earlier, the operationalized definition of a ‘non-musician’ was left out intentionally in the recruitment material to avoid the self-selecting tendencies of individuals who either under-estimate the value of their lack of musicianship (i.e. one who considers themselves
so inexperienced in the ‘proper’ ways of learning music that they do not think they are a qualified subject in a study about music knowledge), or individuals who overestimate the value of what they consider “unserious” or “casual” musical pursuits (i.e. one who does not make a living making music, but has had sustained periods of musical training that did not lead to any “serious” pursuits of music).

On the recruitment web page, interested individuals were asked to fill out a simple online form about their music background. The collection of anecdotal accounts of how potential subjects talk about their musical involvements can be instructive in the sense of knowing how those without the vocabulary of the Western European paradigm of music refer to and describe their musical pursuits. During the initial phase of corresponding which each potential candidate, as well as later on during data collection, it was considered important to interact with the subjects by using the language that they are familiar with, and not the language of the Western European paradigm of music that the researcher is familiar with.

The estimated number of hours involved and the duration of the project was also outlined to confirm potential subjects' availability and interest. They were expected to be fluent English speakers to avoid the need for translation. No monetary compensation was offered in order to ensure that the subjects were participating out of a deep personal interest in the topic, and not participating as a way to make money. The five respondents were all accepted as research subjects to serve as the basis for the cases.

3.4 The Use of Cases

*The biggest obstacle to clear thinking about “What is a case?” is the simple fact that the term “case” is used in so many different ways. It is used to refer to data categories, theoretical categories, historically specific categories, substantive categories, and so on. (Ragin, 1992, p. 217)*

The use of “case” merits some discussion, in light of its usefulness as a unit of analysis, as well as the variety of defining features that makes something a “case.” As discussed throughout this chapter, the case of the ‘non-musician’ is a pragmatic yet reflexive one. It represents members of the general population who do not have domain-specific knowledge of music, but have an
interesting in learning more. Such individuals are confronted with a dilemma of having to engage in a learning process whereby one relies mostly on gut feeling, chance discoveries, and access to relevant resources. The availability of resources online, while demonstrating great potential for certain types of music with a wide appeal, such as guitar and ukulele, remains impressive only in terms of its ever-increasing quantity, not in its organization. In particular, without studies into the various users who are engaging in this online space and understanding their perspectives and information needs, we are overlooking not only an opportunity to simply study the way music knowledge is sought online, but a way of reframing problems related to the cultural and social dimensions of information behaviour.

So what is the case of the “non-musician” about within the field of information studies? Being an orthogonal field (Bates, 1999), it is easy for the research trajectory to start resembling those found in closely related fields. In this study, for example, the search for music knowledge supports a process of self-directed learning, which may be of interest to those in the field of education. The type of music being learned and the communities that are emerging online are of interest to ethnomusicologists, sociologists, historians, and cultural anthropologists, each with their own theoretical frameworks and legacies. What anchors these cases within the field of information studies is their focus on understanding behaviours in terms of user needs. Such findings are important for developing different kinds of information and knowledge-based platforms that address design requirements that are specific to the music domain and serve various types of end users.

3.5 Conducting Interviews within Research Framework

People are seen to develop (multiple) worldviews or definitions of reality as they interact with one another and attempt to incorporate particular objects of their awareness into their activities. Notions of community, self, action, reflectivity, symbolic realities, human interchange, and collective behaviour are fundamental to interactionism, as are the processes of conflict, cooperation, and compromise. (Prus, 1996, p. 22)

Carrying through the symbolic interactionist framework during the interview process, a one-page interview guide organized open-ended interview questions under the four tenets that served as a sensitizing framework (Appendix C). Within the interview setting, each informant was put to
ease by casual small talk as they reviewed the consent form (Appendix D), and I asked permission to begin the audio recording of the session. All the interviews began with an open-ended question to ask informants to describe their experience with music in general and learning music in particular, giving them an opportunity to speak about anything they wanted. As the interview progressed, I made hand written notes on points that seemed important for follow-up or as simply a visual reminder of what they had shared.

As they answered my questions and spoke about their particular experiences with music, there was a sense that this was an opportunity for them to talk about something that was meaningful to them but not usually addressed in everyday conversation. The level of enthusiasm of the informants was an indicator of the things that were particularly meaningful to them. I refrained from interrupting them, and often allowed silent breaks to pass for them to have a moment to think. When hesitation or uncertainty was sensed in their response, they were encouraged to not worry about giving ‘right’ or ‘wrong’ answers, and to not feel rushed to respond right away.

The amount of questions I needed to ask varied during each interview session, and they were formulated by referring to both the interview guide and incorporating the information the informant had already shared during the interview. Attention was paid particularly to the way they interacted with other people, their conceptualization of aspects of the world, and the various actors that has shaped their relationship with music and their information seeking behaviour.

All of the interviews ended with an opportunity for informants to ask me questions about the research, an interaction that was included as research data for analysis. Each of the five interviews lasted about an hour long, and they were all transcribed in full. Each participant was given the opportunity to indicate the way in which they would like to be referred throughout the study.

3.6 Analyzing Data with a Grounded Theory Approach

The use of a grounded theory as an analytic process is intimately related to the symbolic interactionist’s effort to conduct research that relies on a systematic process of observing-and-revealing, rather than hypothesizing-and-testing. Grounded theory was developed to facilitate
analysis of data in a way that is free of the researcher’s bias, utilizing analytic techniques that will allow data to emerge, without heavy influence from the researcher’s inherent bias. While this is the intention, in reality the researcher’s bias inevitably plays a role in the research process. However, the spirit of grounded theory as well as the process of coding, categorizing, identifying properties and dimensions of concepts, and utilizing memos, diagrams and other visual methods to explore the collected data were adapted during the data analysis process. As emphasized by Strauss and Corbin (1998), the analytical tools grounded theory offers are not meant to be followed exactly, but should be used selectively by the researcher. Below is a detail discussion of the major stages of grounded theory as applied in this study.

Each interview was transcribed, printed, and hand-coded. Attention was drawn to identifying data that pointed to each informant’s personal processes of learning, motivation factors, and roles and the impact of various actors on the above processes (whether individuals, groups, or institutions), as well as their conceptualizations of music and knowledge. The coding process required cross-comparison and reference to similar ideas within the same interview, and across the different interviews, in order to identify emergent themes even at this early stage.

Once all the interviews had been hand-coded, the codes of each interview were hand transcribed, accompanied with annotations that described the content of the interview transcript that had been assigned with that code (Appendix E). What essentially emerged were a set of codes and indicators of their potential properties and dimensions. This process consolidated codes in two ways: frequently occurring codes quickly emerged from the extensive summarizing notes that were attached to it, and singular instances of codes indicated ideas that required some more attention, or that would perhaps be better understood as a property or a dimension of an existing code, rather than a code on its own.

As these hand-notated “code summary” sheets were being completed for each interview, a mind mapping method was used to try and sort the codes into larger categories of axial codes (see Appendix F). Six major groups of axial codes emerged as a result of this preliminary sorting: social activity; mediation of meaning; music discourse/knowledge; legitimate peripheral
participation; motivation & interest; learning. All of these categories had sub-categories, with the exception of music discourse/knowledge and legitimate participation.

Music Discourse/Knowledge did not seem to fit anywhere on its own, and had a rich description of its properties and dimensions, while legitimate peripheral participation—a familiar concept drawn from Lave and Wenger's (1991) research on socially situated learning—seemed to require some more consideration and analysis before I relegated it as simply another sub-category under social activities.

In addition to a mind map, the hand-notated “code summary” sheets were word-processed as the initial development of a codebook, where each code was situated within its categories or sub-categories, with a definition as well as a description of its properties and dimensions (see Appendix G). The hierarchy of categories that were established in the mind map became the initial framework within which codes and their summary notes from all five interviews were further synthesized. In order to keep track of how the codebook was being developed, and to see contributions of codes by interview transcript, codes from each interview were assigned a unique colour. Through this process, I was able to see whether a code or even the properties and dimensions of a code were unique to one interview or occurred across multiple interviews.

In order to further draw meaningful correlation and relationships between codes, particularly in an effort to find ways of encapsulating the nature of self-directed learning within the domain of music, as well as useful ways of characterizing non-musicians and their information needs, axial spectrums were used as a form of visual analysis. Effectively, this visual method further reflected both the properties as well as dimensions of different codes, while serving as an effective way to synthesize complex relationships and ideas into a diagram, making it easier to relate the research findings back to the broader research motivations behind this thesis.

While the research questions established a particular trajectory of inquiry from the onset, it was also expected that such questions would be subjected to iterative review and revision as the research progressed. Memos document the meta-thinking process that occurred during data collection, data analysis and thesis writing. Memos were reviewed and used throughout the
writing process for inspiration. For example, the memos that documented impressions of each of the interviews served as the foundation for the profiles of each case.

During data analysis, what became clear very quickly was that while the emergent themes were rich and diverse, very few related specifically to the use of online resources for the purpose of learning music. This forced me to revisit the initial motivation for this research, and to reflect on what I had subconsciously expected to find and what was actually emerging from the data.

Memos also served as a way to document impressions and insights during the data collection and analysis process, as well as concepts that were surfacing. In particular, they served in documenting discussions with colleagues that provided alternative perspectives to understanding my own research topic, enabling me to see how differently it could have been approached and allowing me to clarify my particular research trajectory and methodology.

While not all of the ideas that were documented during the process of writing memos are directly relevant to the content of the thesis, memos served as a way of documenting the thinking and research process, and functioned as a self-reflexive tool for asking and answering critical questions as they arose.

Having discussed the research methodology, we will begin to discuss the findings by first introducing each of the five participants in this study.
4 The Cases

The cases below situate the role of online resources within the larger process of self-directed learning as undertaken by particular individuals. The online context does create new possibilities and challenges, but they are new or different in degree, though not in kind in the sense that they are still situated within the learning process itself and within the even larger context of a socio-musical world. Even though every self-directed learner forges their own path, and the role of online resources differs from one case to another, there are thematic ideas that run common between all five cases in this study. Before we explore some of those themes, a brief introduction to each case will help set the stage for discussions that will examine each case in more detail.

4.1 The Relentless (Allan)

Despite having shaky hands and some learning difficulties that prevent him from reading classical music notation for the purposes of learning how to play music, Allan is imbued with great intellectual curiosity as well as a great affinity for music. He was able to sing in tune at a very young age, and has a fascination with sound and the processes of making sounds. Interesting objects and noises around him easily distract him, and he is always curious about the people that he meets. A friend once suggested that perhaps he has Attention Deficit Disorder (ADD). The fact that traditional ways of learning music could not satisfy his curiosity about music did not prevent him from trying to learn to play the guitar, learn about music from the perspectives of different disciplines (such as physics of sound, digitization of audio information), and making friends within musical circles.

His approach to learning music is not well supported by traditional musical instruction. The emphasis on developing ‘reading’ skills in order to play music sets the stage for failure and frustration, and despite the well intentions of teachers, most do not know how to teach music without being able to refer to a ‘text.’

His social connections, especially his best friend, end up being one of his most used resources for becoming engaged with music. Musical companions lead to intimate albeit peripheral
participation in a musical world that is often reserved for the initiated. Such social connections allowed him to become “the worst guitarist possible” to have ever played in a band. It gave him access to actors such as classical music critics, composers, orchestral musicians, and band members, all of whom become important sources of music knowledge. It allowed him to engage in discourse about his perspective on music, while receiving feedback on his ideas.

His interest is vast, and he makes connections between his various interests in the fields of physics, mathematics, and computers. Music is something that he turns over in his head in different ways, a process that leads to new insights that excite him and drive his music making activities. In many ways, music making is difficult for him. The level of concentration, and the physical barriers that need to be overcome, are perhaps steeper than the average. Yet instead of hindering him, they have encouraged him to explore different facets of music as understood by different disciplines. A depth of conceptual understanding about music leads to a richer experience in music making, and becomes a source of motivation to perform the unglamorous and often tedious task of practicing.

4.2 The Musical Silo (Giles)

Music as a social and cultural artifact in which we all engage is not something that can be taken for granted. Just as there are those that seem to have an affinity or natural inclination towards music, for others it is something that has simply been ‘there’ and does not elicit much attention or excitement. While growing up, music did not have meaning for Giles on its own. There was no discourse about music that sparked an interest or encouraged him to explore. Even in high school when band was an extracurricular activity one could sign up for, he took up computers and architecture instead, pursuing his interest in building things and new technology.

The first encounter of such discourse was in university, where he met friends who loved to talk about music, or others who were music majors at the university. Giles was introduced to the world of musical patterns, and the act of attentive listening, where one discerns the quality of music by the composer, performer, conductor, modes of production, and the likes. In short, his exposure to and engagement in classical music discourse introduced him to a framework through
which music was imbued with meaning (musical, social, mathematical, etc.). While this led to an attempt to learn how to make music himself, the level of commitment required to learn music was overwhelming. The constant relocation for work purposes made it difficult to find a regular setting in which to learn and practice. It was also a deterrent to purchasing a piano, his initial instrument of choice. He is now considering the guitar as a more mobile instrument, as well as its reputation for being easier to learn.

There was a sense of frustration when he described his musical interests. Having been inspired by the potential meaning that music can carry, he is interested in exploring how music can manifest in himself. He engages in creativity as part of his profession as a product designer, and he is curious to know how music might manifest itself creatively through himself. Good music, he said, has structure. Musical genius and creativity, as represented by Bach, Beethoven, Mozart, are appreciated through the structure of their art. As someone that understands the concept of structure and can appreciate the beauty of mathematical patterns, such a conception of music has an immediacy and a relevance that did not exist for him before. There is a desire to learn music, and not knowing any other way beyond the paths set by the very same institutions that prize the music that has inspired him, he is forced to confront the fact that he simply does not have the time to invest in music as such paths require him to do. He can afford to listen and cultivate his taste for the music, and indeed it is something he does regularly.

He gets excited thinking about instruments that ‘teach’ music, such as guitars with positions lighting up, or virtual keyboards that can be projected and thus mobile. Even though finding a teacher is the most obvious avenue, he is cautious to undertake such a social and financial commitment when he feels he is still not sure how he would like to learn.

4.3 The “Non-Musician” (Simon)

Despite being an advanced trumpet player, Simon feels very strongly that he is very far from being a musician, since he has only had the benefit of a trumpet teacher for two years. As he described his process of learning, which also involved a couple of years of piano lessons, performing in community orchestras for over 15 years, and participating in exams at music
conservatories and music competitions, he reflected on the self-directed nature of his music learning pursuits. He is critical of the emphasis on mechanical execution instead of musical expression in the musical instructions that he had received, and remains humble and modest about the level of musical expressiveness he can achieve with his trumpet playing.

What is most interesting about this case is that Simon is an individual who—by virtue of his achievements as defined by institutional benchmarks and participation in musical organizations—would easily be recognized as an accomplished musician by popular social norms. And yet, he feels strongly and deeply that he has only succeeded in learning how to ‘pass’ within the system of music education, but lacks the learning required for one to really be a true musician.

Wind instruments, and more generally classical music, were a very niche musical interest in Hong Kong in the 70s. Despite playing out of tune at times—the trumpet, like all wind instruments, does not play in tune automatically; much is dependent on the performer’s ability to adjust his or her own pitch while playing—Simon enjoyed his stint with the orchestras well enough as a paying job to worry about it very much, and the audience to which he was playing did not seem to mind. It was only when he pursued trumpet on his own again that he learned more about the skill of intonation on a trumpet through online resources related to trumpet performance. The way he was able to articulate his own development as a trumpet player, especially as he purchased differently tuned trumpets with the intention of ‘improving’ his playing, was only in hindsight. While he could hear or feel that something is wrong or ‘off’ when he buys a new trumpet, when he is playing with the accompanist or listening to himself recorded on a tape recorder, he cannot diagnose the source of the problem, and points to the technology or the instrument as being at fault.

Simon has gone through, albeit independently for the most part, the benchmarks that indicate levels of musical achievement within the education system for the purpose of learning about music, as an act of pursuing something that he loves. It provides structure, a sense of trajectory, while he prioritizes other aspects of his life: his career as a health professional, his family, and in particular the raising of his two children. His decision to pick up the trumpet after many years of
absence was to set an example for his son as he embarked on his own musical journey. While his son was preparing for saxophone exams, he would prepare for his trumpet exams. The motivation was not to become a great trumpet player, but rather to pursue his love of music while nurturing his son’s interest and cultivating the father-son relationship.

4.4 The Hobbyist (Chloe)

Chloe has always loved to sing. Not to sing well, but just for fun. Singing along to pop songs, or singing in video game play, but not singing in a choir. Her mother put her in piano lessons for two years when she was young, and it was not long before she quit because she did not like practicing. Discovering the ukulele, which has increased in its popular appeal as an alternative to the guitar (and, interestingly, containing the same qualities that made guitars popular compared to other Western instruments), was perhaps only a matter of time.

Chloe's interest in the ukulele developed through a combination of factors. Her friend had talked about the instrument for a good year, which led her to look it up online. She encountered websites, music videos, tutorials, and forums. There was a whole online world of ukulele enthusiasts, with a prominent culture that was welcoming and unpretentious. Ukulele makes music fun. You can get ‘serious’ about it if you want, but you don’t have to in order to participate and share your love of ‘fun music’ with other ukulele lovers.

While she describes her engagement with the ukulele as ‘just for fun,’ she also takes the pursuit seriously. She spent a lot of time trying to find the right instrument, going from music store to music store, and finding herself disappointed by the state of the untuned instruments on the wall and lack of knowledge by the staff. The online forums provided much better information, and repeated favourable reviews of an online vendor led her ultimately to buy an instrument for about the same price as an average instrument from a music store, but it was one that had been refined by a ukulele-maker.

During the same summer she got her instrument, Chloe also enrolled in two group-learning ukulele workshops that were organized by a Toronto-based ukulele community group. She learned a lot, but did not find it enjoyable. There were too many rules and structures, and the
expectations of the instructor and subtle comparison of ability between participants were stressful. It could be quite embarrassing when the instructor had to come up to fix the wrong tuning or strumming, which would become exposed when everyone was playing together. On the other hand, there were things that playing together helped, such as learning strumming patterns, and trying to play and strum at the same time. If you got lost you had a reference point, and the collective playing helped you focus by allowing you to follow the musical material.

Chloe is pursuing it less intently as she is approaching the end of her master’s degree in engineering, and deleting her RSS bookmarks, some of which were ukulele-related sites, in order to reduce the amount of reading and browsing she is doing online. She has saved PDFs of chord charts for songs she would like to learn, and she plays the ukulele as a de-stresser and a break from her research work. It remains a passion that she likes to share as she speaks about what she would like to do with the ukulele once she has more time.

4.5 The Outlier (Jason)

Jason loves music, or as he likes to describe it, he loves to just make noise. Sounds have an inherent quality in them that makes them interesting, and when you start putting them together you have yourself endless possibilities of combinations and arrangements. For Jason, who was diagnosed with autism, albeit much later in life, such a creative and experimental process was the way he was inclined to learn music. Sight-reading and memorization of music was difficult despite his conceptual grasp of music theory, a discerning ear, and the ability to recall music based on aural association. The inability to exercise fine motor control also made playing instruments ‘properly’ a challenge. However, this did not stop him from playing in his high school band, playing bass in a local rock band, and learning to play the guitar.

Jason obviously has an affinity for music, but not in a way that suited the expectations of teachers based on their pedagogies, nor based on the way anyone else was learning music. Surrounded by peers, many of whom went on to become professional musicians of some sort, Jason learns primarily by asking questions about things or processes that he does not know, and exposing himself to music by listening or attending concerts that he may or may not be familiar
with. Being exposed to new things can be a disconcerting and disturbing experience, but his curious spirit spurs him on to explore by listening, by watching, by asking, by experimenting on his own, and getting feedback and perspectives on his own music from others.

Jason also loves to share his musical taste/knowledge with others. Musical taste is a way of making a connection with others, either as a way of finding a common point of interest or as a way of learning more about someone else. For Jason, musical taste is socially negotiated, and he enjoys making others expand their musical interests, as well as shake off their preconceptions about music. The music he makes, however, is really not intended for sharing. He does not play or compose music for the sake of pleasing an audience, but he does so for the sake of hearing something pleasing to himself. These are the motivations behind the sonic sculptures that he has made on Second Life, where multiple tracks that he had created himself are visualized; the sculptures consist of different kinds of sounds that are triggered as the user’s avatar flies through it. He is getting some help on setting up the code and exploring the different ways the position of the avatar would affect the sound, but he is happy with the experiment so far.

Garage Band’s interface for musical composition opened up a whole world of possibilities for Jason. For one, the square notes denoting different pitches and timbre allows him to drag his mouse around the screen in order to ‘find’ the sound he is looking for. He describes his compositional process as “contrapuntal”; there is no preconceived structure or plan as to where the music is going. It just starts with one note, and the question is, what sound doesn’t sound bad when it goes with that first note? What is even more interesting for Jason is Garage Band’s ability to transcribe his compositions into the Western musical notations that his colleagues and friends can understand. This facilitates a kind of sharing that was never possible before, as the score allows others to perform his own compositions, which he had never intended for others to do before.
5 Research Findings

...cases are “made” by invoking theories, whether implicitly or explicitly, for justification or illumination. (Walton, 1992, p. 121)

In order to understand the information seeking behaviour of individuals who seek to learn music on their own using online resources, five cases of individuals who self-identified as ‘non-musicians’9 and who are learning music on their own were interviewed. While each individual’s reason for engaging in self-directed learning and their musical interests varied, they share a common need to find alternative learning opportunities and processes that are not offered within the context of conservatories or private lessons.

This study has focused on learning about the self-directed learners’ information-related needs within the domain of music. Specifically, we want to learn why individuals try to learn music on their own, how they structure their learning, and the role that online resources play in their process of learning. Through a comparison of all five cases, we will present the findings that emerged in order to explore those questions.

This chapter will discuss the common threads that have emerged through a cross comparison of the five cases, situating the seeking and use of online music knowledge within the socio-musical worlds of non-musicians and their process of self-directed learning. The findings are organized into three interrelated sections. We will begin by taking a look at the socio-musical contexts within which an individual initiates the process of self-directed learning, followed by a consideration of how that context informs the process of self-directed learning itself, and the implications for understanding information behaviour when situated within the domain of music.

9 Identifying ‘non-musicians’ who have not pursued music for an extended period of time through institutional avenues such as conservatories or private lessons allowed for an array of musical worldviews to emerge.
5.1 The Socio-Musical Worlds of Non-Musicians

“People, individually and collectively, are prepared to act on the basis of the meanings of the objects that comprise their world.” (Blumer, 1969, p. 50)

The world of the non-musician is shaped by their highly individual musical interests and personal inclinations. Drawing from Becker’s concept of art worlds and Lave and Wenger’s concept of legitimate peripheral participation, we begin by taking a closer look at the differences and similarities of the socio-musical worlds in which the non-musicians introduced in the last chapter are situated. In particular, we will highlight the curiosity- or interest-driven nature of the self-directed learning each of the non-musicians engaged in, and the role institutional bodies and other spaces play within the context of their socio-musical worlds and in the shaping of their self-directed learning process.

5.1.1 Curiosity- and Interest-driven Learning

Rather than being driven to follow established and formal processes of learning music, one of the ways through which self-directed learners establish their learning process is to rely on their personal musical curiosities and interests. Below we will consider each of the cases by underscoring the common nature of their learning through the distinctive features of their socio-musical worlds.

5.1.1.1 Chloe: Drawn into the World of the Ukulele

Chloe's musical world is a familiar one: memories of singing in girl guides, and parents enrolling her in piano lessons which she did not like. She enjoys songs from movies and the radio that are associated with different life stages, and regularly attends pop music concerts and plays video games with musical themes. For Chloe, a good song becomes a personal soundtrack, ubiquitous to her everyday life.

Her love of singing is defined by having fun, rather than by singing well. She did not have any interest in learning an instrument until her friend started trying to learn the ukulele. It is an instrument that is easy to learn and ideal for accompanying singing. A search through the popular channels of online media such as YouTube, forums, and websites revealed a rich online world of
user-generated content related to the ukulele. She can appreciate the range of musical expression that a ukulele has, but she is most interested in having fun in the learning process.

*I had a friend who bought one [ukulele], and I started reading about them, and I saw a lot of YouTube videos of people playing the ukulele, a lot of YouTube videos... It was something I had never considered until somebody had one and was trying to learn.* (Chloe, interview, February 8, 2011)

She plays her favourite songs from childhood, old favourites amongst friends, and new songs from her favorite artists. Chloe’s interest in music manifests primarily through listening to and singing along with her favourite songs. The ease of playing the ukulele as an accompaniment instrument to singing, the popular presence of ukulele in various media contexts, and the novelty of learning through local and global communities of players online tie together many of Chloe’s interests.

5.1.1.2 Simon: A Life Long Love of the Trumpet

Simon’s interest in trumpet playing developed in a similar way to Chloe's when a friend asked him to sign up to be in the music band in high school—an interest that he has maintained 35 years later:

*So I stepped into the band room, and the bandmaster said, what do you want? I just said, how about the trumpet? Because I find it, um, easy to carry, loud, top of the line; you’re always being heard, so that’s why I picked the trumpet. So, I guess that’s how it started.* (Simon, interview, February 5, 2011)

Thirty-five years later, after becoming a physiotherapist, starting a family, and immigrating to Canada, Simon continues to be enamoured with and intrigued by the trumpet.

His experience of learning how to play the trumpet is both traditional yet unusual. Since joining the high school band, he anchored himself in the examination process in Hong Kong to learn about playing the trumpet. Aside from two years of private trumpet and piano lessons, and four years of band practice in high school, he did not pursue any formal instruction. Training to become a professional physiotherapist, raising a family, and other life responsibilities were always a priority, even though his love of the trumpet never diminished. Even when he stopped
receiving free private instruction from his band teacher, he continued to play in community
orchestras and prepared for conservatory exams in Hong Kong on his own.

Immigrating to Canada was a big life event during which time he did not continue playing the
trumpet. He only picked up the trumpet again when his teenage son became interested in learning
the saxophone.

The last time Simon had tried to learn trumpet on his own, the internet was not as widely
available as it is now. It was fascinating for him to discover new sources that he can reference as
he prepared himself as well as his son and daughter for their examinations at the conservatory. In
the process of self-directed learning, he was also mentoring and tutoring his children, turning the
process of learning music into a family endeavour.

5.1.1.3 Jason: Discerning a Discourse in Music

As a professor at a university and an individual with a wide variety of interests, Jason’s socio-
musical world is coloured by autism, which was only recently diagnosed in adulthood. It affects
his ability to memorize music, to read text or music scores, and limits his fine motor control.
Despite trying to participate in music classes in school and unable to do very well in them, Jason
identifies very strongly with music.

Jason’s process of learning in general does not adapt easily to normative ways of learning within
an institutional context, even though he has a natural curiosity about people and things around
him, and a great capacity to absorb and articulate novel ideas. After decades of personal
experience, Jason is very aware of how his strengths and weaknesses translate into a learning
process that works for him.

He learns music not by trying to play other people’s music, but by experimenting and making
noises with various instruments and technologies, exploring music at a level that engages his
interests. He is particularly sensitive to its repetitive and rhythmic nature and to the musical
process from which the music he hears emerges:
If it’s a rhythmic utterance, it’s good enough. It doesn’t have to pitch, as long as it’s got a rhythm. (Jason, interview, February 8, 2011)

Jason perceives music at a conceptual depth that is uncommon. Musical sounds are encoded like a language and he can discern a level of discourse that most people, with the exception of specialists like ethnomusicologists, would have a hard time following. Music that captures Jason’s interest is not necessarily "beautiful" but certainly complex in the intent to engage in a musical or sonic discourse. Being able to share his musical interests with others is often a nice surprise, but not something he expects. The process of making sounds he enjoys, and the different ways he engages with music that suits his interests, are in essence a form of musical self-expression.

5.1.1.4 Allan: Making Human Connections

To a different extent, Allan experiences similar challenges as Jason: namely, the lack of fine motor control and the inability to read music, and a self-diagnosed case of Attention Deficit Disorder. A childhood best friend, his own natural intellectual and social curiosity, and an innate musicality has urged him on to learn about music and to seek out musical friendships.

Allan has a shaky hand that makes fine motor control very difficult and prevents him from advancing his instrument-wielding ability very much. However, he was imbued with the ability to sing on pitch as a young boy, which is an unusual ability, and has a natural confidence about him. His keen aural memory and the ability to figure out patterns helped him get through many music classes in school, compensating for the fact that he has great difficulty in reading Western music notation. He understands the concepts of scales, keys, and chords just fine, but translating what he reads quickly into meaningful symbols is an exercise in frustration. The tedious task of practicing in order to improve his ability to play music was also an unattractive prospect. Instead, Allan is most intrigued by the different ways in which music is understood by different people:

*I’m supposed to be a computer programmer and I failed as a computer programmer. Because I was way more interested in what others were doing around me, you know, I was, like, “ooh, shiny things, ooh.” I could type really fast. I can think reasonably well, technically. But it wasn’t interesting. What was*
interesting were the noises and the people and the stories and whatever. (Allan, interview, February 1, 2011)

Musical friendships and relationships play an important role in Allan’s exploration of music. His intellectual and conceptual capacity allows him to appreciate and articulate a variety of approaches to understanding music. He speaks about music from an acoustic perspective by drawing on physics, an analytic perspective by drawing on the Western orchestral tradition, or from a technological perspective:

“I was branching out in my musical friendships as well, you know. Musicians would meet me and be, like, hey, this non-musician, like, knows shit and appreciates stuff in a technical way, you know. But it was kind of novel, right, because I was this engineer dude who was, like, technical computer programmer whatever, but I love music.” (Allan, interview, February 1, 2011)

Allan is a willing student who is aware of which learning processes work for him and which do not. He is realistic about what he can achieve in terms of performing music, actively tries to find ways of learning that can help him overcome his physical limitations, and is not easily discouraged in his pursuit.

5.1.1.5 Giles: Finding Technological Solutions

As an entrepreneur in the tech industry, Giles is interested in developing technological solutions that address social and cultural needs. He is most at home in a world of technology, where human limitations become an opportunity for innovation.

Music did not make an impression on Giles until he attended university in Canada. His sisters took piano lessons, but he was interested in computers and architecture—in building things and dismantling things in order to understand how they worked. He moved from Iran to Japan, where he attended high school, and fell in love with the ethos and culture of Japan. The kind of music that got him interested in music was classical, especially with the mathematical patterns and formal structure characteristic of this genre. They represented a way of seeing music that was foreign to him until musical friends in university introduced him to it, and it caught his imagination. As a person who likes to bring ideas to fruition, he began to wonder what kind of
musical ideas he could find in himself, and what he would need to do in order to express them.

A demanding professional life that has Giles moving around the world is not friendly to the process of learning music. Many of his attempts to learn music were short lived, as he felt overwhelmed by the level of dedication required, and did not feel the same kind of inspiration that he did when he first discovered the depth of classical music. Instead, he dedicates time to listen to music, an activity that he can do any time, anywhere.

Giles daydreams about the kind of smart instruments that could teach him about music, and how he can use online resources for the purpose of learning. Having been initiated into the world of classical music, there is a lack of clear direction for pursuing his newfound interest. No longer situated within a context in which musical individuals can be engaged, he turns to his own world of innovative technologies for an answer.

5.1.2 The Role of Institutions of Music

While non-musicians tend to be situated outside of institutions of music, this is not to say that they do not play a role in shaping their socio-musical world. In fact, throughout all five cases, institutions of learning play a role in some way in defining their learning trajectory. Whether or not case subjects were able to fully participate or engage in them, these institutions nonetheless provided a frame of reference that shaped their socio-musical worlds.

Institutions of music—such as music conservatories, record labels, radio stations, and music TV channels—tend to favour certain types of music over others. Due to the prominent nature of these institutions, what they deem to be the best music, or the most important music, becomes ingrained within the public consciousness. This is reinforced through the consumption, participation, and rejection of different types of music by society-at-large.

5.1.2.1 Music Performance and Recordings

Musical consumption—through the act of listening—is probably the most common way in which musical institutions legitimate themselves. It is also the most common way through which individuals become engaged with particular socio-musical worlds. For both Chloe and Giles, the
way they pursue their musical interests demonstrate how one uses institutions, such as recording labels, well known artists, and performance venues, as a reference for selecting the music they listen to. Giles describes the process of finding good classical music recordings:

“[I would look at] which orchestra was performing, see if it was well known or not. If it’s some guy who I don’t even know playing solo piano, I probably won’t get it, even if he might look good on the CD.” (Giles, interview, February 3, 2011)

Chloe regularly attends concerts performed at various concert venues in the city, finding out about new bands from the opening act, reading about the performer on their official websites and other entertainment sources. Her musical interest is squarely situated within the popular music industry:

“I go to a lot of concerts. I listen to a lot of live music. I go to the symphony some times, but I decided I only like pops concert when I go the symphony because I’m lowbrow (laughs). ... I’ve gone to small concerts at teeny venues, but most of them are at medium-sized places, I would say... and then sometimes, although I don’t really love it, I go to really, really, really big ones—like at the Air Canada Centre.” (Chloe, interview, February 8, 2011)

Institutions that are involved in the recording and distribution of music, however they manifest themselves in different communities of practice, are important actors in any socio-musical world.

5.1.2.2 Music Education

Music education, as noted by Becker, is one of the primary ways through which the world of classical and jazz music is ingrained into the popular consciousness. From exposure to group lessons at the conservatory to the preparation for examinations, educational institutions show a preference for the world of classical and jazz music, with limited options for exploring different musical cultures around the world. The reliance on university for the standardized examinations to screen first-year applicants, as it follows the same pedagogical ideology, further legitimates this particular paradigm for learning music.
Giles was in many ways introduced to music through this world when his university friends showed him how to appreciate the music of Bach. He has continued to rely on references to institutions of classical music such as orchestras and well-known composers to define his socio-musical world. Simon’s process of self-directed learning is also based on his experience with music through his high school band, community orchestras and the conservatory examination system. While Giles and Simon represent two very different levels of engagement with institutions of music education and the associated world of classical and jazz music, they nonetheless both use that world as a frame of reference for their self-directed learning.

5.1.2.3 Rejection of Institutional Norms

While most people have experienced receiving some kind of music instruction through their public school education, not everyone finds it a rewarding learning process. The role of institutions in the socio-musical world of Allan and Jason has been one of rejection to different degrees. Due to their inability to read music and lack of fine motor control, they had to find alternative processes of learning music that works for them. For example, Allan relied on his aural memory to avoid the need to play from music notation, while Jason realized that he prefers to learn music through a process of experimentation and exploration. For both of them, their experiences with institutional norms of music education helped them articulate and define a process of learning as well as a socio-musical world that is meaningful to them.

5.1.3 Section Summary

While the focus on this section has been to highlight the larger socio-musical context within which each case is situated, we have inevitably touched on some of the ways non-musicians engage in self-directed learning. Specifically, one’s musical and non-musical interests and the role of institutions of music in one’s socio-musical world have a marked influence on how the process of self-directed learning develops. Based on the themes that we have highlighted, we will now look more closely at the process of self-directed learning in general and the information practices that are specifically situated within the domain of music.
5.2 The Nature of Self-Directed Learning

...music defines itself as what counts by virtue of its differentiation from that which does not count ... it is also made to count by virtue of its approved and established mode of study. (Green, 1988, p. 68)

Having considered the socio-musical contexts from which the self-directed learner in each of the cases emerged, we shift our focus slightly to the learning process, which is shaped by the individual needs and preferences of the learner.

5.2.1 Flexible and Personalized Learning

The self-directed learning process is characterized by a need for flexible and personalized learning, reflecting one’s personal inclinations and definition of achievement. Such needs are often not supported by traditional institutions of learning for music because they do not align with the institutional paradigms, and as such those needs become too resource intensive to support. While there is always the option of customized private lessons, the challenge of finding the right teacher to match one’s personal musical interests and inclinations becomes exponentially difficult and expensive as one’s learning needs fall off the normative curve. Furthermore, there is a question of whether a music education pedagogy actually exists that suits the need for flexible and personalized learning, without the tendency to fall back on institutional paradigms as a frame of reference.

Flexibility and personalization is often required as a result of limits imposed by circumstances that range from personal and professional lifestyles to specific physical and cognitive challenges. Returning to examples drawn from the cases, we will begin by discussing how personal inclination and sense of achievement shape the learning process that is undertaken by the subject of our cases.

In the last section, we considered how each non-musician we interviewed was situated in a socio-musical context. Here we will consider more closely how such a context, particularly in terms of the limitations that are imposed by their socio-musical worlds, shapes the way they engage in self-directed learning. The types of limitations that are of a temporal and geographic nature are
often a result of lifestyle choices, while physical and cognitive limitations also play an important role in shaping the way one engages in self-directed learning.

5.2.2 Temporal/Geographical Limitations

Temporal and geographical limitations are a common factor that influences one’s decision to engage in self-directed learning. The commitment level required by educational institutions in terms of regular lessons, association with a particular teacher, and access to such educational programs as well as practice space is not an affordance that can be taken for granted. Availability of time and ease of access to physical spaces and artifacts are the factors that we will consider in this section in terms of how they affect the subjects’ process of self-directed learning.

5.2.2.1 Finding the Time, Finding the Place

Simon and Chloe are examples of individuals who prioritize other life interests over their pursuit of learning music. While Simon actually uses conservatory exams to provide structure and direction to his self-directed learning, he is hesitant to actually seek out a teacher:

*I do think that I need a teacher. Like, right now I am preparing for the ARCT exam. I feel like I’ve hit a ceiling for about two years. I’m not ready for the exam yet. I would like to be. Although I’m making improvements, slowly, I’m not sure if I hit the ceiling which is really my physical limit, or if I ask, if I look for a teacher, will that help me or not? I’m not too sure. Because I think that some of my problems might be quite deep-rooted. Maybe a teacher cannot correct me. This is my personal opinion. And another thing is time. Like, if you get a teacher, you feel obligated you need to practice. And then, even if it is just one lesson every two weeks, right, um, so this is a commitment.* (Simon, interview, February 5, 2011)

For Simon, it is not a case of a lack of personal commitment to learning the trumpet, but rather that of a lack of room in his life to take on any additional musical involvements without that having an impact on the structure of the rest of his life:

*I practice the last thing of the day. You cook, you do the dishes, you do the laundry, you don’t play the trumpet until you finish those things.* (Chloe, interview, February 8, 2011)
While Chloe’s level of interest in music is simply for personal enjoyment and the ability to accompany herself on the ukulele while singing, she experiences limitations related to the availability of time she really has to devote to learning:

_Sometimes I don’t remember that I haven’t played that day until 11 o’clock at night, and I don’t want to practice because my roommates are sleeping. And so sometimes I’ll try and play before I leave for the lab. Especially as a grad student, my schedule is crazy, where I meet for the lab at 10 and sometimes I don’t get home until 9, and then I make dinner and then it’s too late._ (Chloe, interview, February 8, 2011)

Having an appropriate space to practice, as noted in the quote above, also influences the way Chloe engages in self-directed learning. Ease of access to places of instruction, places of practice and places of community plays a role in shaping the way one engages with self-directed learning:

_When I graduate, there’ll be more time. And it’s better in the summer too. Because they [the ukulele workshops] go from 7 to 10 or something, and it’s so dark (laughs) and it’s all the way in Corktown, and so it’s so far (laughs), and it’s just ... when it’s really cold it’s easy to get lazy. But in the summer time I’ll have my bike and it’s so much easier._ (Chloe, interview, February 8, 2011)

While both Simon and Chloe have had the benefit of being in the same city most of their lives, Giles has moved from Iran to Japan, before settling in Canada during his university years. Even during that time, he relocated to Japan for a few years for business purposes. His professional engagements make it difficult for him to even begin the process of learning music. Despite a clear desire to learn music, he has had a difficult time identifying a learning process that works for him, or even deciding which instrument he would like to learn:

_So I went there [Japan] for work. I was there for 3 years. So all these moves, that also interrupts. So I haven’t had a life that is friendly to at least piano, probably. So that’s why I’ve been thinking recently that I should try guitar, learning that, because it’s an easier instrument, and it can be carried, or easier to get access to._ (Giles, interview, February 3, 2011)
It is important to note that the temporal and geographical limitations that Giles experiences actually hinder his ability to even think about how to go about learning music, as he has to pursue it in a way that does not take away from other aspects of his life:

“There’s never been an easy way to fall into music, I’ve always had road blocks, one way or the other. Either because of time, or just because of distance, or unavailability of the instrument or space to practice.” (Giles, interview, February 3, 2011)

5.2.3 Physical/Cognitive Limitations

In the following section, we will continue to consider Giles’ case as a bridge to a consideration of the physical and cognitive limitations that shape the process of self-directed learning.

5.2.3.1 Finding the Will, Finding a Way

Unlike the other non-musicians we interviewed, Giles was unique in that he was not always intrigued by music. Rather, his musical interest began with the introduction to Bach’s music through university friends, who showed him how to appreciate the mathematical patterns and musical structures that exist in music. Below is a quote of Giles describing his musical interests throughout his life:

“Not much in Iran I would say. And I’m not really fond of Iranian music per se, so I was never really connected to that, I guess, as a child. Maybe that’s why I never connected to music. And then growing up, during high school, it was more, um—I guess it wasn’t classical, but just the music of the day, pop or whatever it was. And then it wasn’t until university that I was really exposed to classical music. And that’s what really struck me, that probably got me thinking, that there’s more to music than just... some sound.” (Giles, interview, February 3, 2011)

A natural aptitude for or intuition about music is not a prerequisite for one to desire to learn about music, but the lack of either does limit one’s ability to imagine or consider the way one would like to learn music on their own, without defaulting to institutional norms. As mentioned in the introduction, music is understood in a situated way, and as such, the way individuals engage in self-directed learning of music is defined to a great extent by how they understand music itself.
One important way one’s interaction with music is defined is through their physical and cognitive filters, and Allan and Jason’s cases are illustrations of this. The inability to sight-read music, and the challenge they experienced with fine motor control has meant that they cannot learn music the way everyone else does: namely, through learning to read music and playing along and through regular practice. This results in a feeling of frustration, as these are the primary processes through which music is often learned within an educational context.

However, instead of being a hindrance to Allan and Jason’s development of musical interest, they cultivate other musical strengths via alternative processes that are not often recognized or encouraged within the classroom setting.

Allan’s natural musical aptitude was clear from a young age, but his inability to read music meant that he could not engage in music classes the way he was expected to. Instead he relied on his exceptional aural memory:

> I cheated in school all the time. If we had instrumental music, playing things out, I’d just memorize the piece, you know. While all the kids were practicing reading, I would just practice playing. (Allan, interview, February 1, 2011)

It was during the process of struggling through high school music classes that Allan realized he needed to pursue his musical interest in a way that suited his interests and not the school’s:

> I always loved to sing; I always sing. So then I had this realization—that I didn’t have to be good, I didn’t have to learn to read music—sometime around grade 12 or OAC. Because what I’d really like to do is just to sing and make noise, you know. So I got a guitar. (Allan, interview, February 1, 2011)

When deciding on the guitar as his instrument, Allan had taken into account the fact that his shaky hands can be overcome, just as he had learned to type as fast as his thoughts would come to him. Recognizing his own physical limitations was important in assessing what instruments he would like to learn and the level of playing he can achieve:
Now, typing is like an order of magnitude easier than piano playing, because it doesn’t matter how hard you whack the key, whereas it desperately matters how hard you whack the key in piano. So I didn’t start with piano; it’s too hard. Guitar, kind of, doesn’t matter how hard you hit the fret, it’ll make a noise, but you can mute it, or you could just enjoy it. Whatever sounds good. (Allan, interview, February 1, 2011)

While Allan has an excellent aural memory that he can rely on, Jason experiences memory issues, which meant that simply practicing more and trying to overcome his limited motor control was not effective. It was more fun to just improvise and experiment and try and fit in with his band mates in school:

They would let me play the whole notes. I couldn’t read the music, but I’d just get an ear for what’s going, so I’d go: ‘Oh, this is probably a pretty good note!’ And I’d just play whatever I felt like, but keep it simple. But because I had a really great lung capacity and really loud, it was useful. So they didn’t mind me filling it out as long as I didn’t try to play too much… Basically you just listen to it, you figure out what the hell they’re playing, and you try to play the same thing at the same time. (Jason, interview, February 8, 2011)

While lacking in musical memory and fine motor control, what Jason has in spades is his musical or sonic imagination, something that enabled him to cultivate friendships with all kinds of musicians from whom he learned while participating in music-making:

All my friends—most of my friends—did [become professional musicians], whether they became roadies, or with bands, etc., and stuff. And I just kept playing music and switched instruments, because I’m equally bad on just about any instrument, so it doesn’t really matter… I always played bass, because it’s always one note at a time and you can’t do too much damage with it. And we even had a band for a number of years. (Jason, interview, February 8, 2011)

The conceptual depth at which Jason perceives and ‘encodes’ music, coupled with the way his autism influences the way he interacts with the world, has not inhibited his ability to engage in music. Rather, it has resulted in a process of learning that is uniquely catered to Jason’s strengths and weaknesses:
I always knew what I always wanted to do with music and a lot of the times they [musicians] didn’t. So I had ... Well, I had a sense of... not a sense of composition ... but a sense of ... what sounds interesting together. And that’s still the case... Not a sense of structure of music—I don’t have any preset notion of that— but a sense of which small little pieces sound good together. (Jason, interview, February 8, 2011)

5.2.4 Personal Sense of Achievement

A great motivating factor within any learning process is a sense of accomplishment. Just as self-directed learning is often influenced by personal circumstances, success is also defined in a highly personal manner. Instead of relying on institutional standards for success, each of the non-musicians define success in ways that are personally meaningful. Success is situated within their socio-musical worlds, defined within their personal limitations, and it often simply means enjoying the learning process itself, rather than working towards specific goals. We will consider below some of the ways the non-musicians we interviewed achieve success that is personally meaningful.

5.2.4.1 Sonic Exploration and Experimentation

The process of exploration and experimentation is exemplified by Jason’s case. While he does not aspire to be a composer, his process of learning has been exploratory and experimental because of the challenges he experiences in normative ways of learning music:

Since day one, because I could never play anyone else’s songs, it’s always been a composition process. So I’ve always been making new songs, because I can never figure out what anybody else’s song was. (Jason, interview, February 8, 2011)

Jason describes himself as a consumer of his own music. Rather than trying to play music for others, or even play music composed by other people, he gets satisfaction by experimenting with sounds and listening to the way other people have experimented with sound. This is reflected in the way he creates sound sculptures in Second Life, which he describes below:

That was Garage Band to produce the music, and then learn how to chop it up and to create these pieces, these 4 pieces that could just be used at random, but
create a sense of having a musical continuance. At some point I wanted to put in way more, but I haven’t gotten around to it. (Jason, interview, February 8, 2011)

Furthermore, Jason is also interested in the way other people experiment with music, and developed a taste for experimental music at an early age:

I remember specifically a Frank Zappa’s score. Do you know Frank Zappa’s music at all? So you know how insane those things are. And it was great. Oh, it can look like that? Yeah, this is where it says, "Turn around and place both buttocks across the keys but your crack has to be exactly C." That’s weird. OK. So, curiosity-based rather than systemic study or knowledge acquisition. (Jason, interview, February 8, 2011)

Such an experimental way of learning music often cannot be engaged within an institutional setting until one has fulfilled fundamental requirements such as the ability to read music and the ability to play instruments. Yet, it has been an effective process of self-directed learning for Jason. The impact of technology on his musical explorations will be discussed in the last section of this chapter.

5.2.4.2 Just Doing It for Fun

The idea of having fun while learning is prevalent throughout the five cases. It is perhaps a mark of self-directed learning that one does not feel obliged to follow certain norms, but instead can set personal learning goals that are enjoyable to a certain extent.

As noted earlier, Allan is very realistic about what he can achieve in terms of playing music. He describes his accomplishments as significant on a personal level, but likely negligible from the standpoint of the great musicians whom he admires:

Every musician you will meet, every successful musician, has gotten that way because they played scales forever. And they played chord patterns forever. I understand that if I want to get really good, that’s what I’d have to do. But what I realized [is] I didn’t want to get really good before I knew how to play at all. (Allan, interview, February 1, 2011)
Such emphasis on playing simple music and experiencing personal enjoyment in accompanying his own singing is highlighted when he tries to quantify the difficulty of the music that he currently plays:

I would say noodling rather than learning, you know. Like, I can hack my way through almost any song I want at this point, well enough to sing the songs I can sing. But I like to sing simple music in major or minor keys, you know. We’re not talking about complicated stuff, you know; we’re talking about the Grateful Dead, and they are a dance band, as noted previously. And it’s fun music you know, it’s not tricky or difficult. (Allan, interview, February 1, 2011)

Similarly for Chloe, ukulele serves as a pastime to relax and take her mind off the stresses of life as she completes her master's degree. Getting ‘practicing’ done is not as important as simply enjoying herself:

I guess maybe I’ve plateaued a little bit, and unless I really kick it up, I won’t be able to get to the next level. But I’m OK with that until I graduate. Like I’m trying to concentrate on my thesis. So, really, I’m not trying to learn too much more ukulele playing; it’s just practicing what I already know. And just ... de-stressing. Because I’m already putting enough stuff in my brain. So, I think the next month or two will be, like, just playing for fun to de-stress, like a break. Like, I’ve read three journal articles, I’m going to play a song, and then I’ll read three more. (Chloe, interview, February 8, 2011)

Ukulele's appeal to Chloe is directly related to her interest in popular music and her love of singing, as it provides a different avenue for her to engage in that world. Learning how to play the ukulele ‘properly’ is really secondary to the fact that learning just enough to accompany herself singing her favourite songs is an achievable goal, and a pastime that she can share with her friends.

In Allan and Chloe’s case, achieving a personal sense of satisfaction does not rely on any institutional standards. They are guided by a sense of pleasure, the experience of joy in the learning process, with a choice of music that is relevant to one’s existing socio-musical world.
5.2.4.3 Making Music with Others

Simon’s case exemplifies a kind of social engagement that is closely tied to the music learning process itself. Simon is really motivated by learning how to play the trumpet, not making new friends through playing the trumpet. As mentioned earlier, he practices playing the trumpet only at the end of the day, once his professional and personal obligations have been completed. As such, whatever time he does dedicate to participating in musical activities is given over to the things that he enjoys the most.

His participation in community-based music ensembles has been constant since he first started in his high school band. He describes the interaction he had with other members of the community orchestra that he has participated in for 11 years while he was in Hong Kong:

*I don’t need to talk to the first violin, or I don’t need to know the bass. But I will need to know my colleague, kind of the brass section, right? Even woodwind, I may not need to talk to them, and they don’t like us, because they sat in front of us. We were blaring at them. So that’s about it.* (Simon, interview, February 5, 2011)

The joy of participating in community orchestra is the joy of playing in such a large ensemble, performing pieces that one often only gets a chance to listen to as an audience, rather than as an active participant. He has been a part of a community orchestra in Toronto for the last five years, and he describes with great enthusiasm an upcoming concert that he will be participating in:

*I don’t know why he [the orchestra director] is so ambitious. He is getting older and older, and his ambition is getting higher and higher. This year in June, he is going to play Scheherazade by Rimsky-Korsakov. By a youth orchestra? No way. So he asked me to help, so I said OK, I will help. Even I don’t have enough confidence for those notes! So I said, but I am very excited to be able to play. Because you don’t have a lot of chance to play such a high caliber orchestra music in your life. So I’d like to go back in; at the same time, I’m a bit nervous. I don’t think I can play everything (snap) like that.* (Simon, interview, February 5, 2011)

The quality of the music that the community orchestra plays is secondary to the act of playing together itself. As long as everyone is playing together, experiencing the thrill of making music
at such a large scale, they have achieved something that no one, individually, could have accomplished. Making music with other people and honing his skills as a soloist or an orchestra member is an important source of personal satisfaction and achievement for Simon’s on-going process of learning how to play the trumpet.

5.2.4.4 Finding A Way to Learn

One final process of self-directed learning we should acknowledge is the fact that it is not always an intuitive process to even begin the process of self-directed learning. In Gile’s case, the developing of an interest in music itself was not enough to help him establish a way to learn music within the framework of his existing life. However, like the other cases we have discussed above, he relies on his own socio-musical world as a frame of reference, and is driven by his personal interest in technological innovations. He focuses his effort to identify a process of self-directed learning that suits his interest in learning music and on finding new technologies that could help:

I think there are new guitars that have digital training built into them, where they tell you where to place fingers to play the guitar so, that’ll be a good way to see if you’re doing the right thing.

I could basically project the piano keyboard on the table and the projector will show you where to play. Then you’ll play on the surface, but it has the keys, and it’ll detect your finger movement and play the music. (Giles, interview, February 3, 2011)

Giles continues to consider different options, but as technologically mediated learning is still relatively new, there are no standards for reference, and where they do exist, they are often based on generally accepted norms of what one needs to learn when learning about music. As such, it is difficult for him to assess on his own whether a piece of technology is actually useful for his purposes. We will address this topic in the following section.

5.2.4.5 Section Summary

The process of self-directed learning is a dynamic process that is both shaped, and is shaped, by the individual’s interaction with his or her world. It is characterized by the personal needs and
limitations of the learner and the availability of resources and opportunities within the learner’s socio-musical world.

### 5.3 Self-Directed Learning in the Domain of Music

Having addressed the context from which self-directed learning emerges—namely, the socio-musical world in which one is situated, the limitations that individuals face, and the defining of one’s learning trajectory—specific processes of learning that are unique to the domain of music will now be discussed. These learning processes in particular impacts how we understand information behaviour in a way that is specific to the domain of music. This section will be a discussion of some of those learning strategies as illustrated by the cases.

What is worth reiterating is that the subject of music should be considered to be a socially situated phenomenon. However, by looking at the way particular individuals have approached the challenge of learning music on their own, common skill sets and strategies of learning music on one’s own do emerge. Each of the five subjects engage in the act of critical listening and share, to various degree a common and fundamental understanding of music as sonic-patterns of human expression.

#### 5.3.1 Pattern Recognition

Pattern recognition plays an important role in facilitating self-directed learning in surprising ways. In-lieu of formal or structured learning, musical and social patterns become important as personal anchors as well as guiding posts throughout the self-directed process.

##### 5.3.1.1 Music as Institutional and Canonized Standards

Standardized written examinations that are offered by institutions such as music conservatories, for example, often can be prepared for without deep understanding of the materials covered. As with any test preparation, there are always strategies to solve the problems. Without the benefit of a teacher but desiring to follow the examination guidelines to give himself a learning structure, Simon relies on his ability to identify patterns in the exam questions to prepare for his written exams:
If you have patterns, it’s almost like doing math with formula. If you apply the right formula, you get the right answer. So, this is what I said, I prepare myself for exam. But, um, seriously, I did not prepare myself as a musician. (Simon, interview, February 5, 2011)

The canon of Western European music from which the written exams were drawn, especially the works of J. S. Bach, are often used as a benchmark for how to write harmonic progressions in music based on either a melody line or a bass line. Simon studies the musical scores as part of his exam preparation and, in the meanwhile, expands his knowledge of the classical music repertoire. More specifically, Simon uses it as a reference to self-evaluate his progress. Often, in the process, he gains a deeper appreciation of the music, and becomes inspired by the expressive quality of music that Bach seems to be able to draw out:

The Bach’s book... the choral, 370 something—I have that book. Of all the chorals. You know what I do? They give you some lines and then you finish the 4-part harmony. When I finish I mark it myself, as much as I can, and then I go to the book and compare. I look for, say, if it’s a F major that it starts with, I look for all the F major. I find the choral most of the time, and then I look at what Bach did and what I did. Oh, my god! He did so well, right? He did so well! (Simon, interview, February 5, 2011)

5.3.1.2 Music as Mathematical and Structural Patterns

Allan has always relied on musical patterns to learn music. Aided by his aural memory, he finds it much easier to memorize sound and associate actions or keys on an instrument with that particular sound, than try to read music. Pattern recognition is an important process through which Allan engages in self-directed learning:

And, I mean, the overarching goal of everything is ... figuring out the patterns. Music is a neat thing to figure out patterns in because it’s all human invention. You notice there’s something there ... and finding out what it is is a fun little mystery. (Allan, interview, February 1, 2011)

Reading text poses less of a problem; thus, reading the letter of chords allowed him to read music in order to play songs on the guitar:
Chord letters are way easier to learn, and chord patterns are way easier to remember than little black spots. Little black spots all look the same to me. I know that they’re not, and I can’t figure out why they’re not. (Allan, interview, February 1, 2011)

It was through reading Goedel, Escher, Bach (GEB) that Allan was introduced to the structures and patterns in Bach’s music through a mathematician’s eyes, opening up the possibility of perceiving patterns in music through the lens of scientific disciplines:

[GEB’s] illustrations of the underlying patterns of Bach music was really, really neat, and it got me interested in all kinds of neat stuff about patterns in music. (Allan, interview, February 1, 2011)

Giles had a similar experience when his friends, who studied music in university, introduced him to the structures and patterns in Bach’s music. What struck him was the possibility of music as a mode of human expression, something that he had not really considered before his awareness that such patterns existed:

... certain structure to the music, which is not random. It’s built into the music. So that’s what I mean by structure. There’s a certain thing about music that makes it unique, and, uh, my interest is to find out what that is. How does it happen? Do I have my unique, uh ... thing that I can add to music? So I don’t know what that is, but that interests me. (Giles, interview, February 3, 2011)

5.3.1.3 Music as Sonic-Patterns of Human Expression

Jason is a great illustration of someone who perceives the rich potential for human expression within music. He has a keen perception of human creativity and intention behind every musical experience. He pays attention to not only the music, but also the human processes behind the music:

I could be at a rock concert and be just sitting there watching the guitar, and how the guys put the strap on, and how it’s playing, and how that’s imposing limitations on which types of chords he can play. Now he’s got the thing low strung, so he can only hit it that way [gestures to an air guitar he’s holding], and since it’s down this way he can’t actually make a bloody bar chord. Oh, that’s why he’s doing that! Oh, interesting, neat! I could be sitting in a concert jumping
He describes his musical tastes as ‘obnoxious’ for most people, but he finds them “very melodic and intellectual at the same time.” He is most interested in what he calls intellectual music, music that’s “meta-conceptually aware of/about what the process of composition [is] and have … a reflective intentionality.”

Jason perceives the human intention behind music, and muses about the way we teach our children to be passive consumers of music, while assigning a very small number of people who are ‘permitted’ to engage in music after going through a standardized music education:

> Children don’t get an opportunity to experience authentic voices, authentic experience, which I think is really crucial. And I hate the fact that they’d say, "Well, you’re not very good at it. Don’t do it." "Hey, you really suck at it. Do it again. That was cool." I like that attitude much better. (Jason, interview, February 8, 2011)

The different patterns identified by Simon, Giles, and Jason reflect the way each of them make sense of the world. Pattern recognition can occur at different levels, and what is most surprising is that most of it is not directly related to the music itself \textit{per se}. It has to do with the patterns of institutional learning, abstract mathematical concepts, and expression of human creativity, all of which reaffirms the socially situated nature of music.

5.3.2 Critical Listening

In order to actually perceive patterns that occur within the domain of music, one is required to engage in focused and critical listening on some level. It is a matter of focusing one’s attention on the sound they hear and discerning some kind of meaning and making sense to what they are hearing. What makes sense and holds meaning for one person naturally differs from that for another, but it is worthwhile to recognize the role this fundamental act of perception in the process of self-directed learning plays in all of our cases. In addition to the many instances of listening to which we have referred in this section, we will consider here two specific forms that illustrate listening as an essential part of learning music.
5.3.2.1 Listening as Feedback

The simplest form of critical listening is perhaps listening to oneself. Both Simon and Chloe recorded themselves for the purpose of assessing how well they were playing their instruments, as a form of feedback:

I wanted to hear what I sounded like. Because I know it sounds different when you’re playing it than when somebody’s listening to it. Even just the angle, just the way the instrument is positioned, it sounds differently for you than for other people, and I just wanted to know what it sounded like. (Chloe, interview, February 8, 2011)

Sometimes, one engages in critical listening because someone else wants you to give feedback, as in the case of Allan and an ex-girlfriend, who was a bassoon player:

I did a lot of orchestra listening, and now I have awesome ears for orchestra. Because after she played in a concert, I was expected to go through detailed analysis of everything that everyone in the orchestra had done well and poorly, you know. If the flautist had flubbed their solo in the 3rd movement of the Beethoven, well, I was expected to remember that. Or, if she had screwed it up, she wanted to know how she’d played, you know. (Allan, interview, February 1, 2011)

Listening to others while playing together is an effective form of instant feedback. The musical momentum of the group carries you forward, while active listening can identify the musical elements that are out of sync or can be tricky to put together. Chloe describes the experience of attending two ukulele workshops:

... you can hear singing so you can sing what they’re singing, and you can hear other people playing so you can keep the beat easier. I don’t really know how to describe it, but it’s just easier when you’re doing that in a class. (Chloe, interview, February 8, 2011)

5.3.2.2 Listening as Mode of Learning

Listening as simply a process of enjoying music is one that most people engage in, regardless of whether they are intently engaged in a process of self-directed learning. For Giles, who has not
made very much headway in his desire to learn to play an instrument, cultivating a love of listening to music has become an essential part of his learning process.

He listens to music regularly, whether it is music he plays while working, which somehow helps him focus, or setting time aside a few times a week to listen to music from his collection. Listening, and selecting music to listen to, becomes his primary mode of learning music:

\[ \text{Some CD[s] you know they're good. If it's played at the MET by such and such orchestra ... distributed by Sony or something? You know you're going to get a good quality product. (Giles, interview, February 3, 2011)} \]

Through the process of selecting recordings based on features that he is familiar with—such as record labels, composers, prestigious venues—and regular listening, Giles develops an understanding of, and a taste for, classical music.

5.3.3 Section Summary

The socio-musical patterns identified by self-directed learners through the act of listening triggers a sense of curiosity that drives the process of self-directed learning itself forward. Listening as a learning process articulates the ill-defined boundary between what is musical and what is social. In order to speak of what is musical when describing the process of learning within the domain of music, it is necessary to also speak of what is social.

5.4 Mediation of Online Music Knowledge

The uses of technology and online resources for self-directed learning cannot be understood in isolation. In this section, we will consider the way self-directed learning in the domain of music is mediated by the use of technology and online resources.

5.4.1 Learning with Technology

Technology opens up different ways of exploring music, especially for those that have not been able to benefit from the opportunities to learn music at school or at music conservatories for various reasons. It is not surprising that Allan, Jason, and Giles, all of whom attempted to learn through institutional means but did not find it compatible with their learning needs, turned to
technology for alternative learning opportunities. Despite their different musical inclinations and personal challenges related to learning music, technology offers a way of addressing those personal challenges.

For those who find it difficult to wield a traditional musical instrument or to read music, technology offers a way to engage with music with an immediacy that does not require any prerequisite musical knowledge.

While Jason’s process of learning has always been one of exploration or composition, Garage Band allows him to pull sounds out from simply putting his cursor over particular nodes, which has made it possible to create much more complex music. Here he comments on the strength of Garage Band:

*I like the fact that composition comes before technical ability, and that you can be composing before you can articulate a composition. So I can move to just mashing up things, to creating my own by dragging things around, to creating musical scores and giving them to people, and then the last I could actually learn how to play the piano. Or never. And it wouldn’t make a difference.* (Jason, interview, February 8, 2011)

For Allan, whose limited motor skills still allow him to wield an instrument, albeit with less dexterity than most people, his preference is still to make music through an instrument, even an input device to a computer:

*I want to make noise. But piano is a way to get into the computer, where you can make almost any noise you want. Clicking on, you know, virtual objects on the screen really sucks. But the actual synthesizing abilities of a computer is awesome.* (Allan, interview, February 1, 2011)

Despite his difficulties with engaging in traditional ways of learning music, Allan has an aural appreciation for the capabilities of real instruments to create sound. Technology such as the eigenharp is just only beginning to explore the same range of expressiveness that acoustic instruments are capable of:
Like, midi is so bad, from a technical perspective, you know. The engineer in me quails at the idea of trying to do music over 16 kilobits; like, it’s just nuts. So, I mean, the eigenharp is worth it just for the better interface, and the fact that they can do with thousands of samples every key every second means that, OK, now we’re getting into the realm where hearing works, you know? (Allan, interview, February 1, 2011)

While technology’s endless potential to create any sound imaginable is certainly an advantage, there exists a limitation for the kind of chance discoveries that happen in the real world. Jason notes:

What I can’t do is … have the types of serendipitous discoveries that comes through error... the error of a finger slipping and you finding all of a sudden you’ve got a lead into something that you hadn’t expected before or that’s a better chord ... You don’t discover things with computers in the same way as you can discover them with your physical body. Sneezing at the same time on your trombone, right? And also: "What? That’s a weird sound. I want that one!" (Jason, interview, February 8, 2011)

Technology has the possibility of legitimizing musical activities that have not been previously acknowledged or recognized. The online context in particular is mediating popular notions of what are considered legitimate ways of making and learning music.

5.4.2 Learning with Online Resources

Chloe and Simon’s musical interests are quite simple in that they just want to know how to play an instrument well and to get to know the types of music that can be performed on their instruments. Neither are particularly interested in seeking out technological innovations that are designed to support the music learning process. However, they do rely on the availability of online resources as information needs emerge.

Since Simon began his learning process prior to the wide availability of the internet, he relied on the two years of instruction he received on the trumpet and the piano, as well as his experience playing in his high school band and later the community orchestra in Hong Kong, as learning opportunities:
When I played in the orchestra, I was not playing in tune. But somehow the conductor put up with us. First of all, at that time [the] wind instrument was not at a very high standard. Second thing is, even the audience does not have very high standard. So when I look back, I feel so bad, really, for the conductor who put up with me for 11 years, when I did not improve much. I may play fast and loud, I may play ‘accurately,’ but not much in tune. Now I know (laughs). (Simon, interview, February 5, 2011)

While playing in community orchestras gave him lots of performance experience, and allowed him to learn a large repertoire, Simon only began to explore his intonation problems when he started picking up the trumpet about five years ago in Toronto. It was a problem he had been aware of, especially when he purchased trumpets with different tuning in Hong Kong. However, when he purchased a piccolo trumpet and realized that he sounded like he had never played a trumpet before in his life, he began to look online for answers.

Slowly I know that I’m not playing in tune, and I think when I pick up my piccolo trumpet here it really exposed you to that. And you start to research on the internet, and then you start to know what is going on. (Simon, interview, February 5, 2011)

Based on other people’s experiences, and advice from other trumpet players who have put up websites and blogs, Simon found consensus in the way intonation problems are described and the proposed methods for correcting them. In lieu of a teacher that could teach him how to fix his intonation problem, he relied on the wisdom of online citizens for help.

The online context is a powerful way to learn from other’s musical experiences, and also to discover ways to engage with a musical community. The presence of ukulele players online manifests itself through forums, YouTube videos, blogs, and websites, from which Chloe learned about the different kinds of people who play the ukulele:

It’s really interesting because everyone is really helpful. So people would ask really stupid questions, and even as a beginner I can tell that these questions people were asking were really stupid. But people would take the time to answer them. And I even remember reading, people were saying how the ukulele is such a
welcoming, inclusive instrument, compared to the guitar. (Chloe, interview, February 8, 2011)

While it was the online presence of ukulele players that helped Chloe explore that musical world, it also led her to a ukulele group in Toronto and instrument vendors who sell ukuleles. The prevalence of ukulele in both online and popular media means that there is a high volume of new content that is generated and requires some regular monitoring to catch topics of interest to her. However, she is not always reading everything that she subscribes to:

I check the forums probably once a week to see if there’s anything new and relevant. People will post songs that they think are fun or songs they are learning... I used to subscribe to some blogs on my Google reader, but I deleted all the bookmarks a few months ago so I can concentrate on my thesis. I’m on a couple of newsletters—"Ukulele Hunt," I’m on their newsletter—but I mostly just delete it as soon as I get it. (Chloe, interview, February 8, 2011)

Simon’s use of online resources is similarly sporadic. Once he started getting the same information on intonation during his searches, he stopped looking as he felt that there was not much new information he could find. When preparing for exams, he looked up YouTube videos of recordings to listen to how the accompaniment sounds like, a purpose for which CDs were used when he was in Hong Kong:

You look for recordings. Different people have different recordings. I used CDs before. Nowadays you can use YouTube. Almost everything you can find on YouTube." (Simon, interview, February 5, 2011)

5.4.3 Music Information Practices

Generally speaking, the activities that could be described as information practice in the five cases can be described as a search for a frame of reference in the domain of music. These practices articulate a context within which a sense of direction can be established within the process of self-directed learning. Non-musicians engage in the processes of browsing, socializing, and listening as part of their information seeking activities. We will discuss how each of these are characterized by each of the cases.
For non-musicians, information behaviours occur as a result of experiencing a plateau in their learning process, a need to connect with socio-musical worlds, and an inability to clearly articulate their information need. Each of them understands the domain of music—with its various actors, institutions, artifacts, and communities—very differently. Their particular socio-musical worlds, along with their shared interest in learning music outside of an institutional context and their varying degrees of familiarity with how to talk about music, influence the way they engage in information seeking.

For example, one could begin the process of self-directed learning as Chloe did: with a specific interest, such as learning the ukulele, and the specific task of finding an instrument one likes, and getting started with one's favourite songs. Or one can encounter Giles’ experience of being overwhelmed with the range of possibilities and not quite knowing how to begin. Chloe’s frame of reference is narrow and focused, while Giles’ is wide open as he imagines the technological aid for learning music that he simply has not discovered yet.

5.4.3.1 Experiencing Learning Plateaus

A plateau is a stage that every learner experiences when they feel that they are somehow stuck, no longer progressing, or simply not sure how to further improve themselves. The kinds of plateaus experienced by our cases vary greatly. In Chloe’s case, she does not have set expectations of what she needs to achieve in terms of playing the ukulele. She plays in order to have fun and is not particularly concerned about her progress, but she did have the challenge of locating workshops in Toronto and purchasing a good instrument to play with. In Simon’s case, he uses conservatory exams to mark his progress, but as he approached the final level of performance exams for trumpet, he had to address the problem of intonation in order to pass successfully.

In both cases, Chloe and Simon browsed published resources, both in print and online, that were related to the challenges they had to resolve before being able to move forward in their learning processes. Each had a clear direction for their query, but it was not clear to them right away whether the resources they were perusing were actually helpful, useful, or relevant.
Simon found resources that helped him understand the intonation problem he was having, and discover ways to address the problem, while Chloe looked online for knowledgeable vendors who could help her buy a good ukulele when local music stores could not answer her questions in a satisfactory way. In both cases, multiple instances of the same information online gave them more confidence regarding its accuracy and reliability. In many ways, the right answer was not identified before the browsing process began, and the browsing process ended when the plateau had been addressed, or in Simon’s case, when the usefulness of particular online resources—which answered questions of what intonation problems are, but not questions of how to effectively fix his intonation problem—had reached its limit.

Browsing is also used as a way of maintaining awareness of the relevant socio-musical worlds. Since Simon is using institutional pedagogy as a frame of reference, he refers to published resources that are used within an institutional setting. He browses the trumpet section of music bookstores, reviews exam syllabi to look up the recommended pieces to play at each level, and peruses textbooks that are used for teaching trumpet playing. While Chloe’s learning process is a lot less focused, she nonetheless maintains awareness of the activities in the ukulele forums that she visits, and the local ukulele workshops and jam nights that happen regularly through RSS feeds and email subscriptions.

5.4.3.2 Engaging with Socio-Musical Worlds

Engaging with socio-musical worlds is itself a kind of information seeking behaviour. A level of curiosity about other people, as illustrated particularly by Allan and Jason, can lead to learning new things about music by virtue of learning about how different people are engaging with music. Musical friendships allow non-musicians to peripherally engage with different musical worlds that they otherwise would not have been able to experience.

One of the simplest ways to engage with socio-musical worlds is through the act of listening. Chloe uses Dropbox, which enables her and her close friends to share with one another new songs that they have discovered. All of her friends have very different musical tastes, and while she does not enjoy every song that her friends upload, she becomes aware of emerging musical trends and catches references to them in popular media.
Allan has experienced different musical worlds through associations with his life-long best friend, his bassoonist ex-girlfriend, and online communities of eigenharp players and fans of the Grateful Dead. Through these friendships, he is exposed to recordings, books, and learning resources that are both new and familiar to him. Interaction with various socio-musical worlds becomes a sort of social monitoring that allows him to stumble upon new but relevant ideas, or continue to explore familiar ones.

While Jason has also gained a lot of his knowledge about music by observing and asking his musician friends to explain what they are doing or what kind of music they are listening to, the socio-musical world that he engages with the most is one that he experiences through the act of listening. In particular, the world of experimental and ‘edgy’ music is one that resonates with his appreciation of music as sonic-patterns of human expression. Through listening to such music, he picks up on the songs that he likes and actively learns from the creative and musical processes behind it. The socio-musical world of experimental music complements the experimental and exploratory nature of his own learning process, and the type of information he seeks are new ways of thinking about and making sounds.

5.4.3.3 Putting Music into Words

In many ways, the type of information that Jason is seeking can only be described but not articulated in words, which is a common quality of information needs within the domain of music. A poignant example is Giles’ struggle to articulate the difficulty in pursuing self-directed learning even to himself ever since he had the desire to learn music. There is no doubt that Giles has developed an appreciation for classical and jazz music, and is actively engaging in that world by listening to recordings. What is interesting about Giles is that while he has difficulty articulating his learning needs, he has directed his efforts to finding technological solutions. In a way, Giles is articulating his learning needs through the lens of the world of technological innovation, with which he is intimately familiar. He described with ease the features of ‘smart’ technologies that would help him learn music, such as interactive projected surfaces that would improve mobility of an ‘instrument,’ or light indicators to show you where to put your fingers to play a song.
5.4.4 Section Summary

While the availability of online resources for learning music has opened up many opportunities for non-musicians to engage in self-directed learning, it cannot be taken for granted that the mere existence of such resources is sufficient to facilitate the learning process. When looking at the information seeking behaviour of a non-musician, the larger context within which the behaviour occurs—be it the learning process or the larger socio-musical world—should be taken into account. In the next section, we will expand on the idea of this “situatedness” of non-musicians’ information behaviour.
6 Analysis of Findings

If we wish a different world, it is necessary to design humane and liberating technologies that create the world as we wish it to be. (B. Nardi, 1996, p. 44)

From the perspective of an individual aspiring to learn about music, self-directed learning can be a daunting and potentially difficult task. Buying the right instrument, finding instructional materials, figuring out the vocabulary, and finding social support through the learning process are just some of the challenges one has to face. Learning music independently, without access to the right resources, can be a very discouraging experience. What the cases in this study have exemplified are the creative ways through which individuals overcome those challenges and their perceived limitation. They demonstrate the diversity of ways in which the singular task of learning music can be tackled, but they also share a common desire to define their own learning pathways and trajectories.

Having discussed their individual reasons and motivations for engaging in self-directed learning, we will now shift our focus to address the overarching themes that connect all of these cases together, and their implications for the design of information systems that facilitate the access and transmission of music knowledge. We will pay particular attention to ways that information systems and knowledge platforms can be designed to better support the process of self-directed learning engaged in by non-musicians.

6.1 Situating Information Practice in a Learning Context

When looking at the information needs of non-musicians in the last chapter, we noted the following information practices in relation to the domain of music: the need to connect with socio-musical worlds, the experience of a learning plateau, and the need for information that can help them articulate an information need. The first reflects the situated nature of musical knowledge, the second reflects the nature of the learning process, and the third reflects the tacit dimension of music knowledge.
We also noted that while the *processes* of learning were not the same between the five cases, their reasons for engaging in self-directed learning were the same: a need for a flexible and personalized way of learning that is curiosity-driven. In other words, while self-directed learning is characterized by its highly individualized nature, the role of the learner in shaping the learning process is also a fundamental characteristic.

During the analysis of the information seeking behaviour of non-musicians, we identified two dimensions that shape the process of self-directed learning that non-musicians engage in: their *learning trajectories* and their *modes of learning*. Trajectories of non-musicians’ learning are shaped by their general interests in particular musical worlds, practices, or genres. The modes of learning are shaped by their personal strengths and limitations, particularly as defined by the type of temporal, spatial, physical, and cognitive limits that we discussed in the research findings. Respectively, they represent the ‘larger’ socio-musical contexts and the ‘smaller’ personal contexts within which learning is engaged (see Figure 1).

What emerged naturally from the cases is that the information seeking behaviour of non-musicians is intricately connected with their learning process, and cannot be considered
separately from the larger learning context. As such, the term ‘information practice’ will be used from here on, as it is a more accurate reflection of the way we are conceptualizing and analyzing the findings. In particular, we have found two dimensions of the learning process that inform non-musician’s information practice in two important ways:

1. The trajectory of learning informs the nature of the music knowledge one is seeking.

2. The modes of learning inform the way we seek and conceptualize music knowledge.

Furthermore, the context from which their information practices emerge fall into two corresponding categories:

1. They are trying to orient themselves by defining or navigating within their trajectory of learning.

2. They are browsing or accessing 'resources' (such as people or musical instruments) to explore different modes of learning.

In both cases, information needs arise as a result of engagement in what Engeström (1999) has described as expansive learning, a mode of learning that is a hybrid of the acquisition and participation form of knowledge acquisition. Most importantly, it is a framework that conceptualizes the learning process much in the same way we have conceptualized the seeking of music knowledge: as “an on-going process of questioning, discovery, and changing both oneself and the world” (Mwanza-Simwami, Engeström & Amon, 2009, p. 365). Throughout this chapter, we will use the term non-musician, self-directed learner, and learner interchangeably to reflect these interconnected frameworks.

While the notion of expansive learning has most often been used as “formative intervention” within a research context, the framework has also been used to develop other frameworks for evaluating learning activities that involve new technology (for a highlight of recent studies applying this framework, see Engeström & Sanino, 2010). For our purposes, we are adopting the framework as a way to further synthesize the findings. Throughout this chapter, we will also
draw on Nonaka’s concept of *Ba* (1998) as a framework to conceptualize platforms for music knowledge creation and transmission based on our findings.

### 6.1.1 Frameworks for Analysis

> Expansive learning requires articulation and practical engagement with inner contradictions of the learners’ activity system ... Expansive learning is an inherently multi-voiced process of debate, negotiation and orchestration.  
> *(Engeström & Sanino, 2010, p. 5)*

> If knowledge is separated from ba, it turns into information, which can then be communicated independently from ba. Information resides in media and networks. It is tangible. In contrast, knowledge resides in ba. It is intangible.  
> *(Nonaka & Konno, 1998, p. 40)*

The findings in this study match closely to Engeström’s heuristic framework of expansive learning, which is particularly useful in “analyses of learning in non-traditional, hybrid and multi-organizational settings,” where “nobody knows exactly what needs to be learned” (Engeström & Sanino, 2010, p. 3) ahead of time. They also note “the interactive potential of the internet, or Web 2.0 … opens up a field of possibility for the formation of new types of activities and values with huge expansive potentials.” (Engeström & Sanino, 2010, p. 4)

In particular, the notion of “contradiction” as an important motivation for expansive learning and the transformation process of a germ of an idea into a learning practice reflect the personal challenges that non-musicians have to confront, as discussed in Section 5.2. There is no ‘right’ way for non-musicians to engage in self-directed learning, as they are each driven by their individual inclinations and interests. Yet, when taken together, their trajectories and modes of learning sketch out an expansive space within which self-directed learning is engaged.

Nanoka’s SECI model (Socialization, Externalization, Combination, Internationalization) offers a framework with which to think about the knowledge-seeking behaviour as it is situated within particular spaces. Knowledge exchange that occurs outside of these mediating spaces, which Nanoka calls *Ba*, are merely information exchanges. His reference to Polanyi’s concept of tacit and explicit knowledge is useful in describing the tacit dimension of music knowledge, while the
model’s emphasis on space helps us conceptualize the types of emergent spaces that can facilitate the knowledge-seeking needs of non-musicians.

Similarly, Engeström’s expansive learning model is built upon activity theory, and thus considers activity as the primary mediating agent with which to consider a wide and expansive context, both at the socio-cultural and at the personal level, which informs the activity itself. In particular, the sequence of learning actions in an expansive learning cycle (questioning, analysis, modeling, examining, implementing, reflecting, consolidating) offers a useful framework for conceptualizing the self-directed learning we have observed in the cases.

These two frameworks, while rooted in different theoretical traditions, both offer a metaphor for knowledge creation (Paavola et al., 2004) that rejects the notion of knowledge acquisition as consisting of discrete tasks or information. They understand “knowledge as a dynamic human process” (Nonaka, 2004, p. 15) and recognize learning as a process of “continuously absorb[ing] new knowledge while restructuring existing knowledge” (Mwanza-Simwami, Engeström & Amon, 2009, p. 364), two important ideas that have anchored our discussion of music knowledge and self-directed learning. Furthermore, Nonaka’s emphasis on physical and conceptual spaces for knowledge creation and Polanyi’s focus on learning as an activity for knowledge transmission and transformation are complementary to our conceptualization of music as mediated experience.

As such, we draw on both their works in order to analyze the two learning contexts from which non-musicians’ information needs arise: the need to orient and situate oneself within a learning trajectory or a space for knowledge creation (Nonaka), and the need to explore different modes of learning (Engeström). We will now consider in more detail the relationship between trajectories of learning, modes of learning, and the nature of information practices within the domain of music.
6.2 Learning Trajectories of Non-Musicians: Situating Emergence of Music Information Need

*Learner activities are largely driven by motives and relationships that exist in the context in which learning takes place.* (Mwanza-Simwami, Engeström & Amon, 2009, p. 361)

As suggested in Figure 1, the *learning trajectories* of self-directed learners provide a context within which to understand their information practices. In particular, they provide a context from which information needs emerge, whether the learner can clearly articulate that need or not. In this section, we consider the information needs of non-musicians as emergent rather than discrete. We explore this idea through a triangulation of concepts that define the learners themselves. These are concepts of their *learning trajectory*, their *musical interests*, and their *socio-musical world*.

6.2.1 Learning Trajectories

The learning trajectories of non-musicians are defined by the *actors and relationships* within their socio-musical world on the one hand, and their own *personal inclinations and preferences* on the other. While these factors actually have a dynamic and co-constituting relationship with one another, we will use learning trajectories to anchor our discussion of non-musicians’ emergent information needs within a learning context (see Figure 2). The learning trajectory sets the fundamental tone and direction of a self-directed learning process, and offers a context within which information needs first emerge. In other words, an understanding of a non-musicians’ overall trajectory of learning leads to an understanding of their emergent information needs.

The learning trajectories of each of the non-musicians that we have studied are illustrated by individual musical interests that are closely related to the socio-musical worlds in which they situate themselves. Their *personal inclinations and preferences* help us understand their motivation for pursuing a particular learning trajectory, while the socio-musical worlds within which they situate themselves inform their conceptualization of music.
6.2.2 Shaping a Trajectory

A learner’s motivation for learning and conceptualization of music play a major role in shaping their own learning trajectory, whether they are consciously shaping the trajectory or not. In the case of the non-musicians, their primary motivation for learning music was for personal enjoyment. Music as a domain has meaning for them in some way, and the process of learning music is to further explore that interest in a personally meaningful way.

Engeström speaks of motivation as a fundamental factor in engaging in any kind of learning in his remarks on “the significance of learner motives in determining learner engagement in activity (Engeström, as cited in Engeström, 2009, p. 366).

Each non-musician’s particular conceptualization of music is reflected by the socio-musical worlds—or the actors, institutions and relationships—with which they are engaged with as part of their learning trajectory. For example, all of the non-musicians described their interactions with particular friends and family members who had an impact on the way they engaged with music, and reflected on their experiences with institutions of music such as public schools, conservatories, record labels, and music stores. Actors, institutions, and relationships do not automatically shape one’s conceptualization of music, but they mediate our conceptualization
vis-à-vis the way we interact with them.

For example, Chloe’s interests in music are often discussed in relation to her experience as a girl guide, to time spent engaging in music-related interests with friends, or to the piano lessons that she disliked, all of which made up her world at various points in her life. In Jason’s case, his experiences and insights were formed in relation to many musical and non-musical activities within educational contexts, in which he struggled to pursue music within the institutional norms. In Simon’s case, we see that he did not feel the need to venture far away from the classical institutions of conservatories and Western music ensembles, such as the orchestra, to explore his musical interests.

Below, we will consider how the emergence of information needs can be informed by the learning trajectory of non-musicians.

6.2.3 Emergence of Information Need

The way non-musicians conceptualize music and their motivations for engaging in self-directed learning—in other words, their learning trajectories—are directly related to the way we understand the information needs of non-musicians as emergent.

While recognizing a need to seek out something that they need during the process of self-directed learning, non-musicians often have a difficult time articulating a discrete query, either to a search engine or a live person, to find exactly what they are looking for. While the “need to seek” is guided by their learning trajectory, the “information need” itself goes through a process of articulation and conceptualization.

Giles’ motivation for learning and conceptualization of music, for example, led him to ‘articulate’ an information need (i.e., “how can I learn music?”) through the familiar world of technological innovation and classical music, by trying to find “smart” instruments that are designed to teach people how to play music.

To illustrate this emergent quality of non-musicians’ information needs and explore the concept of learning trajectories as a context for situating their information needs, Figure 3 shows an axial
spectrum that maps out a conceptual space defined by types of trajectory: informal, formal, individual, and institutional. Each of the five cases is also placed on the map to illustrate its use.

6.2.4 Learning Trajectory as Emergent Context

In Figure 3, trajectories of learning are defined by whether the learner engages in a formal trajectory that is highly structured or a casual trajectory that is more spontaneous. They reflect different levels of commitment such as the amount of time one has to devote to learning, as well as the personal preference for highly structured or spontaneous and opportunistic forms of learning.

![Figure 3. Situating the emergence of Non-Musicians’ information need.](image)

One important difference between the formal and casual trajectories of learning is the way success is determined. Clearly, the amount of time and commitment one devotes to learning is not necessarily an indicator of success. In fact, upon close reflection, all trajectories of learning have inherent in them ideas of 'success,' and the measure of success in self-directed learning is experiencing personal enjoyment. Furthermore, while the concept of formal and casual trajectories of learning arose out of a comparison between learning engaged within a structured institutional context versus a more relaxed context, the personal preference for a highly
structured trajectory outside of institutional or other standardized contexts is conceivably a form of self-directed learning itself. As such, the dimension of individualized versus standardized trajectory is also present, reflecting the dynamic nature of learning communities that can be engaged within the non-musician’s socio-musical world.

Regarding Giles’ case, his position near the centre of the graph is telling. In many ways, he is still trying to define a learning trajectory. He is able to articulate his interest in particular forms of music such as classical and jazz, but he is unsure of how to find a process of learning that would suit his professional lifestyle and his personal inclination, both of which are situated within the world of innovative technologies. Arguably, Jason and Allan also have an interest in how technology impacts the way one can engage with music, but Jason’s trajectory of learning is highly personal and exploratory—situating him in the lower left corner of the chart—while Allan explores music through established disciplines such as physics and computer science, with musical interests within a wide spectrum of Western music spanning from Bach to the Grateful Dead.

In situating non-musicians within their learning trajectory—by understanding their motivation for learning and their conceptualization of music—a corresponding “knowledge trajectory” could be articulated as a direction for exploration. In many ways, understanding non-musicians’ information needs is akin to understanding their conceptualization of music as a domain of study itself:

...a person constructs his or her own version of the subject matter during the learning process, that is, formulates his or her own theory about the study domain (Engeström, as cited in Engeström, 2009, p. 367)

Each of the non-musicians’ personal musical inclinations and preferences are invariably defined in relation to various socio-musical worlds. In some ways, Simon’s use of the conservatory system as a trajectory of learning, or Chloe’s use of mass media to explore her interest in the ukulele, is not incidental to their personal conceptualization of music. In other words, even if a non-musician has trouble clearly conceptualizing or articulating an information need, by understanding their learning trajectory, they can be directed to resources that are situated within
particular socio-musical worlds that are more likely to have ‘relevant’ information that they are seeking, but cannot yet fully articulate. In the next section, we will consider the process of information seeking itself by addressing non-musicians’ modes of learning.

6.3 Learning Modes of Non-Musicians: Situating Music Information Seeking

The second layer that informs the information practice of non-musicians, as noted in Figure 1, is their modes of learning. “Mode” refers to the way in which the experience of music within a learning context is mediated. It is a way of understanding their information seeking behaviours in relation to their personal preferences for particular types of interactions with socio-musical worlds through which they seek information. Specifically, we suggest that the non-musician’s mode of learning informs the way they seek and conceptualize music knowledge.

The mediated nature of music has been explored in a variety of ways in Chapter 2, and we have touched on its relevance particularly in relation to understanding the socio-musical world or the actors and relationships that make up a learner’s large context. Here, we further explore the concept of mediation as a way of understanding the process of learning music, regardless of the world in which it is situated. Specifically, we suggest that by conceptualizing the process of learning music as the exploration of different mediations of music—at the level of communities as well as at the level of personal processes of learning—the diverse trajectories of learning that were identified in the last section as well as identify exploring as a form of information seeking are represented in the diagrams.

6.3.1 Spaces and Contexts for Exploration

Music can be found wherever we look, and as such, the learning of music can occur just about anywhere. As noted in the last section, actors, institutions, and relationships mediate our conceptualization of music vis-à-vis the way we interact with them as the pieces that make up larger socio-musical worlds. Non-musicians’ modes of learning—or exploration of musical knowing or knowledge—are thus mediated by their interaction with various socio-musical worlds, communities, and practices that serve the function of preserving and transmitting music
knowledge to various degrees. In other words, the exploration of such music knowledge is mediated by the personal way in which we prefer to interact with, and within, such communities.

Consider Allan’s experience of learning music, which is marked by a multitude of musical friendships and involvements in music-making (barbershop, high school band). These relations and connections afforded peripheral engagement with and exploration of musical worlds such as those of orchestral musicians and art music composers. These are worlds in which he is considered a non-musician, but welcomed because of his appreciation of their music and the alternative perspectives that he brings with his technical background.

Furthermore, Allan shows a personal preference for reading about different ways of conceptualizing music, as reflected by his fascination with the ideas of mathematical concepts and patterns offered in *Gödel, Escher, Bach*, as well as his fascination with understanding music in terms of human’s aural perception.

This metaphor of exploring music communities extend into the online world as well, as reflected in Allan’s interactions within online contexts, where fans of the Grateful Dead and early adopters of the eigenharp share their interest with others, in Chloe’s engagement with ukulele communities both in real life and online, and in Simon’s use of the world of classical music-making as a frame of reference for his own musical explorations. Essentially, wherever there are people, wherever they interact, there are potential perspectives and approaches to music for discovery.

6.3.2 Pushing Beyond Boundaries and Limits

To continue with the idea of discovery and exploration, the metaphor of “spaces” offer a way of situating their processes of exploration—or modes of learning— within some kind of space, whether conceptual, virtual, or physical. These are also the same kinds of spaces in which we conceptualize the process of information seeking that non-musicians engage in. Nonaka’s concept of “Ba” as an existential space that facilitates different stages in the process of knowledge creation, while geared towards organizational knowledge, offers a similar metaphor that highlights the importance of space:
The concept of ba unifies the physical space, the virtual space, and the mental spaces. Ba is the world where the individual realizes himself as part of the environment on which his life depends. (Nanoka, 2004, p. 40)

Spaces also offer a way to consider the notion of going beyond existing boundaries, which is inherent in the process of exploration. In all five cases, the curiosity-driven nature of learning and the overcoming of limits—whether temporal, spatial, physical, or cognitive—were important aspects of self-directed learning. Self-directed learning, by its nature, is defined as an alternative to dominant forms of formal learning. Self-directed learners are those that do not, or cannot, engage in learning in that context. In many ways, the process of self-directed learning addresses the pedagogical limits of dominant forms of learning, or the barriers one experiences in being able to access them.

Engeström’s theory of expansive learning, which is driven by a learner’s “articulation and practical engagement with inner contradictions of the … activity system.” (Engeström & Sanino, 2010, p. 5), offers a further consideration of how perceived limits can inform non-musicians’ processes and modes of learning.

The expansive learning cycle calls for a constant reflection, observation, and interaction with the world through the development of models and the implementation of those models, a learning process that is not unlike the way Jason explores his musical ideas and the deep reflections he engages in when he is experiencing a musical performance, or the way Simon finds the underpinning patterns to “pass” conservatory examinations, or even Chloe’s deliberate and careful process before she finally purchased a ukulele.

The object (of an activity) is an invitation to interpretation, personal sense making and societal transformation. One needs to distinguish between the generalized object of the historically evolving activity system and the specific object as it appears to a particular subject, at a given moment, in a given action. (Engeström & Sanino, 2010, p. 6)

Using space as a metaphor, we identified four dimensions of non-musicians’ exploration processes or modes of learning: socialization, conceptualization, experimentation, and
innovation. Each of the five cases have been mapped based on these dimensions to illustrate this use.

6.3.3 Exploratory Nature of Music Knowledge Seeking

In Figure 4, the modes of learning that non-musicians engage in (innovation/experimentation) are conceptualized in relation to the kinds or ‘modes’ of interactions they have with different socio-musical worlds (socialization/conceptualization). This axial spectrum maps out a conceptualized space that helps us articulate the nature of information seeking that each non-musician engages in, by visualizing the types of interaction they engage in with different socio-cultural worlds. This was developed based on the five cases, and the introduction of new cases offers the opportunity to both refine and expand the scope.

![Figure 4. Modes of exploration inform information practice of non-musicians.](image)

The information seeking behaviours of non-musicians are motivated by the process of boundary-expanding, a process that enables non-musicians to explore potential spaces that contain musical knowledge, or to overcome perceived limits that prevent them from seeking those spaces (whether spatial, temporal, physical, or cognitive, as we identified in Chapter 5). This process of knowledge seeking is closely related to the emergent nature of the information need articulated in
the last section. Both are defined closely by the socio-musical worlds in which they are situated and specific processes that are of interest in information research.

The socializing and conceptualizing dimensions roughly correspond to an individual’s willingness or desire to engage other people as part of their process of learning, while the innovation and experimentation dimensions mirror a similar dynamic within the specific context of boundary-expanding. These dimensions are placed along a spectrum, and are intended to show tendencies rather than categories.

Jason’s position in the extreme lower right of the graph shows the extent to which he relies on experimentation and conceptualization in his learning process. Giles, on the other hand, shows a preference for exploring technological innovation that are emerging in various socio-musical worlds (further exploration of his process of self-directed learning may reveal otherwise). Both Allan and Chloe show a great reliance on their personal relationships and social engagements in their learning process, while Simon’s relatively conservative process of learning still retains elements of exploration.

Figure 5. "Trajectories" of exploration as information practice of non-musicians.
When each case study was situated on the chart, it was clear that what emerged was not the full picture. For example, Allan also actively explores various conceptualizations of music from different disciplines, and Simon’s participation in community orchestras is a highly social activity, but these activities were not reflected in Figure 4. While one’s learning trajectory is indicative of one general direction, the process of learning engages various modes of learning. Hence, Figure 5 is more reflective of the multiplicity of modes, and in conjunction, also the multiplicity of knowledge seeking behaviours.

In Figure 6, what can be clearly seen are the range of modes employed by each non-musician, which allows us to deduce their music knowledge seeking behaviour in relation to their learning process. Slowly but surely, we are working towards articulating a holistic conceptualization of their information practice.

6.3.4 Learning Modes as Context for Knowledge Seeking

The nature of music knowledge seeking is shaped by the non-musicians’ modes of interaction with various socio-musical worlds. Such interactions define the particular modes of learning in which they prefer to engage and, in turn, mark the socio-musical worlds or “knowledge trajectory” that has the potential to satisfy their curiosity. Furthermore, we have identified boundary-expanding and overcoming perceived barrier as important motivations for engaging in exploring musical knowledge.

6.4 Seeking What We Have Yet to Know: The Information Practice of Non-Musicians

“Unsystematic” knowledge ... [that] does not fit neatly into an institutionalized paradigm is adaptive to change, and their related knowledge practices emerge based on emergent contexts. The process of responding to the emergent contexts guides the agent, not presuppositions of what is the right way to respond. (see Section 2.2.4 in this thesis)

To search for something before we can articulate what that something is seems like a paradox, yet that is what we frequently do throughout our lives. Instead of a discretely articulated information need being satisfied by a corresponding ‘right’ piece of information, the situation is
almost the complete opposite: the need, despite its existence, is not well articulated, and the ‘thing’ that will satisfy that need is somewhere ‘out there.’ After casting such a wide net, it is an iterative process of elimination and recasting.

In this section, we will summarize and tie together some of the findings and articulate a way of understanding the information practices of non-musicians who are engaged in self-directed learning. In particular, we see the co-formative nature of a learner’s subjective “small world” context and the “large world” context of their socio-musical world as an important key to understanding non-musicians’ information practices.

6.4.1 “Small” and “Large” World Context

The information practice of the non-musician is characterized by a constant negotiation between their “small world” contexts and their “large world” contexts. On the one hand, the nature of self-directed learning gives the learner’s agency a primacy that is not common in instructional contexts; on the other hand, learning must be situated within some socio-musical world with which the learner can interact. Furthermore, modes of learning are highly personal, but they are also shaped by the way particular communities and practices, situated within particular socio-musical worlds, mediate their own musical knowledge. As Engeström & Sanino (2010) observes:

... an individual subject’s ideas and aspirations are not only taken as idiosyncratic expressions of the subject’s particular life history; they always also draw upon and interact with generalized cultural models and motives, or social representations. (p. 18)

This ongoing negotiation between the self and the world is also a tenor in the information practice of non-musicians, whose information behaviour is marked by a process of navigating within contexts and processes that are related to specific music-related activities, with self-directed learning being one such activity.
6.4.2 Knowledge Trajectories

We have referred to the concepts of learning trajectories and modes of learning as dimensions of a learning process. A related dimension that is specific to the information practices of non-musicians could be described as their knowledge trajectories.

The information practices exhibited by the non-musicians were all in some way a process of ‘orienting’ themselves, either as part of their larger learning trajectory (identifying socio-musical worlds), or in their modes of learning (interacting with different socio-musical worlds). As such, their modes of knowledge seeking consist of the exploration of potential knowledge spaces, as well as the orientation of oneself within known knowledge spaces.

To conceptualize non-musicians’ information practices as knowledge trajectories also accounts for the experience of plateau in a learning process, or for the variable levels of dedication and commitment to self-directed learning that one has at any given time. The discontinuous nature of self-directed learning is also matched by the demonstrated ability of the learner to continue along the same trajectory when the right conditions nurture that process again. As such, the associated knowledge trajectory will also reemerge within the learning context, albeit perhaps within a new technological and information space.

6.4.3 Exploration and Orientation

Non-musicians’ information practice is in many ways a response to the emergent nature of their learning process. Trajectories of learning and modes of learning offer a conceptual compass with which they navigate both known and unknown territories. Along the same metaphor, knowledge trajectories define the knowledge space within which they can explore unknown approaches to learning music to expand their understanding of music or to orient themselves by the processes of learning and socio-musical worlds that they are already familiar with. Both activities occur within large world and small world contexts, and are mutually constituted. For example, in order to orient oneself, one needs to explore the space around them, and before one leaves, one needs to know their own point of departure.
In order to consider the complex relationships between learning process and information practice, we mapped out the intersection between the subjective/personal and objective/social contexts of the learner, as well as the two dimensions of the learning process—trajectories and modes of learning—situating specific information practices of non-musicians at their cross sections (Figure 6). In particular, drawing on Nonaka’s idea that spaces (1998) and platforms are fundamental to the facilitation of knowledge creation, we use this framework to explore the kinds of spaces within which non-musicians can engage in the practice of exploration and orientation.

The personal interests of the learner are articulated by the presence of the small world context of a person’s character, personalities, and inclinations, as well as the large world context of their
social worlds. Learning as a context is articulated by the two dimensions of the learning process: namely, the *trajectories of learning* and the *modes of learning*. While these ideas have already been introduced, they are used here to gain a holistic perspective on the information practices of non-musicians.

While learning trajectories rarely change, they do point to particular spaces from which music knowledge emerges. Small world contexts delineate the full spectrum of spaces in which the learner orients him or herself, while large world contexts mark the potential contexts for exploration. For example, in Giles’ case, he is using the world of innovative technologies, an intimately familiar world, to explore his musical interests. Even in Simon’s case, his exploration of online resources after many years of absence from learning the trumpet lead to new ways of finding resources that he could use.

Modes are closely associated with personal inclinations, which, like learning trajectories, tend not to change but can, of course, be expanded or reduced. Large world contexts such as music communities also have modes of knowledge transmission or mediation that are closely associated with them. A learner at times have to engage in modes of learning that they are unfamiliar or even uncomfortable with, just as knowledge practices are often transformed by the mode of preservation and transmission. For example, Allan’s small world context and large world context have shaped his learning process and information practice. In the ‘small world’ context, he recognizes the eventual need to master the piano in order to engage with music more intuitively on the computer, even though fine motor control is not a mode of learning that suits him. In the ‘large world’ context, the emergence of online communities has opened up the possibility of engaging with other fans of the Grateful Dead, who share instructional videos on how to play their covers. The emergence of information practices come from within as well as without.

6.5 Towards Knowledge Platforms for Music Knowledge

...knowledge needs to be nurtured, supported, enhanced, and cared for. Thinking in terms of systems and ecologies can help provide for the creation of platforms and cultures where knowledge can freely emerge. (Nonaka, 1998, p. 53-54)
The findings here address only the user aspect of designing effective platforms for knowledge transmission. The focus on non-musicians has necessarily focused on the type of users who are looking for knowledge, but a large part of knowledge systems are also formed by the producers and transmitters of music. Their existence is acknowledged in the roles of forum moderators, instrument vendors, and producers of instructional videos and well designed PDFs of chord charts. However, what the findings point to is that despite the plethora of “information” that is becoming available online, the fundamental challenge of connecting people with the resources they seek still remains. The challenge of developing solutions for individuals whose information needs cannot be articulated is perhaps even more difficult to approach.

In this chapter, we have offered an approach to understanding the information needs of non-musicians within the context of self-directed learning. While the discussion has been necessarily focused on learning as a process, the findings point to a design approach that addresses problems of the mediation and facilitation of knowledge along with problems of indexing and knowledge organization (see Lam, 2011), on a proposed approach for music knowledge organization). The way that intended users are conceptualized has a great impact on the way information systems are designed.

By virtue of conceptualizing their information needs as emergent, and characterizing their information practice as a process of exploration and orientation, a corresponding challenge within the context of system design is how to map out knowledge as spaces for exploration. There is a need for the user to map out their personal space, to mark the larger knowledge spaces with which they are familiar, and to have the ability to see just beyond the boundaries and determine a direction for exploration. For the field of information research, the articulation of those spaces in terms of the acquisition, transmission, and preservation of music knowledge requires further exploration of the nature of the interactions and relationships between two or more groups of actors within a shared socio-musical world.

Furthermore, the notion of ‘relevance,’ an important concept in evaluating information systems, is also reconceptualized by using the space metaphor. The relevance is determined much more by the knowledge trajectory than it is by the articulation of an information need itself. Beyond a
way of thinking about the timeline of a search process, space also affords a way of thinking about an individual’s information practice over a longer time frame, and to develop more nuanced understanding of users within various contexts and domains.

For the field of information research, the articulation of research and design questions in terms of knowledge spaces that facilitate the acquisition, transmission, and preservation of knowledge within specific domains offers not only a rich area for exploration.
7 Conclusion

This study began with the idea to explore the role of online music knowledge in supporting the self-directed learning of non-musicians by looking at five self-identified non-musicians and exploring their information practices within a learning context. The initial interest was specifically in the use of online resources. Understanding the way online resources were being used by individuals trying to learn music, it was assumed, would help us uncover new ways in which online resources could be better organized to make them easier to find.

In hindsight, it is not surprising that the availability of online resources such as instructional videos on YouTube have not fundamentally changed the way people learn. In the overall learning process of the five non-musicians, the use of online resources are situated within their personal information practice in terms of online content, and the challenges they try to overcome as they pursue their interests in playing an instrument are not really resolved by the availability of those resources. Online resources can make finding certain artifacts such as sheet music easier, or provide a quick way to get a sense of what other learners are struggling with, which helps learners to realize that their challenges are common experiences. What online resources do not present is a learning trajectory, or a knowledge trajectory, along which you can follow and explore potentially relevant and interesting resources.

The exploration of music knowledge has offered us a context within which to explore the potential for music as a domain for information research, while non-musicians offered a rich case through which to reflect on the fundamental challenges a user encounters when trying to articulate their information need in an unfamiliar knowledge space. In articulating information needs along a spectrum, the dynamic nature of information seeking behaviours becomes much clearer, opening up an alternative approach to conceptualizing user behaviour as well as the way content can be organized and presented for their use.

While this study has used non-musicians as the focus of exploration, a study of individuals over a longer period of time to look at changes in information practice and the process of self-directed learning would no doubt further clarify ideas that have been introduced in this study, and reveal
new connections. Furthermore, the situated nature of their information practice within a larger socio-musical world will inevitably draw our attention to study the relationship between actors and institutions more closely, and engage with the larger ethos of online learning and music knowledge transmission that is currently happening\textsuperscript{10}. The potential for overcoming geographical, financial, and cultural barriers to knowledge transmission and preservation will depend on platforms that are designed to facilitate such emergent processes. Considering the various actors involved in such efforts, understanding the needs and behaviour of non-musicians contributes a necessary but insufficient perspective with which to address the needs of users who have knowledge to share, their process of knowledge creation, and their social worlds. New insight into system-related challenges, such as information retrieval and knowledge organization, will also be essential.

While existing literature can provide useful frameworks for understanding the sociological, historical, and technical contexts from which the problem of unfairly disadvantaged or sidelined individuals arise, only such individuals themselves can articulate to us what their needs are. It then becomes the task of researchers to elicit that data, which can be analyzed and used for the purpose of designing platforms that can better support self-directed learning in a holistic manner.

\textsuperscript{10} A separate study on the transmission of \textit{shakuhachi} over Skype with Dr. Kiku Day reflects one such pursuit.


Appendix A: Call for Participation

_Social Media Status updates:_

Are you a non-musician who learns how to play music online? Yes, I mean YOU. I need participants for my research project: (insert URL)

Do you or do you know someone that’s learning how to make music all on their own? I bet you do but you won’t know till you ask: (insert URL)

_Email Recruitment:_

Hi there,

Are you someone who has never been formally trained in music? And yet some how you are stumbling on your own, either online or in real life, finding resources and people to help you learn how to play the ukulele? Or perhaps how to play some tunes on the piano because honestly, how hard can it be? If this sounds like you, I would love to hear from you.

I am looking for participants in a research study where I am looking at how non-musicians seek music performance knowledge in an online setting. However, at this general recruitment stage, I would like to get a general sense of who you are, what kind of music training (or lack there of) you have that makes you feel that you are a ‘non-musician’, and what kind of music has got you picking up an instrument and learning to make some music.

Please go to http://margaretlam.ischool.utoronto.ca to get a more detailed description of the project if you are interested, as well as a simple form where I would like to hear your story about learning music when you don’t even know how to explain what it is that you want to learn. If you think there might be a hidden musical genius in your own network, feel free to forward this email and help me discover them from our midst and pay them the proper respect and accolade that is due.

Best regards,

Margaret Lam
Master of Information Candidate
University of Toronto
Margism.com
Welcome!
Did you come to tell me a little bit about who you are, and the story of how you are learning music on your own? The form below will allow you to share your thoughts with me.

If you came to learn a little more about my research project, scroll down to read a brief research statement, a general timeline for this project, and a little about myself and the research team.

Disclaimer: All information collected on this recruitment page will be considered confidential and will not be released to a third party. Through this general recruitment stage, I will be seeking three primary research subjects for my research in early 2011. Once that selection has occur, all digital and virtual forms of the information collected through the form below will be permanently deleted. If you have any questions, please do not hesitate to contact me directly at marge.lam@utoronto.ca.

I look forward to hearing your stories! Sincerely, Margaret Lam

I'm interested in your story.
What's your name?

What's your email?

What city do you live in?

How old are you? You can give a range (i.e. 20s) or a specific age.

Tell me a bit about yourself. How have you learned music online, whether you have any musical training, that kind of thing.

Are you interested in being a research participant (i.e. interviews, space documentation) from about January to February 2011? Yes/No

SUBMIT FORM

Research Statement
This research is motivated by a personal interest to explore the practice of music knowledge seekers and music knowledge producers as members of an online knowledge community or network. In particular, the world of socially-based online media as a
context for the pursuit of music knowledge by individuals who have not engaged with conventional institutions of music knowledge is of particular interest.

This research agenda is inspired by my experience in music history and ethnomusicology as well as information science, and reflects an effort on my part to integrate the best of both disciplines in an exploratory study. Furthermore, as a student in the Knowledge Media Design collaborative program (KMD CP), I have an interest in the design of online knowledge platforms, specifically within the domain of music. The findings of this exploratory will inform in a variety of ways my design projects in that context.

Three case studies of such individuals in Toronto will be conducted as an exploratory study of this social world. The case of individuals who self-identifies as having no musical training provides a much richer sample with which to conduct case studies, compared to those who are already engaged with conventional musical institutions. The self-identified non-musicians' conceptualization of music and related knowledge will not be heavily influenced by the Western European paradigm of music, which will allow the personal patterns of interaction the subjects have with the world of online music knowledge to emerge without being tinged or informed by socio-cultural norms and convention within that paradigm.

Research Timeline
January 2011: General Recruitment (Share your stories!)
January 2011-February 2011: Data collection with 3 case studies
March 2011 onward: Data Analysis, Thesis Writing

About the Researcher
I am currently a master's candidate at the Faculty of Information, exploring the intersection of music knowledge, information science, and system design. I was inspired by a friend who couldn't keep a beat or tell the difference between an E minor chord from an E major chord. I watched him overcoming his own perceived limits as he tried to learn the guitar, struggling to co-ordinate counting and strumming and chord switching at first, to being able to play the first few phrases of Fur Elise that was arranged for guitar. I want to learn more about how people are learning how to make music on their own, so that we can design knowledge platforms that can help people learn music on their own.

This project is supervised by Prof. Matt Ratto at the faculty of Information and Director of the Critical Making Lab, with support with Prof. Rhonda McEwen. Prof. Jenna Hartel supervised a related pilot study in 2009.

This research has been made possible with the support of the Social Science and Humanities Research Council.
Appendix C: Interview Guide for semi-structured interviews

1. People, individually and collectively, are prepared to act on the basis of the meanings of the objects that comprise their world.
   a. How do you engage and interact with music in your daily life?
   b. What qualities of music do you listen for? What stands out to you?
   c. Can you describe to me the process with which you decide what you want to learn, and how you subsequently engage in learning?
   d. Can you show me something that you have learned to perform?
   e. Can you show me something that you are currently trying to learn?
   f. Can you show me something that you are having trouble learning?
   g. What technological resources do you use to help you learn music?

2. The association of people is necessarily in the form of a process in which they are making indications to one another and interpreting each other’s indications.
   a. What elements in your personal, professional or academic life (i.e. individuals, events, etc.) have motivated you to learn music on your own?
   b. How has your engagement with music knowledge impacted your life?
   c. Who and what are the individuals or activities that you regularly engage with in your pursuit of music knowledge?
   d. If there are no particular individuals or activities that you regularly engage with, what kind of interactions do you have with individuals if at all?
   e. Are there other sources of inspiration for wanting to learn music?

3. Social acts, whether individual or collective, are constructed through a process in which the actors note, interpret, and assess the situations confronting them.
   a. Do you remember the first time you went online to search for music knowledge? Can you describe to me what it was like?
   b. What is it about the way you currently learn music that works for you?
   c. What are the challenges and obstacles that you have had to overcome?
   d. Are there sources or search strategies that you have found more reliable than others? Have you found a search strategy that you rely on regularly?
   e. Are there ways of learning how to play music that you have found more reliable than others? Have you found a learning method that you rely on?
   f. Do you know of anyone else that is learning music online?
   g. Do you share what you do with friends? If so with whom? If not why not?

4. The complex interlinkages of acts that comprise organization, institutions, division of labor, and network of interdependency are moving and not static affairs.
   a. What community organizations or social groups do you participate in?
   b. Are there any online communities or groups that you participate in?
   c. Do you engage in music activities with any of them?
   d. Do you think about the music you’re learning in specific allotted time and place,
or can it occur at any time? Give me some examples.
e. Do you have any interactions with any music organizations or institutions? If so, what is the nature of the interaction?
f. How would you compare and contrast the way you are learning, and the way learning would occur in a music institution?
Appendix D: Consent Form

OVERVIEW

This interview is part of a master’s thesis at the Faculty of Information, University of Toronto. The purpose of this study is **to explore how non-musicians seek music knowledge in both online and offline settings**. There are no known risks to you for assisting with this project. In fact, you may find that positive feelings, such as enthusiasm and pride, occur during the research process.

Your responses will be kept confidential unless you give the student permission to quote you directly. You may request that any part of the interview can remain confidential even if you agree to be quoted directly. Participation in this interview is voluntary and you are free to withdraw at any time. You may request and receive a summary of the research results. Please give your address to the student so that he/she may send you the summary once it is written.

CONSENT

*I acknowledge that the purpose and method of this research has been explained to me and that any questions that I have asked have been answered to my satisfaction. I have agreed to participate. I know that I may ask, now and in the future, any questions that I may have about this project. I understand that I can withdraw from the interview at any time. I have been assured that the notes, transcript, and/or photographs relating to me will be kept confidential and that no information will be released or printed that will disclose my personal identify unless I specify otherwise. Only the researcher will have access to the information I provide and this information will be destroyed within three months of the completion of the thesis (July 2010). I have been given a copy of this consent form for my records.*

I agree to be quoted directly in the anonymized report  ___ Yes  ___ No
I agree to be tape-recorded during interview sessions  ___ Yes  ___ No
I agree to have my physical and virtual spaces photographed  ___ Yes  ___ No

Participant’s Name (please print) __________________________________________
Signature ______________________________  Date ________________

Researcher’s Name (please print) __________________________________________
Signature ______________________________  Date ________________
Appendix E: Hand Annotations of Codes (Sample)
Appendix F: Mind map of Codes

[Image: Mind map of Codes]